| DOCKETE | DOCKETED | | | | |
|------------------------|---|--|--|--|--|
| Docket Number: | 99-AFC-03C | | | | |
| Project Title: | METCALF Energy Center Compliance | | | | |
| TN #: | 206509 | | | | |
| Document Title: | Annual Compliance Report for Metcalf Energy Center 2014 | | | | |
| Description: | COM-7 Annual Compliance Report (ACR) for Metcalf Energy Center (99-AFC-3C) for 2014 | | | | |
| Filer: | Eric Veerkamp | | | | |
| Organization: | California Energy Commission | | | | |
| Submitter Role: | Commission Staff | | | | |
| Submission Date: | 11/4/2015 3:48:20 PM | | | | |
| Docketed Date: | 11/4/2015 | | | | |

1 Blanchard Road Coyote, CA 95013

August 18, 2015

Mr. Eric Veerkamp 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 2014

Dear Mr. Veerkamp:

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 2014 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

cc: Barbara McBride Calpine Corp. Katherine Piper Calpine Corp

California Energy Commission 2014 Annual Compliance Report Metcalf Energy Center – 99-AFC-3

Table of Contents

| 1. | Compliance SummaryAppendix 1 |
|-----|--|
| 2. | Conditions of Certification MatrixAppendix 2 |
| 3. | Operating Data Summary Appendix 3 |
| 4. | 40 CFR Part 75 Reports Appendix 4 |
| 5. | Hazardous Material InventoryAppendix 5 |
| 6. | Cooling Tower Inspection Appendix 6 |
| 7. | Water Usage Summary Appendix 7 |
| 8. | Waste – 3 Report Appendix 8 |
| 9. | Notices of Non-Compliance Appendix 9 |
| 10. | Plume Summary YTD Appendix 10 |

METCALF ENERGY CENTER, LLC TRANS-3 HAZARDOUS MATERIAL DELIVERIES

| | JANUARY | | |
|--|-----------------------|------------------------|--------------------------|
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY UOM |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 1/2/2014 | 6700.5 GAL |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 1/2/2014 | 6700.5 GAL |
| UNIVAR | | 1/3/2014 | 46960 LBS |
| UNIVAR | SODIUM HYPOCHLORITE | 1/3/2014 | 4516.2 GAL |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 1/5/2014 | 6702.8 GAL |
| HILL BROTHERS CHEMICAL CO. | AMMONIA CL240 | 1/9/2014 | 6700.1 GAL 4400 LBS |
| CHEMTREAT | FEBRUARY | 1/21/2014 | 4400 LB3 |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY UOM |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 2/14/2014 | 6700.4 GAL |
| ChemTreat | BL152 | 2/19/2014 | 1592 LBS |
| ChemTreat | CL4500 | 2/20/2014 | 10130 LBS |
| Univar | SODIUM HYPOCHLORITE | 2/21/2014 | 4538 GAL |
| ChemTreat | BL1795 | 2/21/2014 | 483 LBS |
| UNIVAR | SULFURIC ACID | 2/24/2014 | 47720 LBS |
| | MARCH | | |
| | CHEMICAL | RECEIVED | QUANTITY UOM |
| HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. | AMMONIA | 3/2/2014 | 6700.6 GAL 6701.6 GAL |
| ChemTreat | AMMONIA RL1245 | 3/6/2014 3/11/2014 | 1022 LBS |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 3/15/2014 | 6701.7 GAL |
| GOLDEN GATE PETROLEUM | UNIION TURBINE OIL 32 | 3/17/2014 | 385 GAL |
| GOLDEN GATE PETROLEUM | UNIION TURBINE OIL 32 | 3/20/2014 | 2100 GAL |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 3/22/2014 | 6702.3 GAL |
| UNIVAR | SULFURIC ACID | 3/24/2014 | 47260 LBS |
| Univar | SODIUM HYPOCHLORITE | 3/24/2014 | 4540 GAL |
| ChemTreat | BL152 | 3/26/2014 | 1194 LBS |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 3/27/2014 | 6709.7 GAL |
| | APRIL | | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY UOM |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 4/4/2014 | 6702.6 GAL |
| HILL BROTHERS CHEMICAL CO. | | 4/12/2014 | 6703 GAL |
| UNIVAR | | 4/14/2014 | 46280 LBS |
| Univar ChemTreat | SODIUM HYPOCHLORITE | 4/16/2014 | 4540 GAL 1194 LBS |
| HILL BROTHERS CHEMICAL CO. | BL152 AMMONIA | 4/16/2014 4/18/2014 | 6700.2 GAL |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 4/18/2014 | 6700.2 GAL |
| ChemTreat | BL152 | 4/30/2014 | 1194 LBS |
| | MAY | 7,50,2014 | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY UOM |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 5/8/2014 | 6700 GAL |
| | AIVIIVIONIA | 0,0,202 | |
| UNIVAR | SULFURIC ACID | 5/9/2014 | 44924 LBS |
| UNIVAR HILL BROTHERS CHEMICAL CO. | | | |
| | SULFURIC ACID | 5/9/2014 | 44924 LBS |

| Univar | SODIUM HYPOCHLORITE | 5/23/2014 | 4843 | GAL | |
|--------------------------------------|------------------------------|------------------------|-----------------|--------|-----|
| ChemTreat | CL2875 | 5/23/2014 | 994 | LBS | |
| ChemTreat | BL1795 | 5/23/2014 | 483 | LBS | |
| ChemTreat | RL1245 | 5/27/2014 | 1533 | LBS | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 5/30/2014 | 6701.1 | GAL | |
| ChemTreat | BL152 | 5/30/2014 | 1194 | LBS | |
| | JUNE | | | | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY | UOM | |
| UNIVAR | SULFURIC ACID | 6/3/2014 | 46720 | LBS | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 6/5/2014 | 6701.3 | GAL | |
| ChemTreat | BL152 | 6/11/2014 | 1194 | LBS | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 6/12/2014 | 6701.5 | GAL | |
| ChemTreat | RL9007 | 6/12/2014 | 519 | LBS | |
| Univar | SODIUM HYPOCHLORITE | 6/13/2014 | 3 | 55 GAL | DRU |
| Univar | SODIUM HYPOCHLORITE | 6/16/2014 | 4538 | GAL | |
| GOLDEN GATE PETROLEUM | 76 FAM, MULTIPURPOSE R&O 220 | 6/18/2014 | 55 | GAL | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 6/24/2014 | 6700.5 | GAL | |
| UNIVAR | SULFURIC ACID | 6/25/2014 | 48220 | LBS | |
| | JULY | | | | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY | UOM | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 7/6/2014 | 6700.1 | GAL | |
| ChemTreat | BL152 | 7/10/2014 | 1592 | LBS | |
| ChemTreat | BL1795 | 7/11/2014 | 483 | LBS | |
| ChemTreat | RL1245 | 7/11/2014 | 1533 | LBS | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 7/12/2014 | 6700.2 | GAL | |
| ChemTreat | CL240 | 7/15/2014 | 4400 | LBS | |
| Univar | SODIUM HYPOCHLORITE | 7/19/2014 | 4540 | GAL | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 7/24/2014 | 6731.1 | GAL | |
| UNIVAR | SULFURIC ACID | 7/30/2014 | 46300 | LBS | |
| ChemTreat | BL152 | 7/30/2014 | 1194 | LBS | |
| ChemTreat | CL206 | 7/31/2014 | 102 | LBS | |
| | AUGUST | | | | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY | UOM | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 8/1/2014 | 6702.4 | | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 8/7/2014 | 6701.5 | | |
| Univar | SODIUM HYPOCHLORITE | 8/12/2014 | 4034 | | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 8/14/2014 | 6701.1 | | |
| ChemTreat | BL152 | 8/14/2014 | | LBS | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 8/21/2014 | 6700.7 | | |
| UNIVAR | SULFURIC ACID | 8/21/2014 | 47860 | | |
| Univar | | 8/27/2014 | 4541 | | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 8/28/2014 | 6703.4 | | |
| ChemTreat | RL1245 | 8/28/2014 | 1533 | | |
| ChemTreat | BL1795 | 8/29/2014 | 966 | LBS | |
| | SEPTEMBER | | OUANTITY | | |
| | | RECEIVED | QUANTITY | UOM | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 9/3/2014 | 6701 | | |
| HILL BROTHERS CHEMICAL CO. | | 9/9/2014 | 6700.3 | | |
| ChemTreat | | 9/10/2014 | | | |
| UNIVAR HILL BROTHERS CHEMICAL CO. | SULFURIC ACID AMMONIA | 9/12/2014 9/16/2014 | 47920 6700.4 | | |
| TILL DRUITERS CHEIVIICAL CU. | | 9/10/2014 | 0700.4 | GAL | |
| | | | | | |

| HILL BROTHERS CHEMICAL CO. | AMMONIA | 9/22/2014 | 6700.9 G | | | |
|---|--|--|---|---|--|--|
| Univar | SODIUM HYPOCHLORITE | 9/23/2014 | 4589 G | | | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 9/30/2014 | 6000.2 G | iAL | | |
| | OCTOBER | | | | | |
| VENDOR NAME | CHEMICAL | RECEIVED | | UOM | | |
| IILL BROTHERS CHEMICAL CO. | AMMONIA | 10/11/2014 | 6700 G | | | |
| acific Coast Chemicals | SULFURIC ACID | 10/13/2014 | 45260 L | | | |
| ChemTreat | BL152 | 10/15/2014 | 796 LI | | | |
| ChemTreat | BL152 | 10/15/2014 | 1194 LI | | | |
| IILL BROTHERS CHEMICAL CO. | AMMONIA | 10/16/2014 | 6700 G | | | |
| Jnivar | SODIUM HYPOCHLORITE | 10/17/2014 | 4536 G | iAL | | |
| ChemTreat | RL1245 | 10/20/2014 | 1533 L | BS | | |
| ILL BROTHERS CHEMICAL CO. | AMMONIA | 10/21/2014 | 6892.9 G | iAL | | |
| ILL BROTHERS CHEMICAL CO. | AMMONIA | 10/27/2014 | 6702.7 G | iAL | | |
| ChemTreat | RL9007 | 10/27/2014 | 519 LI | BS | | |
| Pacific Coast Chemicals | SULFURIC ACID | 10/30/2014 | 50380 L | BS | | |
| GOLDEN GATE PETROLEUM | FAMILY, TURBINE OIL 100 | 10/30/2014 | 55 G | iAL | | |
| | NOVEMBER | | | | | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY | UOM | | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 11/1/2014 | 6700.2 G | iAL | | |
| Jnivar | SODIUM HYPOCHLORITE | 11/6/2014 | 4538 G | iAL | | |
| ChemTreat | CL206 | 11/6/2014 | 51 L | BS | | |
| IILL BROTHERS CHEMICAL CO. | AMMONIA | 11/8/2014 | 6702.1 G | iAL | | |
| ILL BROTHERS CHEMICAL CO. | AMMONIA | 11/13/2014 | 6705.6 G | iAL | | |
| ILL BROTHERS CHEMICAL CO. | AMMONIA | 11/18/2014 | 6717.4 G | iAL | | |
| ChemTreat | BL152 | 11/18/2014 | 1194 L | BS | | |
| Jnivar | SODIUM HYPOCHLORITE | 11/19/2014 | 4 5 | 5 GAL DRI | | |
| ChemTreat | BL152 | 11/20/2014 | 398 LI | BS | | |
| Pacific Coast Chemicals | SULFURIC ACID | 11/21/2014 | 45420 L | BS | | |
| HILL BROTHERS CHEMICAL CO. | AMMONIA | 11/23/2014 | 6702.4 G | | | |
| | DECEMBER | | | | | |
| | DECEIVIDER | | | | | |
| VENDOR NAME | CHEMICAL | RECEIVED | QUANTITY | | | |
| | | RECEIVED 12/1/2014 | QUANTITY 4387 G | UOM | | |
| Jnivar | CHEMICAL | | | UOM GAL | | |
| Jnivar ChemTreat | CHEMICAL SODIUM HYPOCHLORITE | 12/1/2014 12/1/2014 | 4387 G | UOM GAL BS | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 | 12/1/2014 12/1/2014 12/2/2014 | 4387 G 1592 L | UOM GAL BS GAL | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA | 12/1/2014 12/1/2014 | 4387 G 1592 LI 6701.2 G | UOM GAL BS GAL GAL | | |
| Jnivar ChemTreat HLL BROTHERS CHEMICAL CO. HLL BROTHERS CHEMICAL CO. JNIVAR | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 | 4387 G 1592 LI 6701.2 G 6708.8 G 47580 LI | UOM GAL BS GAL GAL BS | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 | 4387 G 1592 L 6701.2 G 6708.8 G | UOM GAL BS GAL GAL BS GAL | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 | 4387 G 1592 LI 6701.2 G 6708.8 G 47580 LI 6751.7 G | UOM GAL BS GAL BS GAL GAL | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. Jnivar | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA AMMONIA SODIUM HYPOCHLORITE | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 | 4387 G 1592 LI 6701.2 G 6708.8 G 47580 LI 6751.7 G 6700 G 4539 G | UOM GAL BS GAL GAL GAL GAL | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA AMMONIA SODIUM HYPOCHLORITE AMMONIA | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 | 4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G | UOM GAL BS GAL BS GAL GAL GAL GAL | | |
| Jnivar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. JNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA SODIUM HYPOCHLORITE AMMONIA AMMONIA | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 12/21/2014 | 4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G 6700 G | UOM GAL BS GAL GAL GAL GAL GAL GAL | | |
| Univar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. UNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA AMMONIA SODIUM HYPOCHLORITE AMMONIA AMMONIA | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 12/24/2014 12/24/2014 | 4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G 6700 G 6700 G | UOM GAL BS GAL BS GAL GAL GAL GAL GAL | | |
| VENDOR NAME Univar ChemTreat HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. UNIVAR HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. HILL BROTHERS CHEMICAL CO. GOLDEN GATE PETROLEUM | CHEMICAL SODIUM HYPOCHLORITE BL152 AMMONIA AMMONIA SULFURIC ACID AMMONIA SODIUM HYPOCHLORITE AMMONIA AMMONIA | 12/1/2014 12/1/2014 12/2/2014 12/7/2014 12/11/2014 12/12/2014 12/17/2014 12/18/2014 12/21/2014 12/21/2014 | 4387 G 1592 L 6701.2 G 6708.8 G 47580 L 6751.7 G 6700 G 4539 G 6700.5 G 6700 G | UOM GAL BS GAL GAL GAL GAL GAL GAL GAL | | |

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.

UNIT: Steam Turbine

| | TURBINE / GENERATOR ENCLOSURE | GENERATOR / CONDENSER SOUND WALL |
|---------------------------|-------------------------------------|--|
| Chalking | 1 | 1 |
| Erosion | 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:

UNIT: Cooling Tower

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

Comments:

Slight algae growth on the superstructure (not visible from outside the Plant).

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 | 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:

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.

UNIT: Water Tanks

| | SERVICE/FIRE WATER | DEMINERALIZED WATER |
|---------------------------|-----------------------|------------------------|
| 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:

UNIT: Buildings

| | <u> </u> | |
|---------------------------|----------------|-----------|
| | 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:

Appendix 1

Metcalf Energy Center -- 99-AFC-3 2014 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 2014 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 2014 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 2014 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 2014 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 2014 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 2014 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 2014 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 2014 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 2014 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.
 - On June 1, 2014 the facility exceeded the NH3 Slip 3-Hour rolling average emission limit on Unit 1. Details are in Appendix 9.
 - On August 7, 2014 the facility exceeded the NOx 1-hour rolling average and the NOx lb/mmBTU 1-hour rolling average limits on Unit 2. Details are in Appendix 9.

• On December 30, 2014 exceeded the NH3 Slip 3-Hour rolling average emission limit on Unit 1. Details are in Appendix 9.

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.

- On May 12, 2014 the facility exceeded the CO emissions limit during a startup on Unit 1. Details are in Appendix 9.
- On July 22, 2014 the facility exceeded the CO emissions limit during a start-up on Unit 2. Details are in Appendix 9.
- AQ-22 The Gas Turbines shall not be in start-up mode simultaneously.

No violation of this condition occurred for the 2014 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 2014 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 2014 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 2014 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 2014 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 2014 reporting year.

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

No violations occurred during the 2014 reporting year.

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

No violation of this condition occurred for the 2014 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 2014 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 6.

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 7.

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 2014 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.

VIS-1 Treat the project structures, buildings, and tanks visible to the public in a nonreflective 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.

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

The total cooling tower plume hours for 2014 were 3 hours, as noted in the December 2014 Plume Summary Log. A copy of the submitted log is in Appendix 10.

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 8.

Appendix 2

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| FART OF COMER | RCIAL OPERATION | 5/29/2005 | | | | | |
|---------------|--|--|---------------------------------|----------------------------|-------------------------------|-------------------------|---------------------|
| ROUGH YEAR | | 12/31/2014 | 1 | | | | |
| 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 (FSD 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 | Monthly Air Quality Reports | Ongoing | Monthly | | Öngoing |
| 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 cumutative 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 NCx) | 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 rotting 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 (FHV), the CO emission concentration shall not exceed 6.0 ppmvd on dry basis and the CO mass emission rate shall not exceed 0.0132 Ib/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 pprr.vd 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 |

| FART OF COMER | ICIAL OPERATION | 5/29/2005 | | | | | |
|---|---|--|------------------------------------|----------------------------|-----------------------|-------------------------|---------------------|
| HROUGH YEAR E | | 12/31/2014 | 1 | | | | |
| 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 no! 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 Ibs/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=588, 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 = 460 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 COMER | CIAL OPERATION | 5/29/2005 | | | | | |
| THROUGH YEAR END OF 2014 | | 12/31/2014 | | | | | |
| 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. (a) 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-i) | 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) | 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 formaldehyde, benzene, Sp&cified Poly-Aromatic Hydrocarbons (PAH's). | As part of the annual Air Quality Reports, indicate the date of any violation of this Condition including quantilative 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 | | 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 | On-site Compliance Inspections | Ongoing | Monthly | | Ongoing |
| AQ-47a | 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 totated 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 | | Provide dates and durations of any violation of this Condition to the CPM. | Air Quality Reports | Ongoing | Annual | | Ongoing |

| START OF COMER | CIAL OPERATION | 5/29/2005 | | | | | |
|---|--|--|---|----------------------------|-------------------------------|-------------------------|---------------------|
| HROUGH YEAR E | | 12/31/2014 | | | | | |
| 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. | the Annual Compliance Report, a list of hazardous materials contained at the facility in | 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 pateontological resources. | Include a description of closure activities in the facility closure plan. | 12 months prior to facility closure | Öngoing | 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 cortify 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. | 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 |

| TART OF COMER | CIAL OPERATION | 5/29/2005 | | | | | |
|-------------------|--|--|---|----------------------------|--------------------------|-------------------------|---------------------|
| HROUGH YEAR E | ND OF 2014 | 12/31/2014 | | | | | |
| Condition No. | Requirements & Task Summary | Action required | Event | Required Submittal Date | Date submitted to CPM | Date approved by CPM | Status/ Comments |
| WASTE-2 | management-related enforcement action, notify the | | Within 10 days of becoming aware of an impending enforcement action | Ongoing | Within 10 Days | | Ongoing |
| WASTE-3 | 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

| | Metcalf CT1 | | | Metcalf CT | 2 | 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 Primary Fuel Quantity Burned (MMcf GG) |
| January | 47,285 | 520.8 | January | 46,570 | 524.3 | January | 55,696 | - |
| February | 15,306 | 175.3 | February | 1,452 | 22.1 | February | 9,036 | - |
| March | 65,997 | 744.2 | March | 73,546 | 842.6 | March | 78,919 | - |
| April | 58,862 | 671.6 | April | 61,357 | 704.4 | April | 70,835 | - |
| May | 72,607 | 829.6 | May | 62,826 | 723.8 | May | 80,807 | - |
| June | 54,375 | 627.9 | June | 45,837 | 529.2 | June | 58,282 | - |
| July | 68,420 | 782.9 | July | 55,447 | 641.2 | July | 73,878 | - |
| August | 69,621 | 805.2 | August | 66,806 | 780.1 | August | 81,974 | - |
| September | 73,610 | 849.2 | September | 65,496 | 762.2 | September | 84,798 | - |
| October | 75,801 | 870.3 | October | 72,128 | 839.0 | October | 89,877 | - |
| November | 98,512 | 1,120.7 | November | 93,957 | 1,086.3 | November | 119,106 | - |
| December | 111,195 | 1,252.8 | December | 111,651 | 1,278.2 | December | 137,942 | - |

Operating Data Summary January 2014 - December 2014

Appendix 4



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 "Error 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 Error 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 2014 QTR 1 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 04/02/2014 11:35:48 AM |
| Submitter User ID: | rsilva |
| Submission ID: | 754450 |
| Resubmission Required: | No |
| EPA Analyst: | Art Diem; (202) 343-9340; diem.art@epa.gov |

EXPLANATION OF YOUR ERROR 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: http://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.

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

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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 | 884 | | | | | 884 |
| Operating Time (hrs) | 859.33 | | | | | 859.33 |
| SO2 Mass (tons) | 0.4 | | | | | 0.4 |
| CO2 Mass (tons) | 85,931.3 | | | | | 85,931.3 |
| Heat Input (mmBtu) | 1,445,985 | | - | | | 1,445,985 |
| NOx Emission Rate (lb/mmBtu) | 0.014 | | | | | 0.014 |



April 2, 2014 11:37 AM

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 "Error 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 Error 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 2014 QTR 1 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 04/02/2014 11:37:05 AM |
| Submitter User ID: | rsilva |
| Submission ID: | 754455 |
| Resubmission Required: | No |
| EPA Analyst: | Art Diem; (202) 343-9340; diem.art@epa.gov |

EXPLANATION OF YOUR ERROR 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.

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Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

April 2, 2014 11:37 AM

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 | 851 | | | | | 851 |
| Operating Time (hrs) | 825.76 | | | | | 825.76 |
| SO2 Mass (tons) | 0.4 | | | | | 0.4 |
| CO2 Mass (tons) | 82,866.0 | | | | | 82,866.0 |
| Heat Input (mmBtu) | 1,394,396 | | | | | 1,394,396 |
| NOx Emission Rate (lb/mmBtu) | 0.010 | | | | | 0.010 |



July 21, 2014 12:22 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

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Table 1: Submission Receipt and Error 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 2014 QTR 2 | |
| Error Status Level: | No Errors | |
| Submission Date/Time: | 07/21/2014 12:21:57 PM | |
| Submitter User ID: | rsilva | |
| Submission ID: | 787463 | |
| Resubmission Required: | No | |
| EPA Analyst: Carlos Martinez; (202) 343-9747; martinez.carlos@epa.gov | | |

EXPLANATION OF YOUR ERROR 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

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Facility Name: Metcalf Energy Center

Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

July 21, 2014 12:22 PM

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 | 884 | 1,426 | | | | 2,310 |
| Operating Time (hrs) | 859.33 | 1,339.90 | · · · · · · · · · · · · · · · · · · · | | | 2,199.23 |
| SO2 Mass (tons) | 0.4 | 0.6 | | | | 1.0 |
| CO2 Mass (tons) | 85,931.3 | 127,833.2 | | | | 213,764.5 |
| Heat Input (mmBtu) | 1,445,985 | 2,151,028 | | | | 3,597,013 |
| NOx Emission Rate (lb/mmBtu) | 0.014 | 0.012 | | | | 0.013 |



Dear Certifying Official:

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|--|--|
| Facility Name: | Metcalf Energy Center |
| State: | CA |
| Monitoring Locations: | 2 |
| Submission Type: | EM for 2014 QTR 2 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 07/21/2014 12:23:38 PM |
| Submitter User ID: | rsilva |
| Submission ID: | 787496 |
| Resubmission Required: | No |
| EPA Analyst: | Carlos Martinez; (202) 343-9747; martinez.carlos@epa.gov |

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Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

July 21, 2014 12:23 PM

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

| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Ozone Season | Year-to-Date |
|---------------------------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Number of Operating Hours | 851 | 1,259 | | | | 2,110 |
| Operating Time (hrs) | 825.76 | 1,194.23 | | | | 2,019.99 |
| SO2 Mass (tons) | 0.4 | 0.6 | | | | 1.0 |
| CO2 Mass (tons) | 82,866.0 | 116,333.6 | | | | 199,199.6 |
| Heat Input (mmBtu) | 1,394,396 | 1,957,547 | | | | 3,351,943 |
| NOx Emission Rate (lb/mmBtu) | 0.010 | 0.012 | | | | 0.011 |



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Table 1: Submission Receipt and Error 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 2014 QTR 3 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 10/16/2014 11:29:55 AM |
| Submitter User ID: | rsilva |
| Submission ID: | 806997 |
| Resubmission Required: | No |
| EPA Analyst: | Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov |

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Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

October 16, 2014 11:30 AM

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

| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Ozone Season | Year-to-Date |
|---------------------------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Number of Operating Hours | 884 | 1,426 | 1,616 | | | 3,926 |
| Operating Time (hrs) | 859.33 | 1,339.90 | 1,513.08 | | | 3,712.31 |
| SO2 Mass (tons) | 0.4 | 0.6 | 0.7 | | | 1.7 |
| CO2 Mass (tons) | 85,931.3 | 127,833.2 | 145,336.1 | | | 359,100.6 |
| Heat Input (mmBtu) | 1,445,985 | 2,151,028 | 2,445,539 | | | 6,042,552 |
| NOx Emission Rate (lb/mmBtu) | 0.014 | 0.012 | 0.012 | | | 0.013 |



Dear Certifying Official:

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Table 1: Submission Receipt and Error 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 2014 QTR 3 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 10/16/2014 11:31:19 AM |
| Submitter User ID: | rsilva |
| Submission ID: | 807006 |
| Resubmission Required: | No |
| EPA Analyst: | Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov |

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

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Facility ID (ORISPL): 55393 State: CA

ECMPS Feedback

October 16, 2014 11:31 AM

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

| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Ozone Season | Year-to-Date |
|---------------------------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Number of Operating Hours | 851 | 1,259 | 1,405 | | | 3,515 |
| Operating Time (hrs) | 825.76 | 1,194.23 | 1,328.49 | | | 3,348.48 |
| SO2 Mass (tons) | 0.4 | 0.6 | 0.7 | | | 1.7 |
| CO2 Mass (tons) | 82,866.0 | 116,333.6 | 130,712.7 | | | 329,912.3 |
| Heat Input (mmBtu) | 1,394,396 | 1,957,547 | 2,199,433 | | | 5,551,376 |
| NOx Emission Rate (lb/mmBtu) | 0.010 | 0.012 | 0.012 | | | 0.012 |



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|--|--|
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| State: | CA |
| Monitoring Locations: | 2 |
| Submission Type: | EM for 2014 QTR 4 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 01/06/2015 3:25:58 PM |
| Submitter User ID: | rsilva |
| Submission ID: | 823955 |
| Resubmission Required: | No |
| EPA Analyst: | Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov |

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

| | 1st Quarter | | 3rd Quarter | 4th Quarter | Ozone Season | Year-to-Date |
|---------------------------------|-------------|-----------|-------------|-------------|--------------|--------------|
| Number of Operating Hours | 851 | 1,259 | 1,405 | 1,923 | | 5,438 |
| Operating Time (hrs) | 825.76 | 1,194.23 | 1,328.49 | 1,905.48 | | 5,253.96 |
| SO2 Mass (tons) | 0.4 | 0.6 | 0.7 | 1.0 | | 2.7 |
| CO2 Mass (tons) | 82,866.0 | 116,333.6 | 130,712.7 | 192,721.2 | | 522,633.5 |
| Heat Input (mmBtu) | 1,394,396 | 1,957,547 | 2,199,433 | 3,242,907 | | 8,794,283 |
| NOx Emission Rate (lb/mmBtu) | 0.010 | 0.012 | 0.012 | 0.009 | | 0.011 |



January 7, 2015 08:09 AM

Re: Metcalf Energy Center (55393) - 1

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|--|--|
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| Submission Type: | EM for 2014 QTR 4 |
| Error Status Level: | No Errors |
| Submission Date/Time: | 01/07/2015 8:09:52 AM |
| Submitter User ID: | rsilva |
| Submission ID: | 824192 |
| Resubmission Required: | No |
| EPA Analyst: | Carlos R Martinez; (202) 343-9747; martinez.carlos@epa.gov |

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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: http://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.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: http://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: http://www.epa.gov/airmarkets/business/ecmps/reporting-instructions.html.

Facility ID (ORISPL): 55393 State: CA

January 7, 2015 08:09 AM

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

| | 1st Quarter | 2nd Quarter | 3rd Quarter | 4th Quarter | Ozone Season | Year-to-Date |
|---------------------------------|-------------|-------------|-------------|-------------|--------------|--------------|
| Number of Operating Hours | 884 | 1,426 | 1,616 | 1,980 | | 5,906 |
| Operating Time (hrs) | 859.33 | 1,339.90 | 1,513.08 | 1,965.64 | | 5,677.95 |
| SO2 Mass (tons) | 0.4 | 0.6 | 0.7 | 1.0 | | 2.7 |
| CO2 Mass (tons) | 85,931.3 | 127,833.2 | 145,336.1 | 195,018.8 | | 554,119.4 |
| Heat Input (mmBtu) | 1,445,985 | 2,151,028 | 2,445,539 | 3,281,580 | | 9,324,132 |
| NOx Emission Rate (lb/mmBtu) | 0.014 | 0.012 | 0.012 | 0.009 | | 0.011 |

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 | | | | | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:4 | | | |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual _ Waste Amount | Federal Hazard Categories | · · · · · · · · · · · · · · · · · · · | Hazardous Component (For mixture only) % Wt | |
| DOT: 2.2 - Nonflammable Gase Other Health Hazard | SULFUR HEXAFLUORIDE CAS No 2551-62-4 Map: 1 Grid: 4B | Gas (Type | 448 Storage Container Other Days on Site: 365 | 64 | 448 | Waste Code | - Pressure | | | |

| | Hazardou | 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 2/9/2015 3:40 | | | |
| OT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities | Avg. Daily | Annual _ Waste Amount | Federal Hazard Categories | Component Name | Hazardous Component (For mixture only) % Wt | EHS CAS No. |
| OOT: 8 - Corrosives (Liquids and Solids) | | Pounds State Si Liquid A Type | 27527.7 torage Container Noveground Tank Days on Site: 365 | 32382 | 27527.7 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Reactive - Pressure Release - Acute Health - Chronic health | Ammonia | 28 % | ✓ 7664-41-7 |

| | | Hazardo | ous Materials | And Waste | s Inventory | y Matrix | Report | | | |
|---------------------------------------|---|-----------------------------------|--|---------------|------------------------------|-----------------|--------------------------|--|-------------|------------------------|
| acility Name METCAL | F ENGERGY CENTER F ENERGY CENTER ARD RD, SAN JOSE 95013 | | | Chemical Loca | ation | RMERS | | CERS ID 100972 Facility ID 43-060 Status Submitte | 40954 | 5 /2015 3:40 PM |
| | | | | Quantities | | Annual Waste | Federal Hazard | Hazardous C (For mixtu | omponent | |
| OOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
| IOT: 9 - Misc. Hazardous Naterials | HYTRANS 61 CAS No | Gallons State Liquid | s 1956 Storage Container Other | 489 | 1956 Pressue < Ambient | Waste Code | - Fire - Acute Health | OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BHT) | 99 % 1 % | 64742-53-6 128-37-0 |
| | Map: 1 Grid: 5D, 3D, D1, 5E | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| OT: 2.2 - Nonflammable Gase | S NITROGEN, COMPRESSED | Cu. Fee | et 920 | 230 | 920 | | - Pressure | | | |
| | CAS No 7727-37-9 Map: 1 Grid: 2D, 3D, 5E, 5D | State Gas Type Pure | Storage Container Cylinder Days on Site: 365 | | Pressue Temperature | Waste Code | Release | | | |

| | | Hazardou | s Materials / | And Waste | s Inventory | / Matrix | Report | n de la companya de l | | |
|--|---|-----------------|-------------------------|--------------------------|------------------------|-----------------|----------------|--|---|--------------------|
| acility Name METCALF | ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013 | | | Chemical Loca BALANCE | | | | Facility ID 4 | 0097278 3-060-40954 ubmitted on 2/9 | - |
| | | | | Quantities | | Annual Waste | Federal Hazard | | ardous Component For mixture only) | s |
| OOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
| DOT: 8 - Corrosives (Liquids and Solids) | LEAD-ACID BATTERY | Gallons | 865 | 14.4 | 865 | | | LEAD, LEAD COMPONENT | rs 60 % | 7439-92-1 |
| | CAS No | | orage Container ther | | Pressue Ambient | Waste Cod | e | SULFURIC ACID | 30 % | √ 7664-93-9 |
| Corrosive | Map: 1 Grid: 2E | Type Pure Da | ays on Site: 365 | | Temperature Ambient | | | | | |

| | ų V | Hazardous | s Materials / | And Waste | s Inventory | Matrix | Report | | | |
|---------------------------------------|--|-------------------------------|--------------------------------|-----------------------------|---------------------------|---------------------------|------------------------------|---------------------------------|---|------------------|
| acility Name METCA | LF ENGERGY CENTER LF ENERGY CENTER HARD RD, SAN JOSE 95013 | | | Chemical Loca BOILER FE | tion ED PUMPS | | | CERS ID Facility I Status | 10097278 D 43-060-409545 Submitted on 2/9, | |
| OOT Code/Fire Haz. Class | Соттол Name | - Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Component Name | Hazardous Component (For mixture only) % Wt | S EHS CAS No. |
| DOT: 9 - Misc. Hazardous Materials | LUBRICATING OIL CAS NO | Gallons State Sto | 520 prage Container ther | 130 | 520 Pressue Ambient | Waste Cod | - Fire | component Name | 70 WL | ERS (43 NO. |
| | Map: 1 Grid: 2H, 3H | ^{Type} Mixture Da | ays on Site: 365 | | Temperature Ambient | | | | | |

| | ,M A | Hazardo | us Materials / | And Waste | s Inventory | / Matrix | Report | | | |
|--|---|----------------|---|-----------------------------|---|---------------------------|---|---|--|------------------------|
| acility Name METCALF | ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013 | | | Chemical Loca Boiler Wa | ^{ition} ter Chemica | al Treatm | ent Area | Facility ID | 10097278 13-060-409545 Submitted on 2/9/ | |
| DOT Code/Fire Haz. Class | Сотпол Name | Unit | Məx. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Haz | zardous Component: (For mixture only) % Wt | |
| DOT: 8 - Corrosives (Liquids and Solids) Corrosive | CHEMTREAT BL-152 CAS No Map: 1 Grid: 2G | Liquid Type | 800 Storage Container Tote Bin Days on Site: 365 | 400 | 680 Pressue Ambient Temperature Ambient | Waste Code | - Acute Health | AMMONIUM HYDROXID | | 1336-21-6 141-43-5 |
| DOT: 8 - Corrosives (Liquids and Golids) Corrosive | CHEMTREAT BL1795 CAS No Map: 1 Grid: 2G | | 400 Storage Container Tote Bin | 400 | 340 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Reactive e - Pressure Release - Acute Health | SODIUM HYDROXIDE TRISODIUM PHOSPHATE | | 1310-73-2 7601-54-9 |

| | | Hazardous | s Materials A | And Waste | s Inventory | Matrix | Report | | | |
|----------------------------------|--|-----------------|-------------------------|---------------|------------------------|-----------------|----------------|---------------------|--|--------------------|
| acility Name METCALF | ENGERGY CENTER ENERGY CENTER RD RD, SAN JOSE 95013 | | | Chemical Loca | tion | NE #1 | - | Facility ID | L0097278 I3-060-40954 Submitted on 2/9 | - |
| | | - | | Quantities | | Annual Waste | Federal Hazard | | ardous Component For mixture only) | s |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
| DOT: 8 - Corrosives (Liquids and | LEAD-ACID BATTERY | Gallons | 324 | 2.7 | 324 | | | LEAD, LEAD COMPONEN | TS 60 % | 7439-92-1 |
| iolids) | CAS No | | orage Container ther | | Pressue Ambient | Waste Cod | e | SULFURIC ACID | 30 % | √ 7664-93-9 |
| Corrosive | Map: 1 Grid: 4E | Type Pure Da | ays on Site: 365 | | Temperature Ambient | | | | | |

| | 1 1 | Hazardou | s Materials A | And Waste | s Inventory | / Matrix | Report | | | |
|--|--|---------------------|--------------------------------|-----------------------------|---------------------------|---------------------|----------------|---|--|---|
| acility Name METCALF | ENGERGY CENTER ENERGY CENTER RD RD, SAN JOSE 95013 | | | Chemical Loca | tion FION TURBI | NE #2 | | Facility ID | 10097278 43-060-40954 Submitted on 2/9 | |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste | Federal Hazard | | lazardous Component (For mixture only) | |
| DOT: 8 - Corrosives (Liquids and Solids) | | Gallons State St | 324 orage Container ther | 2.7 | 324 Pressue Ambient | Amount Waste Cod | Categories | Component Name LEAD, LEAD COMPONE SULFURIC ACID | % Wt ENTS 60 % 30 % | EHS CAS No. 7439-92-1 ✓ 7664-93-9 |
| orrosive | Map: 1 Grid: 2E | Type Pure Di | ays on Site: 365 | | Temperature Ambient | | | | | |

| | | A | Hazardou | s Materials / | And Wastes | s Inventory | Matrix | Report | | | |
|----------------------|----------|-------------------------|--------------------|-------------------------|---------------|----------------------------|-----------------|----------------|----------------|---|---------------|
| ERS Business/Org. | METCA | LF ENGERGY CENTER | | | Chemical Loca | tion | | | CERS ID | 10097278 | |
| acility Name | METCA | LF ENERGY CENTER | | | Combusti | on Turbin <mark>e</mark> l | ube Oil | | Facility R | 43-060-40954 | 5 |
| | 1 BLANCH | IARD RD, SAN JOSE 95013 | | | | | | | Status | Submitted on 2/9 | /2015 3:40 PM |
| | | | | | Quantities | | Annual Waste | Federal Hazard | | Hazardous Component (For mixture only) | s |
| OOT Code/Fire Haz. C | lass | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
| OOT: 3 - Flammable | | 76 TURBINE OIL 68 | Gallons | 7200 | 3600 | 7200 | | - Fire | | | |
| Combustible Liquid | S | CAS No | | orage Container ther | | Pressue Ambient | Waste Code | 2 | | | |
| | | Map: 1 Grid: 2E, 4E | Type Mixture D; | ays on Site: 365 | | Temperature Ambient | | | | | |

| | k ♦ | Hazardous | s Materials / | And Waste | s Inventory | Matrix | Report | n de ser | | |
|---------------------------------------|---|------------------|--|-----------------------------|---|---------------------------|------------------------------|---------------------------------|---|-------------|
| acility Name METC | ALF ENGERGY CENTER ALF ENERGY CENTER CHARD RD, SAN JOSE 95013 | | | Chemical Loca Connex N | ition ear Storm W | Vater Poi | nd | CERS ID Facility I Status | 10097278 D 43-060-40954 Submitted on 2/9, | - |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Component Name | Hazardous Component (For mixture only) % Wt | EHS CAS No. |
| OOT: 9 - Misc. Hazardous Materials | Sodium Carbonate CAS NJ 497-19-8 Map: 1 Grid: 6K | Solid Ba Type | 300 orage Container ag ays on Site: 365 | 50 | 300 Pressue Ambient Temperature Ambient | Waste Cod | - Acute Health | | | |

| | ¥ | Hazardo | ous Materials A | And Waste | s Inventory | / Matrix I | Report | | | |
|--|---|---|--|-------------------------------------|--|---|---|--|-------------|--|
| acility Name ME | TCALF ENGERGY CENTER TCALF ENERGY CENTER ANCHARD RD, SAN JOSE 95013 | | | Chemical Loca | ^{ition} D wer Chemi | cal Treatn | nent Area | CERS ID 1009727 Facility ID 43-060-4 Status Submitted | 409545 | 5 /2015 3:40 PM |
| OT Code/Fire Haz. Class OT: 9 - Misc. Hazardou Aaterials | Common Name CHEIMTREAT CL240 CAS No NA Map: 1 Grid: 5D | Unit Gallons State Liquid Type Mixture | Max. Daily 5 1500 Storage Container Aboveground Tank Days on Site: 365 | Quantities Largest Cont. 1500 | Avg. Daily 1350 Pressue Ambient Temperature Ambient | Annual Waste Amount Waste Code | Release - Acute Health | Hazardous Co (For mixtur Component Name | | S EHS CAS No. |
| DOT: 9 - Misc. Hazardou Naterials | CHEIMTREAT CL4500 CAS No Map: 1 Grid: 5D | Gallons State Liquid Type Mixture | s 1500 Storage Container Aboveground Tank Days on Site: 365 | 1500 | 750 Pressue Ambient Temperature Ambient | Waste Code | - Chronic health - Acute Health | | | |
| OT: 8 - Corrosives (Liqu olids) orrosive | uids and SODIUM HYPOCHLORITE 12.5% CAS No Map: 1 Grid: 5D | Gallons State Liquid Type Mixture | 5 8000 Storage Container Aboveground Tank Days on Site: 365 | 8000 | 6800 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Reactive - Pressure Release - Acute Health - Chronic health | SODIUM HYDROXIDE SODIUM HYPOCHLORITE >12.5%- 15% SODIUM CHLORIDE WATER | 1 % 13 % | 1310-73-2 7681-52-9 7647-14-5 7732-18-5 |
| OT: 8 - Corrosives (Liqu olids) orrosive, Water Reactiv | CAS No VEHS | Pounds State Liquid Type Pure | 42762.8 Storage Container Aboveground Tank Days on Site: 365 | 85526 | 42762.8 Pressue Ambient Temperature Ambient | Waste Code | - Reactive - Acute Health | <u></u> | | <u></u> |

| | , N | Hazardous | s Materials A | And Waste | s Inventory | Matrix | Report | | | |
|---|--|--|--|----------------------|---|----------------------|--|---------------------------------|--|-------------|
| acility Name METCA | LF ENGERGY CENTER LF ENERGY CENTER HARD RD, SAN JOSE 95013 | | | Chemical Loca | tion OL OIL TAN | K | | CERS ID Facility I Status | 10097278 D 43-060-40954 Submitted on 2/9 | _ |
| OOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities | Avg. Daily | Annual Waste | Federal Hazard | | Hazardous Componen (For mixture only) | |
| DOT: 3 - Flammable and Combustible Liquids | MOBIL DTE 26 CAS No Map: 1 Grid: 2F, 3F | Gallons State Str Liquid Of Type | Wax, Daily 200 prage Container ther ays on Site: 365 | Largest Cont. 100 | 200 Pressue Ambient Temperature Ambient | Amount Waste Code | Categories - Fire - Acute Health | Component Name | <u>% Wt</u> | EHS CAS No. |

| | 1 1 | Hazardous Material | s And Waste | s Inventor | / Matrix I | Report | B B | | |
|---------------------------------|--|--|---------------------------|--|-----------------|---|---------------------------------------|--|------------------------------------|
| acility Name ME | TCALF ENGERGY CENTER TCALF ENERGY CENTER ANCHARD RD, SAN JOSE 95013 | | Chemical Loca CYLINDER | ation R GAS STOR/ | AGE | | | 10097278 43-060-40954 Submitted on 2/9 | |
| | | | Quantities | | Annual Waste | Federal Hazard | | Hazardous Component (For mixture only) | s |
| OT Code/Fire Haz. Class | Common Name | Unit Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
|)OT: 2.2 - Nonflammabl)ther | CAS No 7440-37-1 | Cu. Feet 672 State Storage Container Gas Cylinder | 336 | 672 Pressue | Waste Code | - Pressure Release | | | |
| | Map: 1 Grid: H3 | Type Pure Days on Site: 36 | 5 | Temperature | | | | | |
| OOT: 2.2 - Nonflammabl | e Gases CALIBRATION GAS (NITRO) CARBON MONOXIDE) CAS No Map: 1 Grid: 3H | iEN, Cu. Feet 290 State Storage Container Gas Cylinder Type Mixture Days on Site: 36 | | 290 Pressue < Ambient Temperature Ambient | Waste Code | - Fire - Reactive - Pressure Release - Acute Health - Chronic health | NITROGEN OXYGEN CARBON MONOXIDE | 83 % 12 % 5 % | 7727-37-9 7782-44-7 124-38-9 |
| 00T: 2.2 - Nonflammabl | e Gases HELIUM CAS No 7440-59-7 Map: 1 Grid: 3H | Cu. Feet 292 State Storage Container Gas Cylinder Type Pure | 292 | 292 Pressue Temperature | Waste Code | - Fire | <u> </u> | | |
| DOT: 2.2 - Nonflammabl | e Gases NITROGEN CAS No 7727-37-9 Map: 1 Grid: 3H | Cu. Feet 1610 State Storage Container Gas Cylinder Type Pure Days on Site: 36 | | 1610 Pressue < Ambient Temperature Ambient | Waste Code | - Fire | · | | |
| OT: 2.2 - Nonflammabl | e Gases NITROGEN / NITRIC OXIDE CALIBRATION GAS CAS No Map: 1 Grid: 3H | Cu. Feet 1450 State Storage Container Gas Cylinder Type Mixture Days on Site: 36 | | 870 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release | NITRIC OXIDE NITROGEN | 0 % 99 % | ✓ 10102-43-9 7727-37-9 |
| OT: 2.2 - Nonflammabl | CALIBRATION GAS | Cu. Feet 435 State Storage Container Gas Cylinder Type | | 435 Pressue Ambient Temperature | Waste Code | - Pressure Release - Acute Health | | | |
| OT. 2.2 Novên | Map: 1 Grid: 3H | Days on Site: 36 | | Ambient | | P1 | · · · · · | | |
| OT: 2.2 - Nonflammabl | e Gases OXYGEN CAS No 7782-44-7 Map: 1 Grid: 3H | Cu. Feet 3653 State Storage Container Gas Cylinder Type Pure Pure Days on Site: 36 | | 3653 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Pressure Release | | | |

| | | | Hazardous | s Materials / | And Waste | s Inventory | / Matrix | Report | | | |
|-----------------------------------|-----------|---|----------------------|---|-----------------------------|-----------------------------------|----------------------|--|--|--|---------------------------------------|
| acility Name | METCALF I | ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013 | | | Chemical Loca DIESEL FIF | tion RE PUMP HC | DUSE | | CERS ID Facility II Status | 10097278 43-060-40954 Submitted on 2/9 | |
|)OT Code/Fire Haz. Cla | 65 | Common Name | Unit - | May Daily | Quantities | | Annual Waste | Federal Hazard | | Hazardous Componen (For mixture only) | |
| DOT: 8 - Corrosives (I Solids) | | LEAD-ACID BATTERY CAS No | Gallons State Sto | Max. Daily 12 prage Container ther | Largest Cont. 6 | Avg. Daily 12 Pressue | Amount Waste Code | Categories - Acute Health - Chronic health | Component Name Sulfuric Acid Lead, Lead Componen | % Wt 40 % | EHS CAS No. 7664-93-9 7439-92-1 |
| Corrosive | | Map: 1 Grid: 5I | Түре | ays on Site: 365 | | Ambient Temperature Ambient | 792 | | | | 7433-32-1 |

| | | | | | | | | t, | | | | |
|-------------------------------|------------------------|-----------------|-------------------|---------------|------------------------|-----------------|----------------|-------------------------|------------------------------|----------------|--|--|
| CERS Business/Org. METCAI | LF ENGERGY CENTER | | | Chemical Loca | ation | | | CERS ID 10097278 | | | | |
| Facility Name METCA | LF ENERGY CENTER | | | Fire Pump | o House | | | Facility ID 43-0 | 60-40954 | 5 | | |
| 1 BLANCH | ARD RD, SAN JOSE 95013 | | | | | | | Status Subr | itted on 2/9 |)/2015 3:40 PM | | |
| | | | | Quantities | | Annual Waste | Federal Hazard | | us Componen nixture only) | ts | | |
| OOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. | | |
| DOT: 3 - Flammable and | DIESEL | Gallons | 572 | 572 | 550 | | - Fire | FUELS, DIESEL, NO. 2 | 100 % | , | | |
| Combustible Liquids | CAS No | | Storage Container | | Pressue | Waste Code | - Acute Health | GAS OIL, LIGHT | 0% | C 4741 44 7 | | |
| Combustible Liquid, Class II, | 68334-30-5 | Liquid | Aboveground Tank | | Ambient | | | HYDRODESULFURIZED MIDDI | | 64741-44-2 | | |
| rritant | Map: 1 Grid: 5I | Түре Mixture | Days on Site: 365 | | Temperature Ambient | 331 | | DISTILLATE | .E 0% | 64742-80-9 | | |

| | | Hazardous | s Materials | And Waste | s Inventory | Matrix | Report | | | | |
|--------------------------|--|---|-------------------------|---------------|------------------------|-----------------|----------------|---------------------------------|---|-------------|--|
| acility Name METC/ | ALF ENGERGY CENTER ALF ENERGY CENTER HARD RD, SAN JOSE 95013 | Chemical Location FUEL GAS COMPRESSORS | | | | | | CERS ID Facility I Status | 10097278 P 43-060-409545 Submitted on 2/9/2015 3:40 P | | |
| | | | | Quantities | | Annual Waste | Federal Hazard | | Hazardous Componen (For mixture only) | ts | |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. | |
| DOT: 9 - Misc. Hazardous | LUBRICATING OIL | Gallons | 135 | 45 | 135 | | - Fire | | | | |
| Materials | CAS No | | orage Container ther | | Pressue Ambient | Waste Cod | e | | | | |
| | Map: 1 Grid: 5J, 6J | Type Mixture Da | ays on Site: 365 | | Temperature Ambient | | | | | | |

| | | Hazardous | Materials | And Waste | s Inventory | / Matrix | Report | | | | | |
|---|--|---------------------------------------|----------------------------------|-----------------------------|-------------------------------|---------------------------|------------------------------|---|------|------------------------|--|--|
| acility Name METCA | LF ENGERGY CENTER LF ENERGY CENTER HARD RD, SAN JOSE 95013 | Chemical Location GSU Transformers | | | | | | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 | | | | |
| OOT Code/Fire Haz. Class | Common Name | Unit - | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Hazardous ((For mixt Component Name | • | EHS CAS No. | | |
| DOT: 3 - Flammable and Combustible Liquids | HYTRANS 61 CAS No | Gailons State Sto | 47883 prage Container ther | 18345 | 47883 Pressue < Ambient | Waste Cod | - Fire - Acute Health | OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BHT) | 99 % | 64742-53-6 128-37-0 | | |
| | Map: 1 Grid: 2D, 3D, 4E | Type Mixture Da | ays on Site: 365 | | Temperature Ambient | | | | | | | |

| | | Hazardo | ous Materials | | | | | | | |
|--|--|--|--|----------------------------------|---|---------------------------|---|-------------------------------|--|--------|
| acility Name M | AETCALF ENGERGY CENTER AETCALF ENERGY CENTER BLANCHARD RD, SAN JOSE 95013 | | | Chemical Loca Hazardou | ation I S Material S | itorage Ar | ea | CERS ID Facility Status | 10097278 D 43-060-409545 Submitted on 2/9/2015 3 | :40 PM |
| OOT Code/Fire Haz. Class | s Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Component Name | Hazardous Components (For mixture only) % Wt EHS C | |
| DOT: 4.1 - Flammable i | Solids DEBRIS/RAGS CONTAMINAT WITH PETROLEUM/OIL CAS No Map: 1 Grid: 5G, 5H | | storage Container Steel Drum Days on Site: 365 | 55 | 25 Pressue Ambient Temperature Ambient | 500 Waste Code 352 | - Fire | | | |
| OOT: 3 - Flammable ar Combustible Liquids Combustible Liquid, Cl | nd USED OIL CAS No NA | Gallons State Liquid Type Waste | storage Container Tote Bin Days on Site: 365 | 400 | 200 Pressue Ambient Temperature Ambient | 660 Waste Code 221 | - Fire - Acute Health | | | |
| DOT: 4.1 - Flammable : | Solids USED OIL FILTERS CAS NU Map: 1 Grid: 5G, 5H | | storage Container Steel Drum Days on Site: 365 | 100 | 25 Pressue Ambient Temperature Ambient | 200 Waste Code | - Fire - Reactive - Pressure Release - Acute Health - Chronic health | | | |

| | Į. | | Hazardo | us Materials / | And Waste | s Inventory | / Matrix I | Report | | | |
|--|---|-------------------------|----------------------------|--|-----------------------------|-----------------------------------|-----------------|------------------|--------------------|--|---------------|
| ERS Business/Org. acility Name | METCALF ENGERG METCALF ENERGY 1 BLANCHARD RD, SAN | CENTER | | | Chemical Loca Lube Oil S | | | | Status | 10097278 43-060-40954 Submitted on 2/9 | /2015 3:40 PM |
| | | | | | Quantities | | Annual Waste | Federal Hazard | | lazardous Component (For mixture only) | s |
| OT Code/Fire Haz. (| | | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
| OT: 3 - Flammabl Combustible Liquid | 70100 | BINE OIL 68 | | 220 Storage Container Steel Drum | 55 | 220 Pressue Ambient | Waste Code | | | | |
| | Map: 1 | Grid: 5H | Туре | Days on Site: 365 | | Ambient Temperature Ambient | | | | | |
| OOT: 3 - Flammabl | e and Megafle | ow AW HVI Hydraulic Oil | Gallons | 55 | 55 | 55 | | - Fire | | | |
| Combustible Liquid | is CAS No | | | Storage Container Steel Drum | | Pressue Ambient | Waste Code | | | | |
| | Map: 1 | Grid: 5H | Туре Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| DOT: 3 - Flammabl | IVIIJULL | LANEOUS LUBE OIL | Gallons | 90 | 5 | 90 | | - Fire | | | |
| Combustible Liquid | is CAS No | | | Storage Container Carboy | | Pressue Ambient | Waste Code | - Acute Health | | | |
| | Map: 1 | Grid: 5H | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| OT: 3 - Flammabl | INCOL | DTE 26 | Gallons | 110 | 55 | 110 | | - Fire | u | | |
| Combustible Liquid | is CAS No | | | Storage Container Steel Drum | | Pressue Ambient | Waste Code | - Acute Health | | | |
| | Map: 1 | Grid: 5H | Type Pure | Days on Site: 365 | | Temperature Ambient | | | | | |
| OT: 3 - Flammabl | | URPOSE R+O OIL 220 | Gallons | 165 | 55 | 165 | | - Fire | LUBRICANT BASE OIL | 99 % | |
| Combustible Liquid | is CAS No | | | Storage Container Steel Drum | | Pressue Ambient | Waste Code | - Acute Health | ADDITIVES | 1% | |
| | Map: 1 | Grid: SH | _{Type} Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| OT: 3 - Flammabl | neicase | Number 1 VOC | Gallons | 55 | 55 | 55 | | - Fire | | | |
| ombustible Liquid | is CAS No | | | Storage Container Steel Drum | | Pressue Ambient | Waste Code | | | | |
| | Map: 1 | Grid: 5H | _{Type} Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| OT: 3 - Flammabl | | ELLUS OIL | Gallons | 110 | 55 | 110 | | - Fire | — · · | | |
| ombustible Liquic | is CAS No | | | Storage Container Steel Drum | | Pressue Ambient | Waste Code | - Chronic health | | | |
| | Map: 1 | Grid: 5H | Type Pure | Days on Site: 365 | | Temperature Ambient | | | | | |

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| |)) | Hazardou | s Materials | And Waste | s Inventory | y Matrix I | Report | | |
|---|---|---|---|-----------------------------|---|-----------------------------|------------------------------|---------------------------------|--|
| Facility Name | METCALF ENGERGY CENTER METCALF ENERGY CENTER 1 BLANCHARD RD, SAN JOSE 95013 | | | Chemical Loca Lube Oil S | | | | CERS ID Facility J Status | 10097278 D 43-060-409545 Submitted on 2/9/2015 3:40 PM |
| OT Code/Fire Haz. Cl | ass Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual _ Waste Amount | Federal Hazard Categories | Component Name | Hazardous Components (For mixture only) % Wt EHS CAS No. |
| DOT: 3 - Flammable Combustible Liquids | and Shell Turbo Oil DR 46 | Gallons State S Liquid S Type | 55 torage Container iteel Drum Days on Site: 365 | 55 | 55 Pressue Ambient Temperature Ambient | Waste Code | - Fire | component wante | 78 WL EN3 CAS NO. |
| DOT: 3 - Flammable Combustible Liquid | TORDOTOLSZ | Gallons State S Liquid S Type | 330 torage Container teel Drum Days on Site: 365 | 55 | 330 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Acute Health | | |
| DOT: 3 - Flammable Combustible Liquids | Vapiotec Light | Liquid S Type | 55 torage Container teel Drum Days on Site: 365 | 55 | 55 Pressue Ambient Temperature Ambient | Waste Code | - Fire | | |

| | 4 | Hazardo | us Materials A | And Waste | s Inventory | / Matrix I | Report | | | |
|--|--|---|--|--------------------------------------|--|----------------------|---|----------------|--|-------------|
| acility Name METC | ALF ENGERGY CENTER ALF ENERGY CENTER CHARD RD, SAN JOSE 95013 | | | Chemical Loca MAINTEN | ANCE SHOP | | | | 10097278 D 43-060-409545 Submitted on 2/9/ | |
| OT Code/Fire Haz. Class | Соттол Name | Unit | Max. Daily | Quantities | àus Dailu | Annual Waste | Federal Hazard | | Hazardous Components (For mixture only) | |
| IOT: 3 - Flammable and ombustible Liquids lammable Liquid, Class I-B | *MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB CAS NJ | Gallons State | 65 Storage Container Can, Glass Bottle or Bottle or Jug | Largest Cont. 1 r Jug, Plastic | Avg. Daily 65 Pressue Ambient Temperature | Amount Waste Code | - Fire | Component Name | % Wt | EHS CAS No. |
| OT: 2.1 - Flammable Gase Instable (Reactive), Class 2 Iammable Gas | ACTICENE | Cu. Fee State Gas Type | Storage Container Cylinder | 185 | Ambient 185 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Reactive - Pressure Release | | | |
| OT: 2.2 - Nonflammable G | iases ARGON / CARBON DIOXIDE / HELIUM CAS No Map: 1. Grid: 3J | Gas Type | Days on Site: 365 t 215 Storage Container Cylinder Days on Site: 365 | 215 | 215 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release - Acute Health | | | |
| 0OT: 2.2 - Nonflammable G Other | | Cu. Fee State Gas Type Pure | t 336 Storage Container Cylinder Days on Site: 365 | 336 | 336 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release | | <u>.</u> | |
| DOT: 2.2 - Nonflammable G | iases CARBON DIOXIDE CAS No 124-38-9 Map: 1 Grid: 3J | | | 376 | 376 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release - Acute Health - Chronic health | | | |
| DOT: 2.2 - Nonflammable G Dxidizing, Class 2 | CAS No 7782-44-7 Map: 1 Grid: 3J | Cu. Fee State Gas Type Pure | | 281 | 281 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Pressure Release | | | |

| TCALF ENGERGY CENTER | | | | | | | | | | |
|--|--|--|--|---|--|---|--|---|---|--|
| | | | Chemical Loca PROPANE | | | | CERS ID Facility I Status | | | |
| | · | | Quantities | | Annual Waste | Federal Hazard | | Hazardous Components (For mixture only) | ; | |
| Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. | |
| *MISCELLANEOUS FLAMMABLE | Gallons | 55 | 1 | 55 | | - Fire | | | | |
| LIQUID. CLASS IB | State | Storage Container | | Pressue | | | | | | |
| | Liquid Type | Can, Plastic Bottle | le or Jug | Ambient Temperature | | le | | | | |
| Map: 1 Grid: 3H | Pure | Days on Site: 365 | | Ambient | | | | | | |
| ases PROPANE | Gallons | 60 | 10 | 60 | | - Fire | | • • • • • | | |
| I-A CAS No 74-98-6 Map: 1 Grid: 3H | State Gas Type | Storage Container Cylinder | | Pressue < Ambient Temperature | Waste Code | Release - Acute Health | | | | |
| | *MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB I-B CAS No Map: 1 Grid: 3H ases PROPANE I-A CAS No 74-98-6 | ANCHARD RD, SAN JOSE 95013 Common Name Unit *MISCELLANEOUS FLAMMABLE Gallons LIQUID, CLASS IB State I-B CAS No Type Map: 1 Grid: 3H Pure ases PROPANE Gallons I-A CAS No State | ANCHARD RD, SAN JOSE 95013 Common Name Unit Max. Daily *MISCELLANEOUS FLAMMABLE Gallons 55 LIQUID, CLASS IB State Storage Container I-B CAS No Type Map: 1 Grid: 3H Pure Days on Site: 365 ases PROPANE Gallons 60 I-A CAS No State Storage Container Type Pure Days on Site: 365 Gallons 60 I-A CAS No State Storage Container Gallons 60 I-A CAS No State Storage Container Gallons 60 I-A Type Gallons F Gallons 60 | ANCHARD RD, SAN JOSE 95013 Quantities Common Name Unit Max. Daily Largest Cont. *MISCELLANEOUS FLAMMABLE Gallons 55 1 LIQUID, CLASS IB State Storage Container Liquid I-B CAS No Type Map: 1 Grid: 3H Pure Days on Site: 365 I-A CAS No State Storage Container I-A Type Days on Site: 365 10 | ANCHARD RD, SAN JOSE 95013 Common Name Unit Max. Daily Largest Cont. Avg. Daily *MISCELLANEOUS FLAMMABLE Gallons 55 1 55 LIQUID, CLASS IB State Storage Container Pressue I-B CAS No Type Temperature Map: 1 Grid: 3H Pure Days on Site: 365 Ambient ases PROPANE Gallons 60 10 60 I-A CAS No State Storage Container Pressue Map: 1 Grid: 3H Type Temperature Maps: 1 Grid: 3H Type Ambient T4-98-6 Gas Cylinder Ambient Map: 1 Grid: 3H Type Temperature | ANCHARD RD, SAN JOSE 95013 Common Name Unit Max. Daily Largest Cont. Avg. Daily Annual Waste *MISCELLANEOUS FLAMMABLE Gallons 55 1 55 LIQUID, CLASS IB State Storage Container Pressue Ambient I-B CAS No Type Temperature Ambient Map: 1 Grid: 3H Pure Days on Site: 365 10 60 I-A CAS No State Storage Container Pressue Mabient Type Temperature Ambient Mabient Waste Code Type Temperature Ambient Mabient Mabient Type Temperature Ambient Mabient Mabient Type Temperature Ambient Mabient Mabient Type Type Temperature Ambient Mabient Type Temperature Ambient Mabient Mabient Asses PROPANE Gallons 60 10 60 I-A CAS No State Storage Container Pressue Waste Code Map: 1 Grid: 3H Type Temperature Yaste Code | ANCHARD RD, SAN JOSE 95013 Common Name Unit Quantities Annual Waste Federal Hazard Categories *MISCELLANEOUS FLAMMABLE LIQUID, CLASS IB Gallons 55 1 55 - Fire LIQUID, CLASS IB State Storage Container Pressue Ambient Waste Code I-B CAS No Type Temperature Ambient Waste Code Map: 1 Grid: 3H Pure Days on Site: 365 Ambient Waste Code I-A CAS No State Storage Container Pressue Ambient App: 1 Grid: 3H Pure Days on Site: 365 Ambient Pressue I-A CAS No State Storage Container Pressue Pressue I-A Grid: 3H Type Temperature Ambient - Fire | ANCHARD RD, SAN JOSE 95013 ANCHARD RD, SAN JOSE 95013 | ANCHARD RD, SAN JOSE 95013 AncharD RD, SAN JOSE 95013 Status Submitted on 2/9/ Annual Quantities Annual Waste Federal Hazard Components Gallons Status Submitted on 2/9/ Waste Federal Hazard Components Gallons Status Submitted on 2/9/ Mappin Display Mappin Display <th c<="" td=""></th> | |

| | i | Hazardous | Materials | And Waste | s inventory | Matrix | Report | | | | | | |
|---------------------------------------|--|-----------------------------|--|-----------------------------|------------------------------|----------------------|---|--|-------------------------|---------------------------------------|--|--|--|
| acility Name METCA | ALF ENGERGY CENTER ALF ENERGY CENTER HARD RD, SAN JOSE 95013 | | Chemical Location CERS ID 1.0097278 STATION SERVICE TRANSFORMERS Facility ID 43-060-40950 Status Submitted on 2/ | | | | | | | | | | |
| OT Code/Fire Haz. Class | Common Name | - Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste | Federal Hazard | (For mi | Componer (ture only) | | | | |
| DOT: 9 - Misc. Hazardous Materials | HYTRANS 61 CAS No | Gallons State Sto | 7038 prage Container ther | 3519 | 7038 Pressue < Ambient | Amount Waste Code | Categories - Fire - Acute Health e | Component Name OIL, HYDRO LIGHT NAPH DIST 2, 6-DI-T-BUTYL-P-CRESOL (BH | % Wt 99 % T) 1 % | EHS CAS No. 64742-53-6 128-37-0 | | | |
| | Map: 1 Grid: 2D, 3D | Type Mixture Da | ays on Site: 365 | | Temperature Ambient | | | | | | | | |

| | | | Hazardous | s Materials | And Waste | | | | | | |
|-----------------------------------|------|---------------------------------|----------------------|--------------------------------|------------|---|----------------------|---------------------------|--|--|-------------|
| ERS Business/Org. acility Name | | | | | | emical Location EAM TURBINE CONTROL OIL TANK | | | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 | | |
|)OT Code/Fire Haz. C | Nass | Common Name | Unit | Max. Daily | Quantities | Avg. Daily | Annual Waste | Federal Hazard | | Hazardous Componen (For mixture only) | |
| DOT: 9 - Misc. Haza Materials | | Sheli Turbo Oil DR 46 CAS No | Gallons State Sta | 200 orage Container ther | 200 | 200 Pressue Ambient | Amount Waste Code | Categories - Fire e | Component Name | % Wt | EHS CAS No. |
| | | Map: 1 Grid: 4F | Type Mixture Da | ays on Site: 365 | | Temperature Ambient | | | | | |

| | | Hazardo | ous Materials | And Waste | s Inventory | Matrix | Report | | | |
|---|---|--|---|-----------------------------|---|---------------------------|------------------------------|-------------------------------|---|------------------|
| acility Name 🛛 🕅 | IETCALF ENGERGY CENTER IETCALF ENERGY CENTER BLANCHARD RD, SAN JOSE 95013 | | | Chemical Loca Steam Tu | ^{tion} r bine Flamm | nable Loci | ker | CERS ID Facility Status | 10097278 D 43-060-40954 Submitted on 2/9 | - |
| OOT Code/Fire Haz. Class | s Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Component Name | Hazardous Component (For mixture only) % Wt | s EHS CAS No. |
| DOT: 3 - Flammable ar Combustible Liquids Flammable Liquid, Cla | LIQUID, CLASS IB | Gallons State Liquid Type Pure | s 210 Storage Container Can, Glass Bottle o Bottle or Jug Days on Site: 365 | 1 or Jug, Plastic | 210 Pressue Ambient Temperature Ambient | Waste Code | | | | |
| DOT: 3 - Flammable ar Combustible Liquids Flammable Liquid, Cla Dther Health Hazard, 1 | CAS No ss I-B, 8006-61-9 | Gallons State Liquid Type Pure | 5 70 Storage Container Can Days on Site: 365 | 5 | 70 Pressue Ambient Temperature Ambient | Waste Code | - Fire - Chronic health | | | |

| |) | Hazardou | s Materials / | And Waste | s Inventory | [,] Matrix | Report | | | |
|---|--|----------------------------|---------------------------------|-----------------------------|----------------------------|---------------------------|------------------------------|--|---|----------------------|
| acility Name METCA | ALF ENGERGY CENTER ALF ENERGY CENTER HARD RD, SAN JOSE 95013 | | | Chemical Loca STEAM TU | ition JRBINE PACI | KAGE | | Facility ID 4 | .0097278 3-060-40954 ubmitted on 2/9 | |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | | ardous Component For mixture only} % Wt | S EHS CAS No. |
| DOT: 3 - Flammable and Combustible Liquids | REOLUBE TURBOFLUID 46B | Gallons State St | 6850 orage Container ther | 6650 | 6850 Pressue Ambient | Waste Code | - Fire - Acute Health | TERT-BUTYLATED TRIPHE PHOSPHATES TRIPHENY' PHOSPHATE | | 68937406 115-86-6 |
| Other | Map: 1 Grid: 4G | Type Mixture D | ays on Site: 365 | | Temperature Ambient | | | | | |

| | A. | Hazardou | s Materials / | And Waste | s Inventory | / Matrix | Report | | | |
|--|---|------------------|------------------------------|---------------------------|------------------------|-----------------|----------------|--------------------|--|-------------|
| acility Name METCAL | F ENGERGY CENTER F ENERGY CENTER ARD RD, SAN JOSE 95013 | | | Chemical Loca SWITCH Y | | | | CERS ID | 10097278 43-060-40954 Submitted on 2/9 | - |
| _ | | | | Quantities | | Annual Waste | Federal Hazard | | lazardous Componen (For mixture only) | ts |
| OOT Code/Fire Haz. Class | Common Name | Ųnit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
| 00T: 8 - Corrosives (Liquids an folids) | d FLOODED LEAD-CALCIUM BATTERY | | 9 torage Container | 0.6 | 9 Pressue | | | LEAD, LEAD COMPONE | | 7439-92-1 |
| orrosive | CAS No | Liquid O Type | other | | Ambient Temperature | Waste Cod | e | SULFURIC ACID | 8 % | ✓ 7664-93-9 |
| | Map: 1 Grid: 4B | Pure D | ays on Site: 365 | | Ambient | | | | | |

| | | Hazardo | us Materials / | And Waste | s Inventory | / Matrix | Report | e frank | | |
|------------------------------|--|----------------------|---|-----------------------------|---|--|---|---------------------------------------|--|------------------------------------|
| acility Name METCAL | ENGERGY CENTER ENERGY CENTER RD RD, SAN JOSE 95013 | | | Chemical Loca UNIT 1 CE | | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 PN | | | | |
| OT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual _ Waste Amount | Federal Hazard Categories | Component Name | Hazardous Components (For mixture only) % Wt | |
| OT: 2.2 - Nonflammable Gases | NITROGEN / NITRIC OXIDE CALIBRATION GAS CAS No Map: 1 Grid: 4H | Gas Type | t 870 Storage Container Cylinder Days on Site: 365 | 145 | 435 Pressue Ambient Temperature Ambient | Waste Code | - Pressure | NITRIC OXIDE NITROGEN | 0 % 99 % | ✓ 10102-43-9 7727-37-9 |
| OT: 2.2 - Nonflammable Gases | NITROGEN / OXYGEN CALIBRATION GAS CAS No Map: 1 Grid: 4H | Gas Type | t 435 Storage Container Cylinder Days on Site: 365 | 145 | 435 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release - Acute Health | | | |
| OT: 2.2 - Nonflammable Gases | NITROGEN/CARBON MONOXIDE CALIBRATION GAS CAS No Map: 1 Grid: 4H | State Gas Type | t 435 Storage Container Cylinder Days on Site: 365 | 145 | 290 Pressue < Ambient Temperature Ambient | Waste Code | Fire Reactive Pressure Release Acute Health Chronic health | NITROGEN OXYGEN CARBON MONOXIDE | 83 % 12 % 5 % | 7727-37-9 7782-44-7 124-38-9 |

| | | Hazardou | s Materials / | And Waste | s Inventory | / Matrix | Report | | | | |
|-------------------------------|--|---|---|---------------|---|-----------------|---|----------------|--|--|--|
| acility Name METCALF | ENGERGY CENTER ENERGY CENTER ID RD, SAN JOSE 95013 | Chemical Location UNIT 1 NITROGEN STORAGE | | | | | | | | | |
| | | | | Quantities | | Annual Waste | Federal Hazard | | Hazardous Components (For mixture only) | | |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt EHS CAS No. | | |
| OOT: 2.2 - Nonflammable Gases | NITROGEN CAS № 7727-37-9 Map: 1 Grid: 3E | Gas Cy Type | 600 torage Container ylinder rays on Site: 365 | 100 | 600 Pressue < Ambient Temperature Ambient | Waste Code | - Fire - Reactive - Pressure Release - Acute Health - Chronic health | | | | |

| | | Hazardo | ous Materials / | And Waste | s Inventory | Matrix | Report | 6 6 4 5 6 4 7 7 | | |
|-------------------------------|--|-------------------------------------|---|-----------------------------|---|---------------------------|---|---|--|------------------------------------|
| acility Name METCALF | ENGERGY CENTER ENERGY CENTER ID RD, SAN JOSE 95013 | Chemical Location UNIT 2 CEMS GASES | | | | | | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 P | | |
| OT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual Waste Amount | Federal Hazard Categories | Component Name | lazardous Components (For mixture only) % Wt | |
| OOT: 2.2 - Nonflammable Gases | NITROGEN / NITRIC OXIDE CALIBRATION GAS CAS No Map: 1 Grid: 2H | Gas Type | t 870 Storage Container Cylinder Days on Site: 365 | 145 | 870 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release | NITRIC OXIDE NITROGEN | 0 % 99 % | ✓ 10102-43-9 7727-37-9 |
| OT: 2.2 - Nonflammable Gases | NITROGEN / OXYGEN CALIBRATION GAS CAS No Map: 1 Grid: 2H | Gas Type | t 435 Storage Container Cylinder Days on Site: 365 | 145 | 435 Pressue Ambient Temperature Ambient | Waste Code | - Pressure Release - Acute Health | | <u>.</u> | |
| OT: 2.2 - Nonflammable Gases | NITROGEN/CARBON MONOXIDE CALIBRATION GAS CAS No Map: 1 Grid: 2H | State Gas Type | t 435 Storage Container Cylinder Days on Site: 365 | 145 | 290 Pressue < Ambient Temperature Ambient | Waste Code | - Pressure Release - Acute Health | NITROGEN OXYGEN CARBON MONOXIDE | 83 % 12 % 5 % | 7727-37-9 7782-44-7 124-38-9 |

| | | Hazardou | is Materials / | And Waste | s Inventory | / Matrix | Report | | |
|-------------------------------|---|---|---|-----------------------------|-------------|---------------------------------|--|-----------------|--|
| Facility Name METCALF | ENGERGY CENTER ENERGY CENTER D RD, SAN JOSE 95013 | Chemical Location UNIT 2 NITROGEN STORAGE | | | | CERS ID Facility I Status | 10097278 D 43-060-409545 Submitted on 2/9/2015 3:40 PM | | |
| DOT Code/Fire Haz. Class | Common Name | Unit | Max. Daily | Quantities Largest Cont. | Avg. Daily | Annual _ Waste Amount | Federal Hazard Categories | Component Name | Hazardous Components (For mixture only) % Wt EHS CAS No. |
| DOT: 2.2 - Nonflammable Gases | NITROGEN CAS No 7727-37-9 Map: 1 Grid: 2E | Pounds State S Gas C Type | 600 itorage Container Cylinder Days on Site: 365 | 100 | 600 | | - Fire - Reactive - Pressure Release - Acute Health - Chronic health | component wante | |

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| | | ₩. | Hazardo | ous Materials A | And Wastes | s Inventory | y Matrix I | Report | | | | |
|-----------------------------------|---|--------------------------|--------------------------------------|---|---------------------------|-----------------------------------|-----------------|----------------|--|--------------|-----------------------|--|
| acility Name M | • | | | | Chemical Loca WATER TR | tion REATMENT | BUILDING | | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 PM | | | |
| | | | | | Quantities | | Annual Waste | Federal Hazard | Hazardous Co (For mixtu | • | s | |
| OT Code/Fire Haz. Class | Co | mmon Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. | |
| OT: 8 - Corrosives (Liq olids) | | HEMTREAT BL-152 IS NO | | 55 Storage Container Plastic/Non-metali | 55 | 55 Pressue | Waste Code | - Acute Health | AMMONIUM HYDROXIDE | 30 % 10 % | 1336-21-6 141-43-5 | |
| orrosive | м | ap: 1 Grid: 4J | Liquid _{Type} Mixture | Plasticy Non-metali | c Drum | Ambient Temperature Ambient | | | | 10 /0 | 171-7J-J | |
| OT: 8 - Corrosives (Liq | quids and C | HEMTREAT CL-206 | Gallons | 20 | 5 | 20 | | - Acute Health | | | | |
| olids) | C# | S No | | Storage Container Other | | Pressue Ambient | Waste Code | | | | | |
| Corrosive | М | ap: 1 Grid: 4J | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | | |
| OT: 8 - Corrosives (Lig | uids and C | HEMTREAT CL-2875 | Gallons | 60 | 55 | 60 | | - Acute Health | | | | |
| olids) | C# | S No | | Storage Container Plastic/Non-metali | Drum Other | Pressue Ambient | Waste Code | | | | | |
| orrosive | м | ap: 1 Grid: 4J | Ťype | Days on Site: 365 | , orani, oarer | Temperature Ambient | | | | | | |
| OT: 9 - Misc. Hazardo | us C | HEMTREAT P873L | Gallons | 250 | 400 | 230 | | - Acute Health | Poly(dimethyldiallylammonium | 30 % | 26062-79-3 | |
| laterials | CA | S No | | Storage Container Aboveground Tank | , Other | Pressue Ambient | Waste Code | | chloride) | | | |
| | М | ap: 1 Grid: 4J | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | | |
| OT: 8 - Corrosives (Lig | uids and C | HEMTREAT RL1245 | Gallons | 300 | 400 | 220 | | - Acute Health | SODIUM BISULFITE | | 7631-90-5 | |
| olids) | C# | S No | | Storage Container Tank Inside Buildin | g | Pressue Ambient | Waste Code | | | | | |
| Corrosive | М | ap: 1 Grid: 4J | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | | |
| OT: 9 - Misc. Hazardo | us Ci | HEMTREAT RL9007 | Gallons | 330 | 400 | 330 | | - Acute Health | Diethylenetriamine penta | 30 % | 22042-96-2 | |
| laterials | CA | S No | | Storage Container Tank Inside Buildin | g | Pressue Ambient | Waste Code | | methylene phosphonic acid | | | |
| | М | ap: 1 Grid: 4J | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | | |
| OT: 8 - Corrosives (Lig | uids and C | HEMTREAT-BL-1795 | Gallons | | 55 | 110 | | - Acute Health | SODIUM PHOSPHATE, TRIBASTIC | 5 % | 7601-54-9 | |
| olids) | CA | S No | | Storage Container Plastic/Non-metali | : Drum | Pressue | Waste Code | | SODIUM HYDROXIDE | 5 % | 1310-73-2 | |
| orrosive | М | ap: 1 Grid: 4J | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | | |

| | | <u>}</u> | Hazardo | us Materials | And Waste | s Inventory | / Matrix I | Report | | | |
|--|-------------|------------------------------|----------------------------|--|---------------|--|-------------------|------------------------------------|---|--------------------|------------------------|
| ERS Business/Org. METCALF ENGERGY CENTER acility Name METCALF ENERGY CENTER 1 BLANCHARD RD, SAN JOSE 95013 | | | | | Chemical Loca | CERS ID 10097278 Facility ID 43-060-409545 Status Submitted on 2/9/2015 3:40 PM | | | | | |
| | | | | | Quantities | | Annual _ Waste | Federal Hazard | Hazardous Co (For mixtur | mponent e only) | s |
| OT Code/Fire Haz. Clas | | Common Name | Unit | Max. Daily | Largest Cont. | Avg. Daily | Amount | Categories | Component Name | % Wt | EHS CAS No. |
|)OT: 9 - Misc. Hazard Aaterials | lous | CONNTECT 6000 CAS No | | 110 Storage Container Plastic/Non-metali | 55 c Drum | 110 Pressue | Waste Code | - Acute Health | Ethylene Glycol Monobutyl Ether Ethoxylated Alcohols, C9 - C11 | 20 % 40 % | 111-76-2 68439-46-3 |
| rritant | | Map: 1 Grid: 4J | _{Type} Mixture | Days on Site: 365 | | Temperature | | | | | |
| DOT: 8 - Corrosives (Li Solids) | iquids and | FERROQUEST FQ7101 CAS No | | 10 Storage Container Carboy | 5 | 10 Pressue Ambient | Waste Code | - Reactive - Acute Health | | | |
| | | Map: 1 Grid: 4J | ^{Type} Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| DOT: 8 - Corrosives (Li Solids) | iquids and | FERROQUEST LP7200 CAS No | | 5 Storage Container Carboy | 5 | 5 Pressue Ambient | Waste Code | - Reactive - Acute Health | | | |
| Corrosive | | Map: 1 Grid: 4J | Type Mixture | Days on Site: 365 | | Temperature Ambient | | | | | |
| OOT: 8 - Corrosives (Li olids) | iquids and. | | Gallons State | 55 Storage Container | 55 | 55 Pressue | | - Acute Health | Sodium Hypochlorite | 13 % | 7681-52-9 |
| Corrosive | | 7681-52-9 Map: 1 Grid: 4J | Туре | Plastic/Non-metali Days on Site: 365 | c Drum | Ambient Temperature Ambient | Waste Code | | SODIUM HYDROXIDE | 0 % | 1310-73-2 |
| OOT: 8 - Corrosives (Li iolids) | iquids and | SODIUM HYPOCHLORITE 12.5% | Gallons State | 300 Storage Container | 400 | 150 Pressue | | - Fire - Reactive | SODIUM HYDROXIDE 10-60% | 1% | 1310-73-2 |
| Corrosive | | CAS No Map: 1 Grid: 4J | | Tank Inside Buildin | g | Ambient Temperature | Waste Code | | SODIUM HYPOCHLORITE >12.5%- 15% | 13 % | 7681-52-9 |
| | | iviap. 1 (1) (1) (4) | •• | Days on Site: 365 | | Ambient | | - Acute Health - Chronic health | SODIUM CHLORIDE WATER | | 7647-14-5 7732-18-5 |

Appendix 6

Cooling Tower Inspection Checklist

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| Tower Location METCALF | Date Inspected 3/19/15 |
|--|---|
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspector |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 |
| Process Served by Tower | _ Operation: Continuous 🛛 Intermittent 🖬 Seasonal 🗆 |
| Design Conditions: m ³ /hr 133.400 GPM HW 89.8 °F | <u>_°C CW 72.1 °F°C WB 59 °F</u> °C |
| Cell No Number of Fan Cells 10 Tower Type: C | rossflow 🛛 Counterflow 🖄 |
| Date Tower was Installed 2005 | |

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

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

| | 1 | 2 | 3 | Comments |
|--|---------|--------------|---|--------------------------------------|
| Structure | r | | | |
| Casing Material CORRUGATED | <u></u> | | | |
| Structural Material FIBERGLASS | X | | | |
| Fan Deck Material FIBERGLASS | X | | | |
| Stairway D Material FIBERGLASS | X | | | |
| Ladder D Material FIBERGLASS | X | | | |
| Handrail 🗅 Material FIBERGLASS | X | | | |
| Interior Walkway 📮 Material | X | | | |
| Cold Water Basin Material CONCRETE | X | | | |
| Silt, Debris Buildup | | \mathbf{X} | | |
| Water Distribution System | | | | |
| Open Basin System | r | | | |
| Distribution Basin Material CONCRETE | X | | | |
| Inlet Pipe Material CARBON STEEL | X | | | |
| Inlet Manifold Material FIBERGLASS | X | | | <u> </u> |
| Flow Control Valves BUTTERFLY VALVE Size | X | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | | | | |
| Silt, Algae, Debris | LXI | | | |
| Spray Type System | ·····- | | | |
| Header Pipe Material ABS | X | | | Rust on pipes |
| Branch Pipe Material PVC | X | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | X | | | Rust on pipes Some pluged cleaned |
| Up spray 🛛 🛛 Down spray 🖉 | | | | (0 - |
| Heat Transfer System | | | | |
| Fill – Type and Material <u>PVC</u> | X | | | |
| Eliminators – Type and Material <u>PVC</u> | X | | | |
| Louvers – Type and Material GALV. | | | | |
| Biological Fouling | LX | | | |
| Use this space to list specific items needing attention: | | | | |
| ose mis space to hat append items needing attention, | | | | |
| | | | | |

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| Mschanical Equipment Speed Reducer ips: Beit Drive Unit Beit Designation | | 1 | 2 | 3 | Comments |
|---|--|-------------------------|-------------|--------|---------------------------------------|
| Beit Designation | Mechanical Equipment | | | | |
| Beit Designation | Speed Reducer Type: Belt 🗆 Gear 🙇 Direct Drive 🗆 | | | | |
| Fan Sheave Designation | | <u></u> | | | |
| Fan Sheave Designation | Belt Designation | | | | |
| Gesr Drive Unit Marulacturer (MARLEY Model 4000 Rate 15.84/1 | | - | | | |
| Gesr Drive Unit Marulacturer (MARLEY Model 4000 Rate 15.84/1 | | | | | |
| Oil Level: Full B Add Immediately Lew, Check Again Soon Oil Condition: Good B Contains Water Contains Studge Oil Type Used 76 TURBINE 220 Seals | | | | | |
| Oil Condition: Good B1 Contains Water Contains Sludge 0 Oil Type Used 76 TURBINE 220 Seals X Xnput SEQ(Lec)L Seals X Xnput SEQ(Lec)L X Backtash X Xnput SEQ(Lec)L X Fan Shaft Endplay X Xnput SEQ(Lec)L X Drive Shaft X Xnput SEQ(Lec)L X Manufacturer ADDAX LRC850.625 Material FIBERGLASS X X Fan Fan Type: Popoller 61 Edges 10 Manufacturer MARLEY Fixed Pitch 1 Adjustable Pitch 1 X Diameter 384" HP7000-10 Number of Blades 10 X X X Blade Assembly Hardware \$IS X X X X Hub Cover Material FIBERGLASS X X X X Vibration Lavel X X X X X Vibration Lavel X X X X X X Vibration Line \$IS Oil Fild and Drain Line \$IS X X X X X X X X X X X | Manufacturer MARLEY Model 4000 | Ratio | 15.84 | /1 | |
| Oil Type Used 76 TURBINE 220 Seals Backlash Fan Shaf Endplay Unusual Noises? No (A) Yes D Action Required Diversity Manufacturer Adjustable Pitch Diversity Fan Tip Creating Blade Material FIBERGLASS Hub Material FBERGHASS Hub Material FIBERGLASS Blade Assembly Hardware S/S Tip Cleatance mm min Market Bild Vioration Level Fan Ophicity Hold Machacturer Manufacturer Manufacturer Manufacturer | Oil Level: Full 🖄 Add Immediately 🔾 Low, Check Again S | Soon C | 1 | | |
| Seals X Trput Segit Legit Backlash | | al 🛛 | Cor | ntains | Sludge 🛛 |
| Backlash Fan Shaft Endplay Unusual Noises? No BA Yes Action Required Dive Shaft Manufacturer ADDAXLRC850.625 Material FIBERGLASS Fan Fan Type: Propeller St Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Material FIBERGLASS Hub Cover Material FIBERGLASS Blade Assembly Hadware S/S Tip Clearance Yorkion Loved Fan Cylinder Height 14' Mechanical Equipment Support GALV. Vibration Line S/S Variation Line S/S Vibration Line S/S Vibration Line S/S Variation Line S/S Variation Line S/S Vibration Line S/S Vibration Line S/S Variation Line S/S Variation Line S/S Vibration Line S/S Variation Line S/S Variat | | | X | | Inaut seal Lean |
| Fan Shaft Endplay Unusual Noises? No X Yes C Action Required Drive Shaft Manufacturer ADDAX LRC950.625 Material File Fan Fan Type: Propeller SL Black Material File Black Material File Hub Cover MARLEY Fan Cylinder Black Assembly Hardware SKS Hub Cover Material File Fan Cylinder Height 14' Woration Level Fan Cylinder Height 14' Mechanical Equipment Support Oil Evel Sight Glass Vibration Level Side Manufacturer Stock Motor Manufacturer Manufacturer Manufacturer Reparence No Side FL Ampe 31.5 Frame Grease Usech - Type 76 POLYTAC-2 Unusual Noises? No Side Make-up Valve Unusual Noises? No Side Yes C Action Required Unusual Noises? No Side Yes C Action Required <td></td> <td>X</td> <td></td> <td></td> <td></td> | | X | | | |
| Drive Shaft Manufacturer ADDX LRC850.625 Material FIBERGLASS Fan Fan Type: Propeller & Blower □ Manufacturer MARLEY Fixed Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X Hub Material CARBON STEEL X Hub Material FIBERGLASS X Blade Assembly Hardware S/S X Blade Assembly Hardware S/S X Tip Clearancemm minmm max X Vibration Level X Fan Cylinder Height 14' X Mechanical Equipment Support GALV. X Oil Fill and Drain Line S/S X Oil Fill and Drain Line S/S X Vibration Linit Switch METRIX-M#5550-121-01 X Motor X Manufacturer TECO WESTINGHOUSE Phase 3 Name Prate Data: kW 250 HP RPM 1780 Phase 3 FL Anps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date | | \mathbf{X} | | | |
| Drive Shaft Manufacturer ADDX LRC850.625 Material FIBERGLASS Fan Fan Type: Propeller & Blower □ Manufacturer MARLEY Fixed Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X Hub Material CARBON STEEL X Hub Material FIBERGLASS X Blade Assembly Hardware S/S X Blade Assembly Hardware S/S X Tip Clearancemm minmm max X Vibration Level X Fan Cylinder Height 14' X Mechanical Equipment Support GALV. X Oil Fill and Drain Line S/S X Oil Fill and Drain Line S/S X Vibration Linit Switch METRIX-M#5550-121-01 X Motor X Manufacturer TECO WESTINGHOUSE Phase 3 Name Prate Data: kW 250 HP RPM 1780 Phase 3 FL Anps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date | Unusual Noises? No 🖄 Yes 🗆 Action Required | | _ | | |
| Fan Fan Type: Propoller SL Blower Manufacturer MARLEY Fixed Pitch Adjustable Pitch Diameter 364" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X X Hub Material CARBON STEEL X X X Hub Cover Material FIBERGLASS X X X Blade Assembly Hardware \$/S X X X X Tip Clearance _mm min _mm max X X X X Fan Cylinder Height 14' X X X X X X Mechanical Equipment Support GALV. X< | Drive Shaft | | | | |
| Fan Type: Propeller Sd Blower □ Manufacturer MARLEY Fixed Pitch □ Adjustable Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X X Hub Material CARBON STEEL X X Hub Cover Material FIBERGLASS X X Blade Assembly Hardware S/S X X Tip Clearance mm min mm max X X Vibration Level X X X X Fan Cylinder Height 14' X X X X Wibration Limit Switch METRIX-M#5550-121-01 X Y X X Y Vibration Limit Switch METRIX-M#5550-121-01 X Y. Luck ½ X Y X Y Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 Y FL Amp 31.5 Frame 5009 S F 1.15 Special Into. M#AEHG-WT002 Last Lubrication? No 52 Y 4 | Manufacturer ADDAX LRC850.625 Material FIBERGLASS | $\left \times \right $ | | | |
| Manufacturer MARLEY Fixed Pitch □ Adjustable Pitch □ Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS | | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS X Hub Material FIBERGLASS X Blade Assembly Hardware \$/S X Tip Clearancemm minmm max X Vibration Level | | | | | |
| Blade Material FIBERGLASS X Hub Material CARBON STEEL X Hub Cover Material FIBERGLASS X Blade Assembly Hardware S/S X Tip Clearancemm minmm max X Vibration Level | | Pitch | 1 | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support CALV. Oil Fill and Drain Line S/S Oil Level Sight Class Vibration Limit Switch, METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 FL Amps 31.5 Frame 5009 S F 1.15 Last Lubrication - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes D Action Required Unusual Heat Build-up? No 54 Yes D Action Required | Diameter 004 Th Todo to Number of Blades 10 | | - | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch, METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 FL Amps 31.5 Frame 5009 S F 1.15 Last Lubrication - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes D Action Required Unusual Heat Build-up? No 54 Yes D Action Required | | | <u> </u> | | |
| Hub Mathai Hub Cover Material Hub Cover Material Hub Cover Material Hub Cover Material Blade Assembly Hardware Sile Assembly Hardware Sile Clearance | | × | | | |
| Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oit Fill and Drain Line S/S Oit Fill and Drain Line S/S Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date Grease Used - Type Top Pase 1 Action Required Unusual Noises? No SZ Yes 1 Action Required Unusual Heat Build-up? No SZ Yes 1 Action Required Unusual Heat Build-up? No SZ | | - | | | <u> </u> |
| Tip Clearance mm min mm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line 5/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 X Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame Grease Used - Type 76 POLYTAC-2 Unusual Noises? No \$\vec{Y}\$ Yes 0 Action Required Unusual Heat Build-up? No \$\vec{Y}\$ Yes 0 Action Required Make-up Vaive Other Component | | | | | · · · · · · · · · · · · · · · · · · · |
| Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support Gall V. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Unusual Noises? No & Yes I Action Required Unusual Noises? No & Yes I Action Required Unusual Heat Build-up? No & Yes I Action Required Make-up Vaive Other Component | • | | | | |
| Fan Cylinder Height 14' Mechanical Equipment Support Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 31.5 Frame 5009 S F 1.15 Special Info, M#AEHG-WT002 Make-up Vaive Other Component | • | | | | |
| Mate-up Valve Make-up Valve Mate-up Valve Make-up Valve | | l 즟 | | | |
| Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 volts 4160 Special Info. WarkEHG-WT002 Lext Lubrication - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes Action Required Unusual Heat Build-up? No 54 Yes Action Required Unusual Heat Build-up? No 54 Yes Condense Make-up Vaive Other Component | | | | | |
| Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 FL Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Volts 4160 Station - Date Grease Used - Type 76 POLYTAC-2 Unusual Noises? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Action Required Unusual Heat Build-up? No 54 Yes □ Yes □ Action Required Yes □ <p< td=""><td>0/0</td><td></td><td></td><td></td><td></td></p<> | 0/0 | | | | |
| Oil Level Sight Glass | | | | | |
| Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date | | — | X | | PI((h |
| Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date | | | ~ | | fifting Librail |
| Name Plate Data: kW 250 HP RPM 1780 Phase 3 Hz 60 Volts 4160 F L Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 Last Lubrication - Date | | | | | |
| FL Amps 31.5 Frame 5009 S F 1.15 Special Info. M#AEHG-WT002 M#AEHG-WT002 Grease Used Type 76 POLYTAC-2 Unusual Noises? No 76 POLYTAC-2 Unusual Vibration? No 76 Yes Action Required Unusual Heat Build-up? No 76 Yes Action Required Unusual Heat Build-up? No 76 Yes 76 Action Required 76 Action Required 76 POLYTAC-2 97 Yes 98 Action Required 98 Ac | | | 2 | | 60 4460 |
| Last Lubrication Date Grease Used Type 76 POLYTAC-2 Unusual Noises? No 57 Yes Action Required Unusual Vibration? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? No 52 Yes Action Required Unusual Heat Build-up? Yes Action Required Unusual Heat Build-up? | | Phas | se <u> </u> | | Hz 00 Volts 4160 |
| Grease Used Type 76 POLYTAC-2 Unusual Noises? No 54-Yes Action Required Unusual Vibration? No 54 Yes Action Required Unusual Heat Build-up? No 54 Yes Action Required Make-up Valve Other Component | • • • • • • • • • • | | - | Spe | cial Info, M#AEHG-VV1002 |
| Unusual Noises? No 57- Yes Action Required | | | | | |
| Unusual Vibration? No 🖌 Yes 🗆 Action Required Unusual Heat Build-up? No K Yes 🗆 Action Required Make-up Valve Other Component | | | | | |
| Unusual Heat Build-up? No & Yes C Action Required | - | | | | |
| Make-up Valve Dther Component | | | | | |
| Other Component | Unusual Heat Build-up? No 💐 Yes 🖬 Action Required _ | | | | |
| Other Component | Make-un Valve | | Γ. | | |
| | | | —ŀ | | |
| | Other Component | | 1 | - | |

Cooling Tower Inspection Checklist

| Tower Location METCALF | Date Inspected 3/20/15 |
|--|---|
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspector 14-7 Aris |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 |
| Process Served by Tower | Operation: Continuous 🖄 Intermittent 🗆 Seasonal 🗆 |
| Design Conditions: m ³ /hr 133.400 GPM HW 89.8 °F | C CW <u>72.1 °F</u> ℃ WB <u>59 °F</u> ℃ |
| Cell No Number of Fan Cells 10 Tower Type: Cro. | ssflow 🗅 Counterflow 🛋 |
| Date Tower was Installed 2005 | |

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

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

| | 1 | 2 | 3 | Comments |
|--|--------------|--------------|---|--------------------------|
| Structure | | | | |
| Casing Material CORRUGATED | \succ | | | |
| Structural Material FIBERGLASS | \checkmark | | | |
| Fan Deck Material FIBERGLASS | 7 | | | |
| Stairway D Material FIBERGLASS | \star | | | |
| Ladder D Material FIBERGLASS | X | | | |
| Handrail 🛛 Material FIBERGLASS | 1 | | | |
| Interior Walkway 🛛 Material | * | | | |
| Cold Water Basin Material CONCRETE | × | | | |
| 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 VALVE Size | X | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | X | | | Week to Replace 3 Broken |
| Silt, Algae, Debris | $ \times $ | | | |
| Spray Type System | | | | |
| Header Pipe Material ABS | \times | | | |
| Branch Pipe Material PVC | X | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | | \mathbf{X} | | Some Locks / Repaired |
| Up spray 🗋 🛛 Down spray 🗖 | | | | · |
| Heat Transfer System | · | | | |
| Fill – Type and Material PVC | | \square | | Need to Replace A Few |
| Eliminators – Type and Material <u>PVC</u> | | | | |
| Louvers - Type and Material GALV. | | | | |
| Biological Fouling | | | | |
| Use this space to list specific items needing attention: | | | | |
| | | | | |

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

| | 1 2 | 3 | Comments |
|---|---|---------|---|
| Mechanical Equipment | L | | · · · · · · · · · · · · · · · · · · · |
| Speed Reducer Type: Belt 🛛 Gear 💋 Direct Drive 🗅 | | | |
| Belt Drive Unit | | | |
| Belt Designation | | | |
| Fan Sheave Designation | | 1 | |
| Motor Sheave Designation | | | |
| Gear Drive Unit | <u> </u> | | |
| Manufacturer_MARLEY Model_4000 | Ratio 15.8 | 4/1 | |
| Oil Level: Full 🖏 Add Immediately 🖬 Low, Check Again S | | | |
| Oil Condition: Good 🔏 Contains Water 🖬 Contains Met | | ontains | Sludge |
| Oil Type Used 76 TURBINE 220 | | | |
| Seals | \square | | Seal Legy Geol bo |
| Backlash | × | 1 | |
| Fan Shaft Endplay | × | | |
| Unusual Noises? No 🕰 Yes 🗔 Action Required | Lib ale | 5 | apris of Oil |
| Drive Shaft | | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | X | | |
| Fan | | | |
| Manufacturer MARLEY Fixed Pitch 🛛 Adjustable | | | |
| Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> | | | ······ |
| Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> Blade Material FIBERGLASS | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL | × × | | |
| Blade Material FIBERGLASS | x | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL | <u>у</u> у- | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS | × * × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min | <u>у</u> у- | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' | × * × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min | × * × × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' | × * × × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | × * × × × × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | × × × × × × × × × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 | × × × × × × × × × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | × × × × × × × × × × × × × × | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE | メ メ メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | メ メ メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | | Hz <u>60</u> Hz <u>60</u> Volts <u>4160</u> cial Info. <u>M#AEHG-WT002</u> |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 | メ メ メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level | メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | Spe | cial Info. M#AEHG-WT002 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | メ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | Spe | cial Info. M#AEHG-WT002 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | メ デ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | Spe | cial Info. M#AEHG-WT002 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level | メ デ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | Spe | cial Info. M#AEHG-WT002 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level | メ デ メ メ メ 、 、 、 、 、 、 、 、 、 、 、 、 、 | Spe | cial Info. M#AEHG-WT002 |

SPX Cooling Technologies UK Ltd • 3 Knightsbridge Park • Wainwright Road • Worcester WR4 9FA • United Kingdom • 44 1905 750 270

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Cooling Tower Inspection Checklist

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| Tower Location METCALF | Date Inspected |
|--|---|
| Owner / Company | inspected by HENRY AVIS |
| Company Contact | Inspector |
| Signature | Signature Munter |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. <u>F488A-40-10PPWD</u> Serial No. <u>223647</u> |
| Process Served by Tower | Operation: Continuous 🛱 Intermittent 🗆 Seasonal 🗅 |
| Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u> | °C CW <u>72.1 °F</u> °C WB <u>59 °F</u> °C |
| Cell No. <u>3</u> Number of Fan Cells <u>10</u> Tower Type: | Crossflow 🖸 Counterflow 💐 |
| Date Tower was installed 2005 | |

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

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

1 2 2

| | 1 | 2 | 3 | Comments |
|--|--------------|---|---|---------------|
| Structure | | | | |
| Casing Material CORRUGATED | X | | | |
| Structural Material FIBERGLASS | X | | | |
| Fan Deck Material FIBERGLASS | \mathbf{X} | | | |
| Stairway 🖸 Material FIBERGLASS | X | | | |
| Ladder Q Material FIBERGLASS | \mathbf{X} | | | |
| Handrail 🔾 Material FIBERGLASS | × | | | |
| Interior Walkway 🛛 Material | \checkmark | | | |
| Cold Water Basin Material CONCRETE | 1 | | | |
| Silt, Debris Buildup | ĸ | | - | |
| 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 VALVE Size | X | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | X | | | |
| Silt, Algae, Debris | | | |] |
| Spray Type System | ر ا | | | |
| Header Pipe Material ABS | <u>ا</u> لج | | | rust on pipes |
| Branch Pipe Material PVC | | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | X | | | |
| Up spray 🗆 🛛 Down spray 🕰 | | | | |
| Heat Transfer System | | | | |
| Fill – Type and Material <u>PVC</u> | \times | | | |
| Eliminators – Type and Material PVC | × | | | |
| Louvers – Type and Material GALV. | X | | | |
| Biological Fouling | | | | |
| Use this space to list specific items needing attention: | | | | |
| | | | | |
| | | | | |

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

1

| | 1 | 2 | 3 | | | Comme | nts |
|--|--------------------|-------------|-------|-----------------------|-------------------------|--------------|------------|
| echanical Equipment | ••• | | | | | | |
| Speed Reducer Type: Belt 🗆 Gear 🗆 Direct Drive 🙇 | | | | | | | |
| Beit 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 S | Soon C | ב | | | | | |
| Oil Condition: Good 🕱 Contains Water 🗆 Contains Met | tal 🛛 | Con | tains | Sludge 🛛 | | | |
| Oil Type Used 76 TURBINE 220 | | ~ | | | | | |
| Seals | • | × | | Hose | Leal | | Fixed |
| Backlash | ×_ | | | | | | |
| Fan Shaft Endplay | \times | | | | -t | | |
| Unusual Noises? No 🕰 Yes 🗅 🛛 Action Required | <u>Ada</u> | <u>1e6</u> | | 5000 | 15 | | |
| Drive Shaft | | , , | | | | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | | | | | | | |
| Fan | | | | | | | |
| | | | | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 | | ~ 7 | | | | | |
| Blade Material FIBERGLASS | K | | ; | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL | X | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS | XXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL | ХX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS | XXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min | ХX | | | <u>-</u> | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level Fan Cylinder Height 14' | XXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S | XXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XXXXXXXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XXXXXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XXXXXXXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XXXXXXXXX | | | | | | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level | XX XX XXXXX Pha | se <u>3</u> | | | | | Volts 4160 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | XX XX XXXXX Pha | se <u>3</u> | Spee | | Hz <u>60</u> #AEHG-W | | Volts 4160 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | XX XX XXXXX Pha | | Speed | | Hz <u>60</u> #AEHG-W | T002 | Volts 4160 |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level | XXXXXXXX Pha | - | Spe | cial Info. <u>M</u> # | ¥AEHG-W | T002 | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer Manufacturer TECO WESTINGHOUSE Name Plate Data: kW kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Last Lubrication - Date Grease Used - Type Grease Used - Type 76 POLYTAC-2 Unusual Noises? No *2 Yes Action Required _ | XXXXXXX Pha | - | Sper | cial Info. <u>M</u> # | ¥AEHG-W | T 002 | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level | NX XX XXXX Pha | - | Sper | cial Info. <u>M</u> # | ¥AEHG-W | T002 | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | NX XX XXXX Pha | - | Sper | cial Info. <u>M</u> # | ¥AEHG-W | T002 | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | NX XX XXXX Pha | - | Sper | cial Info. <u>M</u> # | ¥AEHG-W | T002 | |
| Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm min mm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | NX XX XXXX Pha | - | Sper | cial Info. <u>M</u> # | ¥AEHG-W | T002 | |

Cooling Tower Inspection Checklist

| Tower Location METCALF | Date Inspected 3/2 4/15 |
|--|---|
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspector |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 |
| Process Served by Tower | Operation: Continuous 🏞 Intermittent 🖬 Seasonal 🛱 |
| Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u> | °C CW <u>72.1 °F </u> °C WB <u>59 °F </u> °C |
| Cell No Number of Fan Cells 10 Tower Type: | Crossflow 🖬 Counterflow 🖄 |
| Date Tower was Installed 2005 | |

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

| | 1 | 2 | 3 | Comments |
|--|--------------|-------------|----------|---------------------------|
| Structure | | | | |
| Casing Material CORRUGATED | | | | . = |
| Structural Material FIBERGLASS | _ 🗶 | | | |
| Fan Deck Material FIBERGLASS | <u> </u> | | | |
| Stairway D Material FIBERGLASS | _ IX | ļ | | |
| Ladder D Material FIBERGLASS | X | | | |
| Handrail 🛛 Material FIBERGLASS | _ 🗶 | <u> </u> | | |
| Interior Walkway 📮 Material | <u> </u> | | | |
| Cold Water Basin Material CONCRETE | - 🔆 | | | |
| Silt, Debris Buildup | <u>×</u> | | | |
| Water Distribution System | | | | |
| Open Basin System | | | · | ······ |
| Distribution Basin Material CONCRETE | | <u>+-</u> | · | |
| Inlet Pipe Material CARBON STEEL | - | | | · ····· |
| Inlet Manifold Material FIBERGLASS | _ <u> K</u> | | | |
| Flow Control Valves BUTTERFLY VALVE Siz | א יי | | <u> </u> | |
| Nozzles – Orifice Diameter <u>3</u> "Siz | • 🔀 | | | |
| Silt, Algae, Debris | _ | | | |
| Spray Type System | | | 1 | |
| Header Pipe Material ABS | - 🏳 | | | |
| Branch Pipe Material <u>PVC</u> | <u> </u> | <u> </u> | ļ | |
| Nozzles - Orifice Diameter <u>3"</u> Siz | 。 (<u>×</u> | | | Repussed 3 Nozzles |
| Up spray 🔾 🛛 Down spray 称 | | | | |
| Heat Transfer System | | | 1 | |
| Fill – Type and Material <u>PVC</u> | _ 🙀 | <u> X</u> _ | | Hole in Fill Repais Nozzi |
| Eliminators – Type and Material PVC | - <u> x</u> | 1 | | |
| Louvers – Type and Material GALV. | _ <u> </u> | | <u> </u> | |
| Biological Fouling | _ L | X | | |

У

| | 1 | 2 | 3 | Comments |
|--|----------|------------|--------|---------------------------------------|
| Mechanical Equipment | | | | |
| 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 S | ioon 🛛 | | | |
| Oil Condition: Good 🕰 Contains Water 🛛 Contains Meta | al 📮 | Con | itains | Sludge 🖸 |
| Oil Type Used 76 TURBINE 220 | | | | ····· |
| Seals | X | | | Added 3 guarts |
| Backlash | Ķ | <u>×</u> | | Leak |
| Fan Shaft Endplay | | | | |
| · Unusual Noises? No 🎘 Yes 🗅 🛛 Action Required | | | | |
| Drive Shaft | | i | | · · · · · · · · · · · · · · · · · · · |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | | | | |
| Fan | | | | |
| Fan Type: Propeller 🎘 Blower 🗆 | | | | |
| Manufacturer MARLEY Fixed Pitch 🗳 Adjustable | Pitch [| 2 | | |
| Diameter 384" HP7000-10 Number of Blades 10 | | - | | |
| | | | | · · · · · · · · · · · · · · · · · · · |
| Blade Material FIBERGLASS | × | | | |
| Hub Material CARBON STEEL | × | | | |
| Hub Cover Material FIBERGLASS | X | | | |
| Blade Assembly Hardware S/S | Ø | | | |
| Tip Clearancemm minmm max | X | | | |
| Vibration Level | 1X1 | | | |
| Fan Cylinder Height _14' | | | | |
| Mechanical Equipment Support GALV. | | | | |
| Oil Fill and Drain Line S/S | X | | | |
| Oil Level Sight Glass | × | | | |
| Vibration Limit Switch METRIX-M#5550-121-01 | X | | | |
| Motor | | | | |
| Manufacturer TECO WESTINGHOUSE | | | | |
| | | ю <u>З</u> | | Hz <u>60</u> Volts <u>4160</u> |
| FLAmps <u>31.5</u> Frame <u>5009</u> SF <u>1.15</u> | | - | Spe | cial Info. M#AEHG-WT002 |
| Last Lubrication – Date | | | | |
| Grease Used - Type _76 POLYTAC-2 | | | | |
| Unusual Noises? No 🐔 Yes 🖬 Action Required | | | | |
| Unusual Vibration? No 右 Yes 🛛 Action Required | | | | |
| | | | | |
| | r | | | |
| Make-up Vaive | | | | <u>-</u> |
| Other Component | | | | |
| Other Component | | | | |

Cooling Tower Inspection Checklist

| Tower Location METCALF | Date inspected 3/24/15 |
|--|---|
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspector |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 |
| Process Served by Tower | Operation: Continuous C Intermittent C Seasonal C |
| Design Conditions: m ³ /hr 133.400 GPM HW 89.8 °F | C CW 72.1 °F °C WB 59 °F °C |
| Celi No Number of Fan Cells 10 Tower Type: Cro | ssflow Q Counterflow Q |
| Date Tower was Installed 2005 | |

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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 | |
| Fan Deck Material FIBERGLASS | V V |
| Stairway D Material FIBERGLASS | Ŷ . |
| Ladder D Material FIBERGLASS | X |
| Handrail D Material FIBERGLASS | X |
| Interior Walkway 🔲 Material | X |
| Cold Water Basin Material CONCRETE | 2 |
| Silt, Debris Buildup | X |
| Water Distribution System | |
| Open Basin System | |
| Distribution Basin Material CONCRETE | × |
| Inlet Pipe Material CARBON STEEL | X |
| Inlet Manifold Material FIBERGLASS | X |
| Flow Control Valves BUTTERFLY VALVE Size | × |
| Nozzles – Orifice Diameter 3"Size | * |
| Silt, Algae, Debris | Χ |
| Spray Type System | |
| Header Pipe Material ABS | × |
| Branch Pipe Material PVC | X |
| Nozzles – Orifice Diameter <u>3"</u> Size | X Repaired 3 Nozcleg |
| Up spray 🖸 🛛 Down spray 🎘 | , |
| Heat Transfer System | |
| Fill – Type and Material <u>PVC</u> | X Hole in Vill |
| Eliminators – Type and Material <u>PVC</u> | 7 |
| Louvers – Type and Material GALV. | × |
| 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

| | 1 | 2 3 | | | Comment | s | |
|---|---|----------|-------------|---------------------------------------|---------|-------------------|----------------|
| echanical Equipment | | | | | | | |
| 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 _1 | 15.84/1 | | | | | |
| Oil Level: Full C Add Immediately L Low, Check Again S | _ | | | - | | | |
| Oil Condition: Good 2 Contains Water C Contains Met Oil Type Used 76 TURBINE 220 | | Contains | s Sludge (| נ | | | |
| Seals | | X | Lead | 6 | ALL | 0120 | \overline{i} |
| Backlash | X | | | | | ••• | <u>.</u> |
| Fan Shaft Endplay | | | | | | | |
| Tan Shan Endplay Unusual Noises? No 🛛 Yes 🗖 Action Required | | I | | | | - | |
| Drive Shaft | | | | • • | | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | M | <u> </u> | | | ······ | ·, | |
| Fan | <u> </u> | ! | - I | | | - | |
| Manufacturer MARLEY Fixed Pitch Diameter 384" HP7000-10 Number of Blades 10 | Pitch |) | | | | | |
| | | | | | | | |
| EIRED CLASS | | | | | | | |
| Blade Material FIBERGLASS | <u>X</u> | | | | | | |
| Hub Material CARBON STEEL | X X | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS | X X X V | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S | XXXX | | | · · · · · · · · · · · · · · · · · · · | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm max | XXXXX | | | · · · · · · · · · · · · · · · · · · · | | ····· | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' | XX | | | · · · · · · · · · · · · · · · · · · · | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XX | | | · · · · · · · · · · · · · · · · · · · | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S | XXXX | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min with the minical control of the min | $\frac{1}{2}$ | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S | XXXX | | | · · · · · · · · · · · · · · · · · · · | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | $\frac{1}{2}$ | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | | | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | X X X X X X Phase | | | Hz <u>60</u> M#AEHG- | | Volts <u>4160</u> | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Last Lubrication – Date | X X X X X X Phase | | ecial Info. | | | Volts 4160 | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor Manufacturer TECO WESTINGHOUSE Name Plate Data: kW 250 HP RPM 1780 F L Amps 31.5 Frame 5009 S F 1.15 Last Lubrication – Date | X X X X X X Phase | | ecial Info | | | Volts <u>4160</u> | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Yibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | X X X X X Phase | Sp | | M#AEHG- | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Tip Clearance mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | X X X X Phase | Sp | | M#AEHG- | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Tip Clearance mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | X X X X X Y A X | Sp | | M#AEHG- | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | X X X X X Y A X | Sp | | M#AEHG- | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | X X X X X Y A X | Sp | | M#AEHG- | | | |

Cooling Tower Inspection Checklist

| Tower Location METCALF | Date Inspected 3/25/15 |
|--|---|
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspected by HENRY AVIS |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 |
| Process Served by Tower | Operation: Continuous 🕰 Intermittent 🖾 Seasonal 🗆 |
| Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u> | _°C CW <u>72.1 °F</u> °C WB <u>59 °F</u> °C |
| Cell No Number of Fan Cells 10 Tower Type: C | Crossflow 🔲 Counterflow 🗖 |
| Date Tower was Installed 2005 | |

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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 | Ĺ | | | |
| Stairway D Material FIBERGLASS | <u> </u> | | | |
| Ladder D Material FIBERGLASS | X | | | |
| Handrail 🔲 Material FIBERGLASS | K | | | |
| 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 | | | | |
| Inlet Manifold Material FIBERGLASS | $ \lambda $ | | | |
| Flow Control Valves BUTTERFLY VALVE Size | × | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | 1 | | | |
| Silt, Algae, Debris | X | | | |
| Spray Type System | | | , | |
| Header Pipe Material ABS | X | | | Rus+ |
| Branch Pipe Material PVC | X | | | Neer Bolts Replaced |
| Nozzles – Orifice Diameter <u>3"</u> Size | X | | | Nepa: 5 Nozzies |
| Up spray 🔲 🛛 Down spray 🗖 👘 | | | | · |
| Heat Transfer System | ; | · | | A |
| Fill – Type and Material PVC | | \star | | Hole in Sill |
| Eliminators – Type and Material PVC | X | | | |
| Louvers – Type and Material GALV. | X | | | |
| Biological Fouling | IX | | | |
| Use this space to list specific items needing attention: | | | | |
| | | | | |

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| | 1 | 2 | 3 | Comments | |
|--|----------------|-------------|-------|--|-------------|
| Mechanical Equipment | | | | | |
| Speed Reducer Type: Belt C Gear 🕰 Direct Drive C | | | | | |
| 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 S | Soon 🗆 | | | | |
| Oil Condition: Good 7 Contains Water Contains Met Oil Type Used 76 TURBINE 220 | al 🖸 | Con | tains | Sludge 🗖 | |
| Seals | X | Ĩ | | | |
| Backlash | X | | | | |
| Fan Shaft Endplay | X | | | | |
| Unusual Noises? No 🚈 Yes 🗆 Action Required | | | | | |
| Drive Shaft | | | | ······································ | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | X | | | | |
| Fan | | | | | |
| Fan Type: Propeller Blower Manufacturer MARLEY Fixed Pitch Adjustable Diameter 384" HP7000-10 Number of Blades 10 | Pitch (| - | | | |
| | | | | | |
| Blade Material FIBERGLASS | × | | | | |
| Hub Material CARBON STEEL | | | | | |
| Hub Cover Material FIBERGLASS | × | | | | |
| Blade Assembly Hardware S/S | * | | | | |
| Tip Clearancemm minmm max | | | | | |
| Vibration Level | × | | | | |
| Fan Cylinder Height 14' | X | | | | |
| Mechanical Equipment Support <u>GALV.</u> | $ \mathbf{x} $ | | | · · · · · · · · · · · · · · · · · · · | |
| Oil Fill and Drain Line S/S | X | | | | |
| Oil Level Sight Glass | | | | | |
| Vibration Limit Switch METRIX-M#5550-121-01 | \mathbf{X} | | | | |
| Motor | | | | | |
| Manufacturer TECO WESTINGHOUSE | | | | | |
| Name Plate Data: kW 250 HP RPM 1780 | | зе <u>З</u> | | Hz <u>60</u> Volts <u>4160</u> | |
| F L Amps 31.5 Frame 5009 S F 1.15 | | - | Spe | cial InfoM#AEHG-WT002 | |
| Last Lubrication – Date | | | | | |
| Grease Used - Type 76 POLYTAC-2 | | | | | |
| 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 | | | | <u>1</u> | |

Cooling Tower Inspection Checklist

Comments

| Tower Location METCALF | Date Inspected 03/25/15 | | | | | | | |
|--|---|--|--|--|--|--|--|--|
| Owner / Company | Inspected by HENBY AVIS | | | | | | | |
| Company Contact | Inspected by HENBY AVIS | | | | | | | |
| Signature | Signature | | | | | | | |
| Owner's Tower Designation | · · · · · · · · · · · · · · · · · · · | | | | | | | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 | | | | | | | |
| Process Served by Tower | Operation: Continuous 🕰 Intermittent 🛛 Seasonal 🗖 | | | | | | | |
| | °C CW <u>72.1 °F </u> °C WB <u>59 °F</u> °C | | | | | | | |
| Cell No Number of Fan Cells 10 Tower Type: 0 | Crossflow 🗖 Counterflow ⁄ 🔍 | | | | | | | |
| Date Tower was Installed 2005 | | | | | | | | |

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

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

1 2 3

| Structure | |
|--|---------------------|
| Casing Material CORRUGATED | |
| Structural Material FIBERGLASS | |
| Fan Deck Material FIBERGLASS | |
| Stairway D Material FIBERGLASS | |
| Ladder 🗆 Material FIBERGLASS | 9 |
| Handrail 🗆 Material FIBERGLASS | У |
| Interior Walkway 📮 Material | X |
| Cold Water Basin Material CONCRETE | |
| Silt, Debris Buildup | |
| Water Distribution System | |
| Open Basin System | |
| Distribution Basin Material CONCRETE | × |
| Inlet Pipe Material CARBON STEEL | X |
| Inlet Manifold Material FIBERGLASS | |
| Flow Control Valves BUTTERFLY VALVE Size | X |
| Nozzles – Orifice Diameter <u>3"</u> Size | × |
| Silt, Algae, Debris | |
| Spray Type System | |
| Header Pipe Material ABS | |
| Branch Pipe Material PVC | X |
| Nozzles – Orifice Diameter <u>3"</u> Size | X Cleanet 5 Nozzles |
| Up spray 🗅 Down spray 🗆 | |
| Heat Transfer System | |
| Fill – Type and Material PVC | 14 |
| Eliminators – Type and Material PVC | ≁ |
| Louvers – Type and Material GALV. | |
| Biological Fouling | |
| Use this space to list specific items needing attention: | |
| | |
| | |

7

| | 1 | 2 | 3 | Comments |
|--|-------------|-------|------------|---------------------------------------|
| Mechanical Equipment | | | | |
| 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 d Add Immediately D Low, Check Again S | | | | |
| Oil Condition: Good 🖉 Contains Water 🛛 Contains Met | | | ntains \$ | Sludge 🖵 |
| Oil Type Used 76 TURBINE 220 | r | | | |
| Seals | | | | added 39ts |
| Backlash | K- | | | |
| Fan Shaft Endplay | | | | |
| Unusual Noises? No 🕰 Yes 🖬 🛛 Action Required | | | | · · · · · · · · · · · · · · · · · · · |
| Drive Shaft | г т | | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | X | | | |
| Fan | | | | |
| Fan Type: Propeller 🖄 Blower 🗆 | | | | |
| Manufacturer MARLEY Fixed Pitch C Adjustable | : Pitch 🗶 | Į | | |
| Diameter 384" HP7000-10 Number of Blades 10 | | | | |
| | · | —-r | | |
| Blade Material FIBERGLASS | A | | | |
| Hub Material CARBON STEEL | X | | $ \square$ | |
| Hub Cover Material FIBERGLASS | | | | |
| Blade Assembly Hardware <u>S/S</u> | X | | | |
| Tip Clearancemm minmm max | \square | | | |
| Vibration Level | X | | | |
| Fan Cylinder Height <u>14'</u> | X | | | |
| Mechanical Equipment Support GALV. | X | _ | | |
| Oil Fill and Drain Line S/S | 1 | | | |
| Oil Level Sight Glass | 싀 | | | |
| Vibration Limit Switch METRIX-M#5550-121-01 | | | | |
| Motor | | | | |
| Manufacturer TECO WESTINGHOUSE | | | | |
| Name Plate Data: kW 250 HP RPM 1780 | Phase | 3_3_ | | Hz <u>60</u> Volts <u>4160</u> |
| FL Amps 31.5 Frame 5009 S F 1.15 | | | Spec | ial Info. M#AEHG-WT002 |
| Last Lubrication - Date | | | | |
| Grease Used – Type 76 POLYTAC-2 | | | | |
| Unusual Noises? No 🗹 Yes 🖬 Action Required | | | | |
| Unusual Vibration? No ダ Yes 🗆 Action Required | | | | |
| Unusual Heat Build-up? No 🙇 Yes 🖬 Action Required | | | | |
| Make-up Valve | | | | |
| Dther Component | | | | |
| Other Component | | | | |
| | | | | |

Cooling Tower Inspection Checklist

| Tower Location METCALF | Date Inspected 3/15/15 | | | | | | |
|---|---|--|--|--|--|--|--|
| Owner / Company | Inspected | | | | | | |
| Company Contact | | | | | | | |
| Signature | Signature | | | | | | |
| Owner's Tower Designation | | | | | | | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 | | | | | | |
| Process Served by Tower | Operation: Continuous 🕾 Intermittent 🗆 Seasonal 🗆 | | | | | | |
| Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u> or | CW <u>72.1 °F</u> °C WB <u>59 °F</u> °C | | | | | | |
| Call No. 8 Number of Fan Cells 10 Tower Type: Cros | sílow 🛛 Counterflow 🐱 | | | | | | |
| Date Tower was installed 2005 | | | | | | | |

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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 | 上 | | | |
| Fan Deck Material FIBERGLASS | X | | | |
| Stairway D Material FIBERGLASS | 1× | | | |
| Ladder D Material FIBERGLASS | | | | |
| Handrail D Material FIBERGLASS | X | | | |
| Interior Walkway 🖸 Material | X | | | |
| Cold Water Basin Material CONCRETE | X | | | |
| Silt, Debris Buildup | \mathbf{k} | | | |
| Water Distribution System | | | | |
| Open Basin System | | | | |
| Distribution Basin Material CONCRETE | X | | | |
| Inlet Pipe Material CARBON STEEL | $\boldsymbol{\times}$ | | | |
| Inlet Manifold Material FIBERGLASS | | | | |
| Flow Control Valves BUTTERFLY VALVE Size | Jer- | | | |
| Nozzles – Orifice Diameter 3" Size | X | | | |
| Silt, Algae, Debris | $\overline{\mathbf{x}}$ | | | |
| Spray Type System | <u> </u> | | | |
| Header Pipe Material ABS | X | | | |
| Branch Pipe Material PVC | 1 | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | \times | | | |
| Up spray 🛯 🛛 Down spray 🕰 | | | | |
| Heat Transfer System | i | | | |
| Fill – Type and Material PVC | * | | | |
| Eliminators – Type and Material <u>PVC</u> | × | | | |
| Louvers – Type and Material GALV. | \mathbf{X} | | | |
| Biological Fouling | 人 | | | |
| Use this space to list specific items needing attention: | | | | |

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| | 1 | 2 | 3 | Comments |
|--|------------------------|------------|-------|-------------------------|
| Mechanical Equipment | _ | | | |
| 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 | - | | | |
| Oil Condition: Good 🕰 Contains Water 🗆 Contains Met | | | tains | Sludge |
| Oil Type Used 76 TURBINE 220 | | | | |
| Seals | X | | | Added Oil 3gil |
| Backlash | × | | | |
| Fan Shaft Endplay | X | | | |
| Unusual Noises? No 🗅 Yes 🖬 Action Required | | | | |
| Drive Shaft | | • | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | X | | | |
| Fan | | | | |
| Fan Type: Propeller 🗆 Blower 🗅 | | | | |
| Manufacturer MARLEY Fixed Pitch 🔾 Adjustable | Pitch D | ב | | |
| Diameter 384" HP7000-10 Number of Blades 10 | | _ | | |
| | | - | | |
| Blade Material FIBERGLASS | X | | - | |
| Hub Material CARBON STEEL | $\left \right\rangle$ | | | |
| Hub Cover Material FIBERGLASS | $\boldsymbol{\times}$ | | | |
| Blade Assembly Hardware S/S | \prec | | | |
| Tip Clearancemm minmm max | X | _ | | |
| Vibration Level | $\left X \right $ | | | |
| Fan Cylinder Height <u>14'</u> | × | | | |
| Mechanical Equipment Support GALV. | X | | | |
| Oil Fill and Drain Line S/S | × | | | |
| Oil Level Sight Glass | X | | | |
| Vibration Limit Switch METRIX-M#5550-121-01 | X | | | |
| Motor | | | | |
| Manufacturer TECO WESTINGHOUSE | | | | |
| Name Plate Data: kW 250 HP RPM 1780 | Phas | e <u>3</u> | | Hz_60Volts_4160 |
| FL Amps 31.5 Frame 5009 SF 1.15 | | _ | Spec | cial Info. M#AEHG-WT002 |
| Last Lubrication – Date | | | | |
| Grease Used - Type 76 POLYTAC-2 | | | | 1 |
| Unusual Noises? No 🖉 Yes 🖬 Action Required | | | | |
| | | | | |
| Unusual Heat Build-up? No 🔏 Yes 🗆 Action Required _ | | | | |
| | | | | |
| Make-up Valve | | | | |
| Other Component | | | | |
| Other Component | | | | |

>Marley*

Cooling Tower Inspection Checklist

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| Tower Location METCALF | Date Inspected 3/26/15 |
|---|---|
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspector |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. <u>F488A-40-10PPWD</u> Serial No. 223647 |
| Process Served by Tower | _ Operation: Continuous 🕰 Intermittent 🛛 Seasonal 🖵 |
| | <u>°C CW 72.1 °F</u> ℃ WB <u>59 °F</u> °C |
| Cell No Number of Fan Cella 10 Tower Type: Cr | rossflow 🛛 Counterflow 🕰 |
| Date Tower was Installed 2005 | · |

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

1 2 3

| | 1 | 2 | 3 | Comments |
|--|-------------------------|---|---|---------------------------------------|
| Structure | | | | |
| Casing Material CORRUGATED | \times | | | |
| Structural Material FIBERGLASS | X | - | | |
| Fan Deck Material FIBERGLASS | * | | | |
| Stairway D Material FIBERGLASS | X | | | |
| Ladder D Material FIBERGLASS | | | | |
| Handrail 🗅 Material FIBERGLASS | X | | | |
| Interior Walkway 🗋 Material | X | | | • |
| Cold Water Basin Material CONCRETE | X | | | |
| Silt, Debris Buildup | $\left \times \right $ | | | |
| Water Distribution System | | | | |
| Open Basin System | · | | | · · · · · · · · · · · · · · · · · · · |
| Distribution Basin Material CONCRETE | \times | | | |
| Inlet Pipe Material CARBON STEEL | X | [| | |
| Inlet Manifold Material FIBERGLASS | X | | | |
| Flow Control Valves BUTTERFLY VALVE Size | | | | |
| Nozzles – Orifice Diameter 3" Size | X | | | |
| Silt, Algae, Debris | \swarrow | | | |
| Spray Type System | | | | |
| Header Pipe Material ABS | X | | | |
| Branch Pipe Material <u>PVC</u> | \times | | | |
| Nozzles – Orifice Diameter <u>3"</u> Size | \times | | | cleand and Repaired 4 |
| Up spray 🖬 🛛 Down spray 🔀 | | | | Nozcies |
| Heat Transfer System | | | | |
| Fill – Type and Material PVC | Ź | | | <u>&</u> |
| Eliminators - Type and Material PVC | X | | _ | |
| Louvers – Type and Material GALV. | \wedge | | | |
| Biological Fouling | $\overline{\mathbf{A}}$ | | | |
| Use this space to list specific items needing attention: | | | | · |

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

9

| | 1 | 2 | 3 | Comments | |
|--|---|----------|--------|---|--|
| echanical Equipment | | | | | |
| Speed Reducer Type: Belt 🛛 Gear 🖾 Direct Drive 🗅 | | | | | |
| Beit Drive Unit | | γ | I | | |
| Belt Designation | - | | | | |
| Fan Sheave Designation | - | | | | |
| Motor Sheave Designation | . L | L | L | <u> </u> | |
| Gear Drive Unit | | | | | |
| Manufacturer MARLEY Model 4000 | Ratio | 15.84 | /1 | | |
| Oil Level: Full 🕰 Add Immediately 🗅 🛛 Low, Check Again | n Soon 🗖 | 1 | | | |
| Oil Condition: Good 🚈 Contains Water 🗆 Contains M | etal 🛛 | Cor | ntains | Sludge 🛛 | |
| Oil Type Used 76 TURBINE 220 | | | | | |
| Seals | . | \times | | | |
| Backlash | - <u>y</u> X | | | | |
| Fan Shaft Endplay | | | | | |
| Unusual Noises? No 😺 Yes 🖬 🛛 Action Required | | | | | |
| Drive Shaft | | | | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | X | | | | |
| Fan | | | | | |
| Fan Type: Propeller 🔊 – Blower 🖸 | | | | | |
| Manufacturer MARLEY Fixed Pitch C Adjustat | le Pitch J | র | | | |
| | | | | | |
| | | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 | | - | | | |
| Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> | 2 | | | | |
| Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> Blade Material <u>FIBERGLASS</u> | x 1 | - | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL | スング | - | | | |
| Diameter <u>384" HP7000-10</u> Number of Blades <u>10</u> Blade Material <u>FIBERGLASS</u> Hub Material <u>CARBON STEEL</u> Hub Cover Material <u>FIBERGLASS</u> | えくへ | - | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S | x 1 6 1 2 | - | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min | x 1 1 1 x x | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearancemm minmm max Vibration Level | ス く く く メ メ メ | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | x 1 x x x x x x | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | <u> </u> | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Yibration Level | えくしん オメイメメ | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | $X \times X$ | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | KVKX **XXXXX | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 Motor | ス し ふ と え え え え え え え え え え え え え え え え え え | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | | | | | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level mm min Fan Cylinder Height 14' Machanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | Phas | | Spee | Hz <u>60</u> Volts <u>416</u> cial Info. M#AEHG-WT002 | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | | | Spec | Hz <u>60</u> Volts <u>4160</u> cial Info, <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | Phas | | Spec | Hz <u>60</u> Volts <u>4160</u> cial Info. <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level mm min Fan Cylinder Height 14' Mechanical Equipment Support GALV. Oil Fill and Drain Line S/S Oil Level Sight Glass | Phas 5 | _ | Spec | cial Info, <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | Phas 5 | _ | Spec | cial Info. <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | Phas 5 | _ | Spec | cial Info, <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | Phas 5 | _ | Spec | cial Info. <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min mm min mm max Vibration Level | Phas 5 | _ | Spec | cial Info, <u>M#AEHG-WT002</u> | |
| Diameter 384" HP7000-10 Number of Blades 10 Blade Material FIBERGLASS Hub Material CARBON STEEL Hub Cover Material FIBERGLASS Blade Assembly Hardware S/S Tip Clearance mm min Vibration Level | Phas 5 | _ | Spec | cial Info, <u>M#AEHG-WT002</u> | |

SPX Cooling Technologies UK Ltd • 3 Knightsbridge Park • Wainwright Road • Worcester WR4 9FA • United Kingdom • 44 1905 750 270

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Cooling Tower Inspection Checklist

Comments

| | Date Inspected 3/2-6/15 |
|--|---|
| Tower Location METCALF | Date Inspected |
| Owner / Company | Inspected by HENRY AVIS |
| Company Contact | Inspector Prov |
| Signature | Signature |
| Owner's Tower Designation | |
| Tower Manufacturer MARLEY | Model No. F488A-40-10PPWD Serial No. 223647 |
| Process Served by Tower | Operation: Continuous 🖬 Intermittent 🖬 Seasonal 🛱 |
| Design Conditions: m ³ /hr <u>133.400 GPM</u> HW <u>89.8 °F</u> | °C CW_72.1 °F °C WB_59 °F°C |
| Ceil No. 10 Number of Fan Celis 10 Tower Type: | Crossilow 🖬 Counterflow 🗳 |
| Date Tower was Installed 2005 | |

This checklist is intended to be used as a guide only. This checklist may not cover all potential issues and should not be relied upon as a substitute for Authorized Service Provider's professional judgment. Authorized Service Provider should report on all issues. Any issues that are identified for which a space is not otherwise provided in the checklist, should be noted in the Other Component sections or in a supplementary document.

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

1 2 3

| Structure | |
|--|--------------------|
| Casing Material CORRUGATED | |
| Structural Material FIBERGLASS | |
| Fan Deck Material FIBERGLASS | |
| Stairway 🛛 Material FIBERGLASS | × × |
| Ladder D Material FIBERGLASS | <u>×</u> |
| Handrail 🗅 Material FIBERGLASS | 2 |
| Interior Walkway 🗆 Material | X |
| Cold Water Basin Material CONCRETE | |
| Silt, Debris Buildup | X |
| | |
| Water Distribution System | |
| Open Basin System | |
| Distribution Basin Material CONCRETE | |
| Inlet Pipe Material CARBON STEEL | × Rust |
| Inlet Manifold Material FIBERGLASS | |
| Flow Control Valves BUTTERFLY VALVE Size | X |
| Nozzles – Orifice Diameter <u>3"</u> Size | × |
| Silt, Algae, Debris | |
| Spray Type System | |
| Header Pipe Material ABS | |
| Branch Pipe Material PVC | |
| Nozzles – Orifice Diameter <u>3"</u> Size | × Cleaned & NOULES |
| Up spray 🚨 🛛 Down spray 🗋 | |
| Heat Transfer System | |
| Fill - Type and Material PVC | × |
| Eliminators - Type and Material PVC | × |
| Louvers – Type and Material GALV. | |
| Biological Fouling | |
| Use this space to list specific items needing attention: | |

0

| | 1 | 2 | 3 | Comme | nts |
|---|--------------------|-------|------|-------------------------|------------|
| Mechanical Equipment | | | | | · |
| Speed Reducer Type: Belt Gear 62 Direct Drive | | | | | |
| Belt Drive Unit | | | | | |
| Belt Designation | | | | | |
| Fan Sheave Designation | | | - | | |
| Motor Sheave Designation | | | | | |
| Gear Drive Unit | | | | | |
| Manufacturer MARLEY Model 4000 | Ratio ¹ | 5.84/ | 1 | | |
| Oil Level: Full 🖾 Add Immediately 🖬 Low, Check Again S | | | | | |
| Oil Condition: Good 25 Contains Water D Contains Met Oil Type Used 76 TURBINE 220 | | Cont | ains | Sludge 🗆 | |
| Seals | 1 | 1 | ~ | | |
| Backlash | | | | | · |
| Fan Shaft Endplay | X | | | | |
| Unusual Noises? No 🖉 Yes 🗆 Action Required | · | | | | |
| Drive Shaft | | | | | |
| Manufacturer ADDAX LRC850.625 Material FIBERGLASS | \times | | | | |
| Fan | | - | | | |
| Fan Type: Propeller A Blower Manufacturer MARLEY Fixed Pitch Adjustable Diameter 384" HP7000-10 Number of Blades 10 | Pitch 🖄 | ζ | | | |
| | | | | ••• • | |
| Blade Material FIBERGLASS | ₩\$ | | | | |
| Hub Material CARBON STEEL Hub Cover Material FIBERGLASS | | | - | | |
| Blade Assembly Hardware S/S | X | | | | |
| | X | | - | | |
| Tip Clearancemm minmm max | X | | | | |
| Vibration Level Fan Cylinder Height | X | | - [| | |
| Mechanical Equipment Support GALV. | X | | | . | |
| | | | | | |
| | | | | | |
| Oil Level Sight Glass Vibration Limit Switch METRIX-M#5550-121-01 | | | | | <u> </u> |
| Motor | <u> </u> | | | | |
| Manufacturer TECO WESTINGHOUSE | | | | | |
| Name Plate Data: kW 250 HP RPM 1780 | Phone | 3 | | Hz <u>60</u> | Volts 4160 |
| FL Amps 31.5 Frame 5009 SF 1.15 | | | | siat Info. M#AEHG-WT002 | voits |
| Last Lubrication – Date | | | oper | aa miy, | |
| Grease Used - Type 76 POLYTAC-2 | | | | | |
| | | | | | |
| | | | | | |
| · | | | | | |
| | | | | | |
| Make-up Valve | | | | | |
| Other Component | | | | | |
| Other Component | | | | | |

Appendix 7

Metcalf Energy Center

Annual Complian

Annual Compliance Report 2014 Water Usage Summary

| Recycled Water | | | | | |
|-------------------------|-------------|--|--|--|--|
| month consumption (gal) | | | | | |
| | | | | | |
| January | 27,672,260 | | | | |
| February | 6,814,280 | | | | |
| March | 46,420,132 | | | | |
| April | 40,514,672 | | | | |
| May | 47,071,640 | | | | |
| June | 35,028,840 | | | | |
| July | 46,168,804 | | | | |
| August | 49,163,048 | | | | |
| September | 48,495,084 | | | | |
| October | 50,605,192 | | | | |
| November | 61,044,280 | | | | |
| December | 67,599,752 | | | | |
| Total | 526,597,984 | | | | |

| Potable Water month consumption (gal) | | | | | | |
|--|------------|--|--|--|--|--|
| | | | | | | |
| January | 4,048,924 | | | | | |
| February | 2,834,920 | | | | | |
| March | 7,439,608 | | | | | |
| April | 7,883,172 | | | | | |
| May | 10,778,680 | | | | | |
| June | 11,312,004 | | | | | |
| July | 8,854,824 | | | | | |
| August | 10,092,764 | | | | | |
| September | 9,940,172 | | | | | |
| October | 7,192,020 | | | | | |
| November | 7,040,924 | | | | | |
| December | 6,034,864 | | | | | |
| Total | 93,452,876 | | | | | |

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Metcalf Energy Center Annual Compliance Report 2014 Water Usage Summary Condition of Certification S&W-1

Recycled Water

| Cooling Tower for Steam Cycle Cooling | 526,597,984 | | | |
|---------------------------------------|-------------|--|--|--|
| Totai Gallons 2014 | 526,597,984 | | | |
| Potable Water | | | | |
| Condenser Make-Up | 33,878,602 | | | |
| Steam Attemperation | 32,042,263 | | | |
| Inlet Air Cooling | 8,691,264 | | | |
| Domestic | 720,680 | | | |
| RO Reject | 14,344,058 | | | |
| Filter Backwash | 2,868,812 | | | |
| CT Wash Water | 462,307 | | | |
| Plant Wash Down | 660,439 | | | |
| Total Gallons 2014 | 93,452,876 | | | |

Appendix 8

METCALF ENERGY CENTER 2014 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 | Туре | Planned . | Actual | | |
|---------------------------|---------------------|---------------------------|---------------------------|--|--|
| Non-hazardous | Recyclables | Recycle (Off-site) | Recycle (Off-site) | | |
| Solid Waste | Non-Recyclables | Landfill | Landfill | | |
| Non-hazardous | Sanitary Waste | Sewage Treatment Plant | Sewage Treatment Plant | | |
| Liquid Waste | 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 | | |
| | Used Oil Filters | Recycle (Off-site) | Recycle (Off-site) | | |
| Hazardous Solid Waste | Oily Rags | Off-site disposal company | Off-site disposal company | | |
| vvasie | Universal Waste | Recycle (Off-site) | Recycle (Off-site) | | |

Appendix 9

submitted



1.

3.

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions \rightarrow

FACILITY IS REQUESTING BREAKDOWN RELIEF (Regulation 1-431 and 1-432) *District Use Only* **BREAKDOWN REFERENCE** #:

2. X MONITOR INDICATES EXCESS EMISSION or EXCURSION (Regulation 1-522.7, 1-523.3, 1-542) District Use Only EXCESS or EXCURSION REFERENCE #:

MONITOR IS INOPERATIVE (Regulation 1-522.4, 1-523.2, 1-530) District Use Only INOPERATIVE MONITOR REFERENCE #:

4. PRESSURE IS RELEASED FROM RELIEF DEVICE (PRD) (Regulation 8-28-401) District Use Only PRD REFERENCE #:

| SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED) | | | | | | | | | | | |
|---|----------------------------------|----------------------------|--------|----------|-------|------------------|-------|----------------|--------------------|---------------|------------------|
| Company | М | ETCALF EN | ERGY | CENTE | R | | Site | Site # B2183 | | | B2183 |
| Address | 11 | BLANCHAR | D ROA | D, COY | OTE | | So | Source # S1 | | | S1 |
| Reported by | R | DSEMARY S | SILVA | | | | Ph | Phone # | | | 408-361-4954 |
| Indicated Excess | 26 | 82.1 LBS O | FCO | | | | Fax | Fax # | | | 408-361-4949 |
| Allowable Limit | 25 | 14 LBS OF | CÔ DU | RING S | TARTU | IP | Ave | Averaging Time | | | 3-HR |
| Start Time/Date | 5/* | 12/14 @ 3:0 | 1AM | | | | Cle | Clear Time | | | 5/12/14 @ 4:17AM |
| Monitor/device type(| s) X | X CEM CEM Parame | | | | metric | | ►PRD | | ► Non-monitor | |
| Monitor description(s) | | | | | | | | | | | |
| Parameter(s) exceed | led or r | not functio | ning d | ue to ii | noper | ation | _ | | | | |
| ► NO _x ► | | | | | | ►NH ₃ | | | | | |
| ► O ₂ ► | H₂O | Opacity ►Lead ►Gauge Press | | | | Pressure | | ►Flow | | | |
| ► Hydrocarbon Breakthrough (VOC) ► Temperature ► Wind Speed | | | | | _ | | | | | | |
| Wind Direction | ind Direction ►Steam ►Other (des | | | | ribe) | | | | | | |
| Unit(s) of Measurement | | | | | | | | | | | |
| ▶ppm ► ► | ppb | ►mi | n/hr > | 20% | | | _ ►in | che | s H ₂ O | | ► mmHg |
| ▶ psig ► ► | рН | Fa ▶⁰Fa | ahrenł | neit | | · · ·]] | X ►O | ther | (describe) L | BS | · · · · |

Event Description:

The CEMS indicated that, on 5/12/14, the CO mass emissions during start-up were exceeded by 168.1 lbs. Investigation is underway.

| Received | by |
|----------|----|

District Use Only

Date

METCALF ENERGY CENTER, LLC

1 Blanchard Rd. Coyote, CA 95013

June 11, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE:

Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06P87

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is intended to satisfy the 30-day follow-up reporting requirement as required by Section I.F of the Title V Permit. The Title V Permit initial 10-day notification for this event was previously submitted to the District on May 14, 2014.

On May 12, 2014 at 02:12, CEMS time, the Facility initiated a hot start on Combustion Turbine #1 (CT-1). CO emissions during the startup were 2682.1 lbs., which exceeded the Title V Permit Condition 21 limit of 2514 lbs/startup by 162.1 lbs (6%).

The startup of CT-1 on May 12, 2014, was initiated after CT-1 and the steam turbine (ST-1) had been shut down for approximately 51 hours. Per the definition of Gas Turbine Cold-Startup period contained in the Title V Permit, a startup at the Facility can only be considered "cold" when the Facility has been shut down for 72 hours. Therefore, this startup was considered a "hot" start, imposing the lower limits allowed for a hot start. The prolonged shut down period, however, resulted in significant cooling of the Steam Turbine. As a result, an extended thermal loading period was necessary to allow the Steam Turbine to heat up within the Original Equipment Manufacturer (OEM) requirements before the CT-1 load could be raised to a level to effectively reduce CO emissions.

Further, the event on May 12, 2014, followed a major outage to perform maintenance required by the OEM. This maintenance led to cooler exhaust, which coupled with the cooling that occurred as a result of the 51-hour down time of the Steam Turbine, led to the exceedance.

In order to avoid this event from occurring again, the Facility has revised the startup procedures to further reduce CO. The Facility has also adjusted the alarm warning set point to give the operator additional time to react in the event that an extended thermal loading period is causing the mass emissions limit to be approached.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

Terry Mahoney Authorized Representative and General Manager Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

| Bay Area AirQ <u>u</u> ality |
|---------------------------------|
| MANAGEMENT District |
| DIJIKICI |

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance

| MANAGEMENT DISTRICT | 06Q02 | | Compliance Activity (RCA) |
|---|--|-----------------------------|--------------------------------|
| | | See back of form | for instructions \rightarrow |
| | S REQUESTING BREAKDOWN RE Ily BREAKDOWN REFERENCE #: | LIEF (Regulation 1-431 | and 1-432) |
| | NDICATES EXCESS EMISSION or by EXCESS or EXCURSION REFE | | -522.7, 1-523.3, 1-542) |
| | S INOPERATIVE (Regulation 1-52) | • • • | |
| | IS RELEASED FROM RELIEF DE Iy PRD REFERENCE #: | VICE (PRD) (Regulatio | n 8-28-401) |
| SITE INF | ORMATION AND DESCRIPTION I | NFORMATION (REQUIR | (ED) |
| Company | METCALF ENERGY CENTER | Site # | B2183 |
| Address | 1 BLANCHARD ROAD, COYOTE | Source # | \$1 |
| Reported by | ROSEMARY SILVA | Phone # | 408-361-4954 |
| Indicated Excess | 5.93 ppm NH3 | Fax # | 408-361-4949 |
| Allowable Limit | 5.00 ppm 3-HR ROLLING AVERAGE | Averaging Time | 3-HR |
| Start Time/Date | 6/1/2014 05:00AM | Clear Time | 6/1/2014 7:00AM |
| Monitor/device type(s) | ►CEM ►GLM X ►P | arametric ►PRD | ►Non-monitor |
| Monitor description(s) | · | | |
| Parameter(s) exceeded | or not functioning due to inoperation | <u> </u> | |
| ► NO _x ► SO | 2 ►CO ►CO2 | ►H ₂ S ►TR | S X ►NH ₃ |
| $\square \triangleright O_2 \square \triangleright H_2 C$ | | ► Gauge Pressure | ►Flow |
| Hydrocarbon Brea | | ature ►Wind Spee | d d |
| ► Wind Direction | ►Steam | ► Other (descr | ibe) |
| Unit(s) of Measurement | | _ | |
| X ▶ppm ▶ppb | | ▶ inches H ₂ O | ►mmHg |
| ▶psig ▶pH | ► ⁰ Fahrenheit | ► Other (describe) | |
| Event Description: Indicated excess of NH3 slip of | concentrations due to NOx inlet analyzer sa | ampling system malfunction. | nvestigation |

underway; preliminary conclusion that NOx sample system developed a leak, resulting in lower inlet NOx concentration and high slip values. Leak believed to now be corrected.

| | District Use Only | | |
|-------------|-------------------|------|--|
| Received by | Date | Time | |

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METCALF ENERGY CENTER, LLC

1 Blanchard Rd. Coyote, CA 95013

July 1, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06Q02

Dear Mr. Kino:

RE:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is intended to satisfy the 30-day follow-up reporting requirement as required by Section I.F of the Title V Permit. The Title V Permit initial 10-day notification for this event was previously submitted to the District on June 2, 2014.

On June 1, 2014, the Facility experienced an indicated excess of the NH3 Slip 3-hour rolling average emission limit of 5 ppm on Combustion Turbine *1, as stated in Condition 20e of the Title V Permit. After reviewing operating data such as the ammonia injection rate, stack and inlet NOx concentrations, and unit megawatt load, it was determined that the NH3 slip data reported from 0500 to 0700 hours was not accurate because the inlet NOx data was unrealistically low. Based on comparable runs, the Facility has concluded that the actual 3-hour average was not exceeded.

The following is a summary of the investigation into the incident upon discovery:

- 0554: The operator noticed an unusually low inlet NO_x value with respect to Combustion Turbine ^{#1}.
- 0558: The operator took manual control of the unit's ammonia injection system in an effort to decrease indicated NH₃ Slip values.
- 0654: The Combustion Turbine #1 CEMS was placed in to maintenance mode and a Technician was called in to the site.
- 0736: Combustion Turbine ^{#1} was taken off-line
- 0921: The Maintenance Technician discovered a cracked, plastic elbow in the sample line for the inlet NO_x analyzer. This crack
 allowed ambient air to contaminate the sample line and resulted in a lower than actual inlet NO_x value. The unrealistically low
 inlet NOx concentrations caused the calculated NH3 slip values to be too high and resulted in the indicated excess.
- 1040: The cracked elbow was replaced and the Combustion Turbine [#]1 analyzers passed calibration.
- 1104: Combustion Turbine [#]1 was back on-line.

In order to prevent this event in the future, the Facility will continue its robust maintenance program with respect to the CEMS and will inspect, and if necessary, replace all similar plastic components in both CEMs sample lines.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

ALA Terry Mahoney

Authorized Representative and General Manager Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

METCALF ENERGY CENTER, LLC

1 Blanchard Rd. Coyote, CA 95013

July 102014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE:

Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Supplemental -Title V Non-Compliance Report – RCA No. 06Q02

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), on July 1, 2014, the Facility previously submitted the 30-day follow-up report for RCA No. 06Q02, as required by Section I.F of the Title V Permit, . This letter is intended to provide supplemental information for this event.

As reported in the 30-day follow-up report, on June 1, 2014, the Facility experienced an indicated excess of the NH3 Slip 3-hour rolling average emission limit of 5 ppm on Combustion Turbine "1. It was concluded, however, that no actual excess occurred and instead, that the NH3 Slip data reported from 0500 to 0700 hours was not accurate because the inlet NOx data was measuring abnormally low.

Based on comparable operational data, the actual inlet NOx concentration during the applicable time period should have been approximately 27.5 ppm compared to the measured values that ranged from 6.4 ppm to 11.7 ppm. The measured values of 6.4 ppm to 11.7 ppm are inconsistent with the operational experience of the Facility and are not realistic values based on historical data for the megawatt load at which the unit was operating. Based on historical runs at the applicable megawatt load, a more typical average SCR NOx value for Combustion Turbine "1 is 27.5 ppm.

Using data substitution, when a more accurate measurement of 27.5 ppm inlet NOx was used to recalculate the NH3 Slip 3-hour rolling average, the value was 2.38 ppm for the 0500 and 0700 hours, instead of the DAHS calculated value of 5.93 ppm. The attached tables include a summary of the inlet NOx and NH3 slip data recorded and calculated by the DAHS, as well as the substituted inlet NOx data and recalculated NH3 slip values based on the foregoing substitution methodology. The recalculated NH3 slip data, which is more representative of the actual emissions than the data initially reported by the DAHS and that was based on erroneous inlet NOx data, indicates that no actual exceedence of the NH3 slip limit occured.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Robert Parker

Vice President Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

| Timestamp | Measured SCR NOx ppm | Substituted/SCR | Measured NH3 ppm @15% O2 1- Hr | Substituted NH3 ppm@15%:02:1= Hr: | Measured NH3 ppm @15% O2 3- Hr Rolling | Substituted INH3ippm @15%@2/3=Hr |
|---------------|-------------------------|-----------------|--------------------------------------|---|--|--|
| 6/1/2014 4:00 | 12.2 | <u> </u> | 2.6 | - | 0.00 | - |
| 6/1/2014 5:00 | 7.1 | 27.5 | 15.2 | 4.55 | 5.93 | 2.38 |
| 6/1/2014 6:00 | 8.5 | 27.5 | 0.0 | 0.00 | 5.93 | 2.38 |

| imestamp | | (Turbine - 1) NOx ppm @15% 02 1- | Updated SCR | (Turbine - 1) SCR NOx ppm | (Turbine - 1) NH3 Slip | (Turbine - 1) NH3 ppm @15% O2 1- | (Turbine - 1) 75- | {Turbine - 1} Total | (Turbine - 1) | (Turbine - 1) NH3 | | دستنا |
|-------------------------|-----|-------------------------------------|--------------|------------------------------|----------------------------|-------------------------------------|-------------------|------------------------------|-----------------|-------------------|---|-------------|
| | Min | Min | NOx ppm | 1-Min | Correction Factor 1-Min | Min | 02% 1-Min | Heat Input mmBtu/hr 1-Min | Megawatts 1-Min | Flow 1-Min Ib/hr | NHS Inlet | NH3 Slip |
| 1/2014 4:55 | 8 | 1.32 | - | 7,8 | 0.84 | 32.53 | 14,04 | 1339.5 | 117.1 | 287.14 | | |
| 1/2014 4:56 | 8 | 1.19 | • | 7.6 | 0.84 | 32.09 | 14.05 | 1339.5 | 117.4 | | | |
| 1/2014 4:57 | 8 | 1.1 | - | 7.5 | 0.84 | 31.59 | 14.06 | 1339.5 | 117.3 | | | 5 |
| 1/2014 4:58 | 8 | 1.04 | - | 73 | 0.84 | 30.8 | 14.05 | 1339.5 | 117.2 | | | |
| 1/2014 4:59 | 8 | 1.02 | + | 7.2 | 0.84 | 30,16 | 14.07 | 1339.5 | 117.4 | | | |
| 1/2014 5:00 | 8 | 1 | 27.5 | 7 | 0.84 | 29.64 | 14.08 | 1339.5 | 117.2 | | | • • • • |
| 1/2014 5:01 | 8 | 1 | 27.5 | 7 | 0.84 | 28.31 | 14.07 | 1350.8 | 117.2 | | 46.6 | 14 |
| 1/2014 5:02 | 8 | 1.01 | 27.5 | 6.9 | 0.84 | 26.84 | 14.05 | 1384.7 | 122.8 | | <u></u> | -13 |
| 1/2014 5:03 | 8 | 1 | 27.5 | 6.8 | 0.84 | 25,15 | 14.05 | 1382.5 | 122.3 | 248.35 | 42.9 | 11 |
| 1/2014 5:04 | 8 | 0.97 | 27.5 | 6.8 | 0.84 | 25.33 | 14.05 | 1390.2 | 122.3 | 234.83 | 418 | 11 |
| 1/2014 5:05 | 5 | 1.03 | 27.5 | 6.8 | 0.84 | 24,46 | 14.02 | 1384.7 | 122.4 | | 40.7 | 10 |
| 1/2014 5:06 | 8 | 1.09 | 27.5 | 6.8 | 0.84 | 23.69 | 14.04 | 1384.7 | 122.5 | 228.13 | 39.5 | 9 |
| 1/2014 5:07 | 3 | 1.13 | 27.5 | | 0.84 | 21.19 | 14.03 | 1384.7 | 122.5 | 221.73 | 38.3 | 8 |
| 1/2014 5:08 | 5 | 1.19 | 27.5 | 5.8 | 0.84 | 17.88 | 14.03 | 1384.7 | | 201.35 | 34.8 | 6 |
| 1/2014 5:09 | 8 | 1.33 | 27.5 | 6.8 | 0.84 | 15.99 | 14.03 | 1402.K 1382.5 | 123.5 | | 302 | ž |
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| 1/2014 5:18 | 8 | 2.9 | 27.5 | 7.8 | 0.84 | 13.6 | 14.03 | 1432.2 | 127.1 | 129.52 | 217 | 2 |
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| 1/2014 5:22 | 8 | 2.69 | 27.5 | 7.5 | 0.45 | 8.89 | 13.99 | 1491.1 1538.6 | 135.6 | 166.83 | 727.0 | - <u>1</u> |
| 1/2014 5:23 | 8 | 2.55 | 27.5 | 7.6 | 0.45 | 9.1 | 13.96 | 1556.6 1574.8 | 140.7 | 175.98 | 275 | j. |
| 1/2014 5:24 | 8 | 2.47 | 27.5 | 75 | 0.45 | 9.29 | 13.96 | | 145.3 | 184.69 | 528.4 | |
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| 1/2014 5:26 | 8 | 2.74 | | 7.4 | 0.45 | 9.71 | 13.83 | | 155.8 | 199.32 | 294 | 11 |
| 1/2014 5:27 | 8 | 2.88 | 175 175 | 7.5 | 0.45 | 10.25 | 13.82 | 1701.5 | 159.5 | 206.56 | 302 | Z |
| 1/2014 5:28 | 5 | 2.71 | 275 | 7.6 | 0.45 | 10.66 | 13.82 | 1703.8 | 159.4 | 216.37 | 314 | ંટ |
| 1/2014 5:29 | 8 | 2.6 | 77.5 | 7.6 | 0.45 | 11.13 | 13.81 | 1699.2 | 159 | 225.37 | 32.81 | 30 |
| 1/2014 5:30 | 8 | 2,49 | 27.5 27.5 | 7.5 | 0.45 | 11.61 | 13.81 | 1690.2 1672.1 | 158.1 155.9 | 233.56 | 342 | 3 |
| 1/2014 5:31 | 8 | 2.35 | 275 | 7.4 | 0.45 | 12.03 | 13.81 | 1647.2 | | 239.99 | 3355 | ં હો |
| 1/2014 5:32 | 8 | 21 | 275 | 7.5 | 0.45 | 12.15 | 13.87 | 1642.7 | 153.5 | 244.81 | 36.6 | |
| 1/2014 5:33 | 8 | 1.93 | 27.5 | 7.4 | 0.45 | 12.15 | 13.87 | 1642.7 | 152.7 | 249.69 | 373 | 4 |
| 1/2014 5:34 | 8 | 1.72 | 27.5 | 7,3 | 0.45 | 12.78 | 13.92 | 1583.8 | 149.8 | 252.52 | 382 | 4 |
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| 1/2014 5:39 | 8 | 1.32 | 27.5 | 6.6 | 0.84 | 25.93 | 14.01 | 1411.9 | 124.7 | 240.07 | 40.9 | 10 |
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| 1/2014 5:44 | 8 | 1.36 | 27.5 | 6.6 | 0.45 | 11.4 | 13.59 | 1543,4 | 141.1 | 225.42 | 351 | ્રં |
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| L/2014 5:48 | S | 1.94 | 27.5 | 6.8 | 0.45 | 7.19 | 13.98 | 1534.1 | 140.4 140.3 | 153.23 | 24.0 | Ū, |
| L/2014 5:4 9 | \$ | 2.22 | 27.5 | 6.9 | 0,45 | 7.13 | 13.98 | 1534.1 | | 147.9 | 23.3 | , Q |
| /2014 5:50 | \$ | 2.44 | 27.5 | 7 | 0.45 | 7.02 | 13.98 | 1534.1 | 140 | 145.42 | 22.9 | 0 |
| /2014 5:51 | 8 | 2.65 | 27.5 | 7.2 | 0.45 | 7.02 | 13.99 | 1531.8 | 140 | 142.48 | 224 | <u> 1</u> |
| /2014 5:52 | 8 | 2.83 | 27.5 | 73 | 0.45 | 6.98 | 13.99 | 1534.1 | 140 | 142.11 | 224 | 0 |

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| 6/1/2014 5:20 | 4 | 5.78 | - | 11.1 | 0.84 | ŏ | 14.5 | | 90.2 | 191.82 | 38.0 | 0.00 |
| 6/1/2014 6:21 | 4 | 3.84 | - | 9.8 | 0.84 | 0 | 15.24 | 1068 1000.1 | 82.7 | 248.17 | 48.8 | 0.00 |
| 6/1/2014 6:22 | 4 | 2.92 | - | 8,4 | 0.84 | 0 | 15.62 | | 74.8 | 282.2 | 55.7 | 0.00 |
| 6/1/2014 6:23 | 4 | 2,43 | - | 7.6 | 0.84 | ŏ | 15.97 | 939 | 66.8 | 301.17 | 59.1 | 0.00 |
| 6/1/2014 6:24 | 4 | 2.47 | | 7.8 | 0.84 | 0 | 16.32 | 885.9 | 58.3 | 312.03 | 60.5 | 0.00 |
| 6/1/2014 6:25 | 4 | 3.22 | - | 6.6 | 0.84 | 0 | 16.52 | 855.3 305.5 | 52.6 | 323.24 | 60.4 | D.00 |
| 6/1/2014 6:26 | 4 | 4,47 | | 6.A | 0.84 | ő | 16.98 | | 43.5 | 335.71 | 62.4 | 0.00 |
| 5/1/2014 5:27 | 4 | 6.33 | | 6.5 | 0.84 | - | | 753.5 | 34.6 | 354.48 | 64.3 | 0.00 |
| 6/1/2014 6:28 | 4 | 9.12 | - | 6.8 | 0.84 | 0 0 | 17.31 | 708.2 | 26.2 | 389.66 | 68.9 | 0.00 |
| 6/1/2014 6:29 | 4 | 13.09 | - | 7.3 | 0.84 | - | 17,68 | 635.8 | 15.9 | 448.72 | 79.3 | 0.00 |
| 6/1/2014 6:30 | 4 | 18.67 | - | 7.3 7.9 | | 0 | 18.15 | 524.9 | 3.9 | 164.97 | 30.1 | 0.00 |
| 6/1/2014 6:31 | 4 | 15.47 | - | 83 | 0.84 | 0 | 18.77 | 527.2 | 0.4 | 0 | 0.0 | 0.00 |
| 6/1/2014 6:32 | 4 | 13.16 | - | | 0.84 | 0 | 18.78 | 538.5 | 0.3 | 0 | 0.0 | 0.00 |
| 6/1/2014 6:33 | 4 | 11.56 | - | 8 | 0.84 | 0 | 18.86 | 545.3 | 0.3 | 0 | 0.0 | 0.00 |
| 6/1/2014 6:34 | 4 | 10.39 | | 7.5 7 | 0.84 | 0 | 18.95 | 552.1 | 0.4 | 0 | 0.0 | 0.00 |
| 6/1/2014 6:35 | 4 | 8.37 <13> | - | / 6.6 <13> | 0.54 | 0 | 19.02 | 540,8 | 0.4 | 0 | 0.0 | 0.00 |
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Faxe :42as

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

| AIRQUALITY MANAGEMENT DISTRICT | COMPLIAN | | NT DIVISION | Reportable Compliance Activity (RCA) |
|---|----------------------------------|--|---|--|
| | | | See back of form | for instructions \rightarrow |
| | | BREAKDOWN RELIËF I REFERENCE #: | (Regulation 1-431 | and 1-432) |
| | | ESS EMISSION or EXC CURSION REFERENC | | -522.7, 1-523.3, 1-542} |
| | | (Regulation 1-522.4, 1- MONITOR REFERENCE | • | |
| | IS RELEASED F ly PRD REFERE | ROM RELIEF DEVICE | (PRD) (Regulatio | n 8-28-401) |
| SITE INF | ORMATION AND | DESCRIPTION INFOR | MATION (REQUIR | RED) |
| Company | METCALF ENERG | | Site # | B2183 |
| Address | 1 BLANCHARD RO | DAD, COYOTE | Source # | S2 |
| Reported by | ROSEMARY SILV | Ą | Phone # | 408-361-4954 |
| Indicated Excess | 2653 lbs. during St | art-up | Fax # | 408-361-4949 |
| Allowable Limit | 2514 lbs. per Start- | -up | Averaging Time | 3-HR |
| Start Time/Date | 11:50 7/22/2014 | | Clear Time | 12:43 7/22/2014 |
| Monitor/device type(s) | ► CEM | ►GLM X ►Parame | etric P RD | ► Non-monitor |
| Monitor description(s) | <u> </u> | | | |
| Parameter(s) exceeded ►NO _x ►SO ₂ ►O ₂ ►H ₂ C ►Hydrocarbon Brea ►Wind Direction | 2 X ►CO | | H₂S □ ►TRS Gauge Pressure ► Wind Spee ► Other (desor | Flow ⊨ |
| Unit(s) of Measurement ▶ppm ▶ppb ▶psig ▶pH | ► min/hr ► ⁰ Fahre | | ▶inches H ₂ O ▶Other (describe) Ib | os ─── ►mmHg |
| Event Description: | | | | |

BAY AREA

During an attempted start-up on Unit 2, we realized that we were unlikely to be able to complete the startup and maintain compliance with the CO mass emissions limit. Therefore, prior to reaching the CO start-up emission limit, a unit shutdown was commenced. Once the shutdown command was initiated, it took the unit 12 minutes before fuel flow ceased. During this run, the unit never reached normal operations and transitioned straight from startup mode to shutdown mode.

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|-------------|--|------|
| | District Use Only | |
| Received by | Date | Time |

1 Blanchard Rd. Coyote, CA 95013

August 8, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE: Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06R33

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is submitted pursuant to Section I.F. of the Title V Permit, which requires submission of a written report within 30 calendar days of the discovery of any instance of potential non-compliance. In an abundance of caution, the Facility previously reported the event described in this report pursuant to the 96-hour and 10-day reporting requirements imposed by its Title V Permit and District rules and, through submission of this report, is seeking the District's concurrence that such an event does not constitute a violation of the Facility's Title V Permit.

On July 22, 2014, during an attempted start-up on Unit 2 that began at 1150 hours, the Facility concluded that it was unlikely to be able to complete the startup and maintain compliance with the CO mass emissions limit of 2,514 pounds (lb.) CO per start-up event contained in Condition #18310, Part 21. Therefore, prior to exceeding this limit, at 1232 hours, the shutdown sequence was commenced for Unit 2. Once the shutdown command was initiated, it took the unit 12 minutes before fuel flow ceased to the unit. During this run, the unit never reached normal operations and transitioned straight from start-up mode to shutdown mode. Mass emissions from the time the unit was started-up until initiation of the shutdown sequence did not exceed the relevant start-up limit. Nor did emissions from the time the shutdown limit of 902 lb. CO.

However, the definitions of start-up and shutdown appearing in the permit do not account for the scenario described above; instead they assume that the unit transitions from start-up mode to normal operations and from normal operations into shutdown mode. "Gas Turbine Start-up Mode" is defined as, "[t]he lesser of the first 180 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive data points in compliance with the emission concentration limits of conditions 20(b) and 20(d)" (NOx and CO). (Cond. #18310, Definitions, Part 20(b) and (d)). Thus, unless and until the CEMS records two consecutive data points in compliance with the NOx and CO concentration limits, the Facility's data acquisition and handling system (DAHS) assumes that the unit remains in start-up mode and records all emissions as such. Likewise, the definition of "Gas Turbine Shutdown Mode" assumes that a shutdown does not commence until non-compliance with the same concentration limits.

Accordingly, in a situation as was experienced on July 22, 2014, the DAHS programming defaulted to an assumption that all the run minutes occurred during start-up mode and that the unit never entered shutdown mode – despite the fact that the shutdown sequence had been commenced and completed. As a consequence, the DAHS over-estimated the total mass emissions for the event and indicated an exceedance of the start-up limit of 2,514 lb CO, even though the total emissions from the time the unit was started-up until the shutdown sequence was initiated remained in compliance. Further, the DAHS underestimated the shutdown emissions (i.e., the DAHS treated some of the shutdown

Mr. Wayne Kino Director, Enforcement and Compliance Division August 1, 2014 Page 2

minutes as start-up minutes), even though the emissions from the time shutdown commenced likewise remained in compliance (below the corresponding shutdown limit of 902 lb. CO per shutdown event). In light of this DAHS indication and in an abundance of caution, the Facility reported an indicated exceedance of the start-up mass emissions limit.

The Facility submits that here the most practical and logical application of the permit terms, and the separate mass emissions limits applicable to each of start-up and shutdown modes, is to conclude that the unit was in start-up mode only until such time as the shutdown sequence was initiated. Thereafter, the unit operated in shutdown mode until cessation of fuel flow (for 12 minutes) and the emissions are properly classified as in "shutdown". As indicated above, when applied in this manner, no exceedance of either the start-up or the shutdown limits occurred. Attached hereto as Appendix 1 is what the errant DAHS report would reflect were the entire event on July 22, 2014 treated as a start-up event. Further, attached hereto as Appendix 2 is an exemplar of what the DAHS report should reflect, given the facts of the event (i.e., representing the commencement of the shutdown sequence).

Accordingly, as a corrective action with respect to this event, the Facility has modified the DAHS process codes for this particular event to accurately reflect the commencement and completion of the shutdown sequence, as is reflected on the attached Appendix 2.

The DAHS process codes will be managed similarly during any future events when the startup and shutdown periods, as defined by the permit, overlap.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

White

Terry Mathoney Authorized Representative and General Manager Metcalf Energy Center, LLC

CC: David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine Region IX, EPA Eric Veerkemp, CEC AQ-36

APPENDIX 1

| Metcalf |
|--|
| San Jose, CA |
| Turbine-2 Hourly Emissions Report |
| July 22, 2014 - Hour 11 |

| NOx ppm @ NOx ib/mmi | 1-Hr Emis 15% O2 - 2.5 * Btu - 0.00904 * | ision Limits NOx Ib | Mhr - 19.2 * | CO pr CO lb | 3-Hr R om @15% O2 - 4 /mmBtu - 0.0088 | | on Limits CO Ib/hr 13 Slip ppm @ | - 18.7 * 215% O2 - 5 * | | · · |
|-------------------------|--|------------------------|----------------------------------|--|---|---|---|---|---|---|
| NOx ppm | NOx ppm @15% O2 | NOx lb/mmBtu | NOx ib/hr | СО ррт | CO ppm @15% O2 | CO Ib/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
| Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | |
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| DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| DCal | DCal | DCal | DCai | DCal | DCal | DCal | DCal | DCal | DCal | Down |
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| DCal | DCal | DCal | DCal | DCal | DCai | DCal | DCal | DCal | DCal | Down |
| DCal | DCal | DCal | DCal | DCal | DCal | | • | | | Down |
| • | | | | | | | | | | Down |
| | | | | | | | | | | Down |
| | | • | | | | | | | 1 | Down Down |
| | DCai DCai DCai | DCal DCal DCal DCal | DCal DCal DCal DCal DCal DCal | DCal DCal DCal DCal DCal DCal DCal DCal | DCal DCal DCal DCal DCal DCal DCal DCal | DCal DCal DCal DCal DCal DCal DCal DCal | DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal DCal | DCai DCai <th< td=""><td>DCal DCal <th< td=""><td>DCal DCal <th< td=""></th<></td></th<></td></th<> | DCal DCal <th< td=""><td>DCal DCal <th< td=""></th<></td></th<> | DCal DCal <th< td=""></th<> |

CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourty Emissions Report

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Page 1 of 2

| Minute | 02% | NOx ppm | NOx ppm @15% O2 | NOx Ib/mmBtu | NOx lb/hr | CO ppm | CO ppm @15% O2 | CO lb/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
|--------------------|-------|---------|--------------------|-----------------|-----------|---------|-------------------|----------------|------------------|-------------------------|---------|-------------------|
| 11:30 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:31 | DCal | DCal | DCai | DCal | DCai | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:32 | ĐCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:33 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:34 | DCal | DCal | DCal | DCal | DCal | DCai | DCal | DCal | DCal | DCal | Down | Down |
| 11:35 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:36 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:37 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:38 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:39 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:40 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:41 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:42 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:43 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:44 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:45 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:46 | Down | Down | Down | Down | Down | Down | Dowm | Down | Down | Down | Down | Down |
| 11:47 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:48 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:49 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:50 | 20.95 | 0.00 | inval | inval | Inval | 0.00 | Inval | Inval | Inval | Down | 0.0 | Hot S/U |
| 11:51 | 20.77 | 0.00 | Invai | inval | Inval | 0.23 | Inval | lnval | inval | Down | 0.4 | Hot S/U |
| 11:52 | 18.21 | 3.33 | 7.30 | 0.02685 | 4.93 | 258,93 | 567.91 | 1.2707 | 233.35 | Down | 1.0 | Hot S/U |
| 11:53 | 18.20 | 4.87 | 10.64 | 0.03912 | 8.60 | 799.88 | 1747.89 | 3.9110 | 860.06 | Down | 1.0 | Hot S/U |
| 11:54 | 18.00 | 5.80 | 11.80 | 0.04338 | 11.41 | 909.07 | 1849.49 | 4.1383 | 1088.29 | Down | 1.1 | Hot S/U |
| 11:55 | 17.99 | 7.33 | 14.86 | 0.05463 | 16.72 | 939.70 | 1905.23 | 4.2630 | 1304.74 | Down | 1.4 | Hot S/U |
| 11:56 | 17.99 | 8.78 | 17.80 | 0.06544 | 24.92 | 960.68 | 1947.77 | .4.3582 | 1659.93 | Down | 1.6 | Hot S/U |
| 11:57 | 17.99 | 9.87 | 20.01 | 0.07356 | 31.85 | 998.72 | 2024.90 | 4.5308 | 1961.91 | Down | 1.8 | Hot S/U |
| 11:58 | 18.15 | 10.39 | 22.29 | 0.08194 | 39.01 | 1103.10 | 2366.65 | 5.2955 | 2521.12 | Down | 2.1 | Hot S/U |
| 11:59 | 18,13 | 11.66 | 24.84 | 0.09129 | 48.01 | 1181.42 | 2516.38 | 5.6305 | 2961.42 | Down | 2.5 | Hot S/U |
| Average | 18.6 | 6.2 | 0.0 * | DCai * | | 715.2 | 1834.6 | 4.1051 | | Down | 1.3 | Hot S/U |
| Total 3-Hr Ring | | | • | | DCal * | | NSD* | Down * | 213.59 Down * | Down* | | |

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* - Excluding Startup and Shutdown

CeDAR Reports 7/23/2014 6:04 AM, Turbine-? Hourly Emissions Report

Page 2 of 2

Metcalf San Jose, CA **Turbine-2 Houriy Emissions Report** July 22, 2014 - Hour 12

| | | | 1-Hr Emis 215% O2 - 2.5* Btu - 0.00904* | sion Limits NOx Ib | /hr - 19.2 * | | 3-Hr R 2m @15% O2 - 4 /mmBtu - 0.0088 | | ion Limits CO Ib/hr - NH3 Slip ppm @ | | | |
|--------|-------|---------|---|-----------------------|------------------|---------|---|----------------|--|-------------------------|------------|-------------------|
| Minute | 02% | NOx ppm | NOx ppm @15% O2 | NOx lb/mmBtu | NOx lb/hr | CO ppm | СО ррт @15% О2 | CO lb/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
| 12:00 | 18.53 | 12.05 | 30.00 | 0.11027 | 60.25 | 1090.65 | 2715.12 | 6.0752 | 3319.31 | Down | 2.4 | Hot S/U |
| 12:01 | 18.62 | 12.74 | 32.97 | 0.12119 | 67.31 | 920.95 | 2383.16 | 5.3324 | 2961.83 | Down | 2.4 | Hot S/U |
| 12:02 | 18.58 | 14.33 | 36.44 | 0.13396 | 74.10 | 953.62 | 2425.15 | 5.4264 | 3001.73 | Down | 3.1 | Hot S/U |
| 12:03 | 18.59 | 15.31 | 39.10 | 0.14374 | 79.19 | 970.00 | 2477.49 | 5.5435 | 3053.92 | Down | 3.5 | Hot S/U |
| 12:04 | 18.59 | 16.02 | 40.92 | 0.15041 | 85.59 | 979.17 | 2500.91 | 5.5959 | 3184.30 | Down | 3.5 3.8 | Hot S/U |
| 12:05 | 18.58 | 16.35 | 41.58 | 0.15285 | 86.63 | 983.12 | 2500.18 | 5.5942 | 3170.63 | Down | 4.2 | Hot S/U |
| 12:06 | 18.52 | 17.00 | 42.14 | 0.15492 | 89.91 | 1034.92 | 2565.56 | 5.7405 | 3331.63 | Down | 4.6 | Hot S/U |
| 12:07 | 18.44 | 17.82 | 42.74 | 0.15711 | 92.96 | 1102.98 | 2645.36 | 5.9191 | 3502.41 | Down | 5.1 | Hot S/U |
| 12:08 | 18.37 | 18.66 | 43.52 | 0.15996 | · 96.83 | 1180.75 | 2753.53 | 6.1611 | 3729.39 | Down | 5.6 | Hot S/U |
| 12:09 | 18.29 | 19.37 | 43.79 | 0.16096 | 98,89 | 1248.33 | 2821.90 | 6.3141 | 3879,28 | Down | 6.2 | Hot S/U |
| 12:10 | 18.22 | 20.15 | 44,36 | 0.16307 | 102.04 | 1316.02 | 2897.21 | 6.4826 | 4056.25 | Down | 6.7 | Hot S/U |
| 12:11 | 18.14 | 20.86 | 44.59 | 0.16392 | 104.43 | 1381.48 | 2953.16 | 6.6078 | 4209.53 | Down | 7.2 | Hot S/U |
| 12:12 | 18.06 | 21.50 | 44.67 | 0.16419 | 106.83 | 1445.60 | 3003.18 | 6.7197 | 4372.21 | Down | 7.7 | |
| 12:13 | 17.98 | 22.18 | 44.82 | 0.16474 | 109.43 | 1518.15 | 3067.49 | 6.8636 | 4559.18 | Down | 8.3 | Hot S/U |
| 12:14 | 17.89 | 22.48 | 44.06 | 0.16198 | 109.80 | 1593.92 | 3124,29 | 6.9907 | 4559.18 | Down . | | Hot S/U |
| 12:15 | 17.80 | 22.82 | 43.43 | 0.15965 | 110.03 | 1660.08 | 3159.51 | 7.0695 | 4872.27 | | 8.9 | Hot S/U |
| 12:16 | 17.71 | 23.13 | 42.78 | 0.15726 | 110.88 | 1710.28 | 3153.51 | 7.0778 | 4990.32 | Down | 9.3 | Hot S/U |
| 12:17 | 17.63 | 23.27 | 41.99 | 0.15434 | 110.57 | 1755.00 | 3166.51 | | | Down | 9.8 | Hot S/U |
| 12:18 | 17.55 | 23,40 | 41.21 | 0.15149 | 110.57 | 1780.80 | 3136.33 | 7.0852 | 5075.82 | Down | 10.1 | Hot S/U/ |
| 12:19 | 17.46 | 23.56 | 40.41 | 0.14854 | | | | 7.0177 | 5122.91 | Down | 10.1 | Hot S/Ur |
| 12:20 | 17.37 | 23.50 | 39,56 | 0.146543 | 110.46 109.79 | 1785.70 | 3062.68 | 6.8529 | 5095.87 | Down | 10.0 | Hot S/U |
| 12:21 | 17.28 | 23.80 | 38.79 | 0.14545 | | 1777.23 | 2970.44 | 6.6465 | 5017.70 | Down | 9.8 | Hot S/U |
| 12:22 | 17.20 | 23.00 | 37.84 | | 109.26 | 1749.15 | 2850.83 | 6.3788 | 4887.94 | Down | 9.5 | Hot S/U* |
| 12:23 | 17.11 | | | 0.13910 | 108.48 | 1715.75 | 2735.93 | 6.1217 | 4774.19 | Down | 9,1 | Hot S/U- |
| 12:23 | • | 23.57 | 36.69 | 0.13488 | 106.72 | 1670.07 | 2599.85 | 5.8173 | 4602.71 | Down | 8.7 | Hot S/U* |
| 12:24 | 17.02 | 23.26 | 35.37 | 0.13002 | 104.35 | 1614.47 | 2454.99 | 5.4931 | 4408.49 | Down | 8.3 | Hot S/U- |
| | 16.93 | 23.06 | 34.27 | 0.12598 | 102.53 | 1557.40 | 2314.52 | 5.1788 | 4214.93 | Down | 8.1 | Hot S/U |
| 12:26 | 16.84 | 23.39 | 33.99 | 0.12495 | 103.11 - | 1501.35 | 2181.77 | 4.8818 | 4028.57 | Down | 7.9 | Hot SAJ - |
| 12:27 | 16.75 | 23.80 | 33.84 | 0.12438 | 103.49 | 1416.55 | 2013.89 | 4.5062 | 3749.26 | Down | 7.9 | Hot S/U~ |
| 12:28 | 16.66 | 24.03 | 33.44 | 0.12292 | 103.94 | 1301.07 | 1810.45 | 4.0510 | 3425.62 | Down | 8.0 | Hot S/U 🗸 |
| 12:29 | 16.62 | 23.36 | 32.20 | 0.11837 | 101.97 | 1247.53 | 1719.73 | 3.8480 | 3315.02 | Down | 8.1 | Hot S/U < |

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CeDAR Reports 7/23/2014 6:04 AM, Turbine-2 Hourly Emissions Report

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Page 1 of 2

| Minute , | 02% | NOx ррлл | NOx ppm @15% O2 | NOx ib/mmBtu | NOx (b/hr | CO ppm | CO ppm @15% O2 | CO lb/mmBtu | CO [.] ib/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
|------------------|-------|----------|--------------------|-----------------|-----------|---------|-------------------|----------------|-----------------------|-------------------------|---------------------------------------|-------------------|
| 12:30 | 16.47 | 22.78 | 30.34 | 0.11152 | 96.83 | 1371.12 | 1826.10 | 4.0860 | 3547.85 | Down | | |
| 12:31 | 16.44 | 22.18 | 29.34 | 0.10786 | 90.96 | 1147.82 | 1518.42 | 3.3975 | 2865.29 | Down | 8.1 | Hot S/U |
| 12:32 | 16.71 | 20.01 | 28.18 | 0.10358 | 82.42 | 1265,45 | 1781.90 | 3.9871 | 3172.74 | Down | 8.1 | Hot S/⊍ ✓ |
| 12:33 | 17.04 | 17.89 | 27.34 | 0.10052 | 74.29 | 1124.62 | 1718.98 | 3.8463 | 2842.68 | Down | 8.2 8.1 | Hot S/U / |
| 12:34 | 17.41 | 16.71 | 28.25 | 0.10384 | 71.33 | 1054.90 | 1783.36 | 3.9903 | 2741.04 | Down | | Hot S/U |
| 12:35 | 17.76 | 15.49 | 29.11 | 0.10699 | 67.19 | 967.02 | 1817.01 | 4.0656 | 2553.13 | Down | 8.5 8.5 | Hot S/U - |
| 12:36 | 18.11 | 13.65 | 28.87 | 0.10611 | 61.34 | 683.55 | 1445.50 | 3.2344 | 1869.85 | Down | 8.0 | Hot S/U |
| 12:37 | 18.48 | 11.16 | 27.21 | 0.10002 | 52.61 | 409.95 | 999.46 | 2.2363 | 1176.20 | Down | 7.0 | Hot S/U- |
| 12:38 | 18.71 | 9.00 | 24.25 | 0.08913 | 47.49 | 221.68 | 597.22 | 1,3363 | 711.94 | Down | 6.6 | Hot S/U |
| 12:39 | 18.78 | 8.96 | 24.94 | 0.09166 | 49.46 | 188.55 | 524.74 | 1.1741 | 633,51 | Down | 6.4 | Hot S/U- |
| 12:40 | 18.85 | 9.08 | 26.13 | 0.09606 | 52.92 | 173.93 | 500.58 | 1.1201 | 617.06 | Down | 6.4 6.4 | Hot S/U - |
| 12:41 | 18.91 | 8.94 | 26.51 | 0.09743 | 54.34 | 165.83 | 491.66 | 1.1001 | 613.53 | Down | · · · · · · · · · · · · · · · · · · · | Hot S/U |
| 12:42 | 18.96 | 8.86 | 26.95 | 0.09905 | 52.99 | 162.30 | 493.59 | 1.1044 | 590.89 | Down | 6.4 | Hot S/U - |
| 12:43 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | 6.6 Down | Hot S/U 🗸 |
| 12:44 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:45 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | | Down |
| 12:46 | Down | Dewn | Down | Down | Down | Down | Down | Down | Down | Down | Down Down | Down |
| 12:47 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | | Down |
| 12:48 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:49 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:50 | Down | . Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:51 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:52 | Down | Down | Down | Down | Down | Down | Down | Down | Down | | Down | Down |
| 12:53 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:54 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:55 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:56 | Down | Down | Down | Down | Down | Down | Down | Down | - | Down | Down | Down |
| 12:57 | Down | Down | Down | Down | Down | Down | Down | Down. | Down | Down | Down | Down |
| 12:58 | Down | Down | Down | Down | Down | Down | | | Down | Down | Down | Down |
| 12:59 | Down | Down | Down | Down | Down | Down | Down Down | Down Down | Down Down | Down Down | Down Down | Down Down |
| verage | 17.8 | 18.7 | 0.0 * | Down * | | 1183.7 | 2252.8 | 5.0408 | | Down | 7,2 | Hot S/U |
| Total Hr Ring | | | | | Down* | | NSD * | Down* | 2451,99 Down * | Down* | f.£ | notoro |

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* - Excluding Startup and Shutdown

CeDAR Reports 7/23/2014 6:04 AM, Turbine-2 Hourly Emissions Report

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Page 2 of 2

VPPENDIX 2

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REVISED REPORT

Metcaif San Jose, CA **Turbine-2 Hourly Emissions Report** July 22, 2014 - Hour 11

| | | | 1-Hr Emis 15% O2 - 2.5 * Btu - 0.00904 * | ssion Limits NOx lb | ion Limits NOx lb/hr - 19.2 * | | 3-Hr Rolling Emiss CO ppm @15% O2 - 4 * CO lb/mmBtu - 0.0088 * | | | - 18.7 * 215% O2 - 5 * | | |
|---------|------|---------|--|------------------------|----------------------------------|--------|--|----------------|----------|---------------------------|---------|-------------------|
| Minute | 02% | NOx ppm | NOx ppm @15% O2 | NOx Ib/mmBtu | NOx Ib/hr | CO ppm | CO ppm @15% Q2 | CO Ib/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
| 11:00 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:01 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:02 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:03 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | . Down |
| 11:04 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:05 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:06 | Доwл | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:07 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:08 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:09 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:10 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Доми | Down |
| 11:11 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:12 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:13 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:14 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| 11:15 | DCal | DCal | DCai | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| 11:16 | DCal | DCal | DCai | DCal | DCal | DCal | DCai · | DCal | DCal | DCal | DCal | Down |
| 11:17 | DCal | DCal | DCal | DCai | DCal | DCal | DCai | DCal | DCal | DCal | DCal | Down |
| 11:18 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCai | DCal | DCal | DCal | Down |
| 11:19 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCai · | | DCal | DCal | Down |
| 11:20 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| 11:21 | DCai | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| 11:22 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCai | |
| 11:23 | DCal | DCal | DCal | DCal | DCal | DÇal | DCal | DCal | DCal | DCal | DCal | Down |
| 11:24 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| 11:25 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down Down |
| 11:26 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down |
| · 11:27 | DCal | DCal | DCal | DCai | DCal | DCal | DCal | DCal | DCal | DCal | DCal | |
| 11:28 | DCai | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | | Down |
| 11:29 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | | Down | Down |
| 1 | L . | | • | | | | Dual | 17Gall | ucai | DCal | Down | Down |

CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourty Emissions Report

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Page 1 of 2

| Minute | 02% | NOx ppm | NOx ppm @15% O2 | NOx Ib/mmBtu | NOx lb/hr | CO ppm | CO ppm @15% O2 | CO lb/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
|------------------|--------|---------|--------------------|-----------------|-----------|---------|-------------------|----------------|------------------|-------------------------|---------|--------------------|
| 11:30 | DCal | DCal | DCal | DCal | DCal | DCai | DCal | DCal | DCal | DCal | Down | Down |
| 11:31 | DCal | DCal | DCai | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:32 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCai | Down | Down |
| 11:33 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:34 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:35 | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:36 | DCal | DCal | DCal | DCai | DCal | DCal | DCal | DCal | DCal | DCal | Down | Down |
| 11:37 . | DCal | DCal | DCai | DCai | DCal | DCai | DCal | DCai | DCal | DCal | Down | Down |
| 11:38 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:39 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:40 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:41 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:42 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:43 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:44 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:45 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:46 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:47 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:48 | Down | ' Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:49 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 11:50 | 20.95 | 0.00 | Inval | Inval | inval | 0.00 | Inval | Inval | Invat | Down | 0.0 | Hot S/U |
| 11:51 | 20.77 | 0.00 | Inval | Invai | Inval | 0.23 | Inval | Inval | Invai | Down | 0.4 | Hot S/U |
| 11:52 | 18.21 | 3.33 | 7.30 | 0.02685 | 4.93 | 258.93 | 567.91 | 1.2707 | 233.35 | Down | 1.0 | Hot S/U |
| 11:53 | 18.20 | 4.87 | 10.64 | 0.03912 | 8.60 | 799.88 | 1747.89 | 3,9110 | 860.06 | Down | 1.0 | Hot S/U |
| 11:54 | 18.00 | 5.80 | 11.80 | 0.04338 | 11.41 | 909.07 | 1849.49 | 4.1383 | 1088.29 | Down | 1.1 | Hot S/U |
| 11:55 | 17.99 | 7.33 | 14.86 | 0.05463 | 16.72 | 939.70 | 1905.23 | 4.2630 | 1304.74 | Down | 1.4 | Hot S/U |
| 11:56 | 17.99 | 8.78 | 17.80 | 0.06544 | 24.92 | 960.68 | 1947.77 | 4.3582 | 1659.93 | Down | 1.6 | Hot S/U |
| 11:57 | .17.99 | 9.87 | 20.01 | 0.07356 | 31.85 | 998.72 | 2024.90 | 4.5308 | 1961.91 | Down | 1.8 | Hot S/U |
| 11:58 | 18.15 | 10.39 | 22.29 | 0.08194 | 39.01 | 1103.10 | 2366.65 | 5.2955 | 2521.12 | Down | 2,1 | Hot S/U |
| 11:59 | 18.13 | 11.66 | 24.84 | 0.09129 | 48.01. | 1181.42 | 2516.38 | 5.6305 | 2961.42 | Down | 2.1 | Hot S/U Hot S/U |
| Average Total | 18.6 | 6.2 | 0.0 * | DCal * | | 715.2 | 1834.6 | 4.1051 | | Down | 1,3 | Hot S/U |
| 3-Hr Ring | | | | | DCal * | | NSD* | Down* | 213.59 Down * | Down * | | |

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* - Excluding Startup and Shutdown

CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourly Emissions Report

Page 2 of 2

Metcalf San Jose, CA Turbine-2 Hourly Emissions Report July 22, 2014 - Hour 12

| | | NOx ppm @ | 15% 02-2.5* | sion Limits NOx Ib | sion Limits NOx Ib/hr - 19.2 * | | 3-Hr R 0m @15% O2 - 4 | Iolling Emissi | on Limits CO (b/hr - | 49.7 * | | |
|--------|-------|-----------|--------------------|-----------------------|-----------------------------------|--------------------|--------------------------|----------------|-------------------------|-------------------------|------------------------|--------------------|
| | | NOx ib/mm | Btu - 0.00904 * | | ······ | CO 16 | /mmBtu - 0.0086 | | H3 Slip ppm @ | | | |
| Minute | 02% | NOx ppm | NOx ppm @15% O2 | NOx Ib/mmBtu | NOx ib/hr | CO ppm | СО ррт @15% О2 | CO lb/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
| 12:00 | 18.53 | 12.05 | 30.00 | 0.11027 | 60.25 | 1090.65 | 2715.12 | 6.0752 | 3319.31 | Down | 2.4 | Het C/l 1 |
| 12:01 | 18.62 | 12.74 | 32.97 | 0.12119 | 67.31 | 920.95 | 2383.16 | 5.3324 | 2961.83 | Down | 2. 4 2.6 | Hot S/U Hot S/U |
| 12:02 | 18.58 | 14.33 | 36.44 | 0.13396 | 74.10 | 953.62 | 2425.15 | 5.4264 | 3001.73 | Down | 2.0 3.1 | Hot S/U |
| 12:03 | 18.59 | 15.31 | 39.10 | 0.14374 | 79.19 | 970.00 | 2477.49 | 5.5435 | 3053.92 | Down | 3.5 | Hot S/U |
| 12:04 | 18.59 | 16.02 | 40.92 | 0.15041 | 85.59 | 979.17 | 2500.91 | 5.5959 | 3184.30 | Down | 3.8 | Hot S/U Hot S/U |
| 12:05 | 18.58 | 16.35 | 41.58 | 0.15285 | 86.63 | 983.12 | 2500.18 | 5.5942 | 3170.63 | Down | 4.2 | Hot S/U |
| 12:06 | 18.52 | 17.00 | 42.14 | 0.15492 | 89.91 | 1034.92 | 2565.56 | 5.7405 | 3331.63 | Down | 4.6 | Hot S/U |
| 12:07 | 18.44 | 17.82 | 42.74 | 0.15711 | 92.96 | 1102.98 | 2645.36 | 5,9191 | 3502.41 | Down | 5.1 | Hot S/U |
| 12:08 | 18.37 | 18.66 | 43.52 | 0.15996 | 96.83 | 1180.75 | 2753.53 | 6.1611 | 3729.39 | Down | 5.6 | Hot S/U |
| 12:09 | 18.29 | 19.37 | 43.79 | 0.16096 | 98.89 | 1248.33 | 2821.90 | 6.3141 | 3879.28 | Down | 5.8 6.2 | Hot S/U |
| 12:10 | 18.22 | 20.15 | 44.36 | 0.16307 | 102.04 | 1316.02 | 2897.21 | 6.4826 | 4056,25 | Down | 6.7 | Hot S/U |
| 12;11 | 18.14 | 20.86 | 44.59 | 0.16392 | 104.43 | 1381.48 | 2953.16 | 6.6078 | 4209.53 | Down | 7.2 | Hot S/U |
| 12:12 | 18.06 | 21.50 | 44.67 | 0.16419 | 106.83 | 1445.60 | 3003.18 | 6.7197 | 4372.21 | Down | 7.7 | Hot S/U |
| 12:13 | 17.98 | 22.18 | 44.82 | 0.16474 | 109.43 | 1518.15 | 3067.49 | 6.8636 | 4559.18 | Down | 8.3 | Hot S/U |
| 12:14 | 17.89 | 22.48 | 44.06 | 0.16198 | 109.80 | 1593.92 | 3124.29 | 6.9907 | 4738.69 | Down | 8.9 | Hot S/U |
| 12:15 | 17.80 | 22.82 | 43.43 | 0.15965 | 110.03 | 1660.08 | 3159.51 | 7.0695 | 4872.27 | Down | 9.3 | Hot S/U |
| 12:16 | 17.71 | 23.13 | 42.78 | 0.15726 | 110.88 | 1710.28 | 3163,21 | 7.0778 | 4990.32 | Down | 9.8 | Hot S/U |
| 12:17 | 17.63 | 23.27 | 41.99 | 0:15434 | 110.57 | 1755.00 | 3166.51 | 7.0852 | 5075.82 | Down | 9.8 10.1 | Hot S/U |
| 12:18 | 17.55 | 23,40 | 41.21 | 0.15149 | 110.59 | 1780.80 | 3136.33 | 7.0177 | 5122.91 | Down | 10.1 | Hot S/U |
| 12:19 | 17.46 | 23.56 | 40.41 | 0.14854 | 110.46 | 1785.70 | 3062.68 | 6.8529 | 5095.87 | Down | 10.1 | Hot S/U Hot S/U |
| 12:20 | 17.37 | 23.67 | 39.56 | 0.14543 | 109.79 | 1777.23 | 2970.44 | 6.6465 | 5017.70 | Down | 10.0 9.8 | Hot SAU Hot S/U |
| 12:21 | 17.28 | 23.80 | 38.79 | 0.14259 | 109.26 | 1749.15 | 2850,83 | 6.3788 | 4887.94 | Down | 9.8 9.5 | |
| 12:22 | 17.20 | 23.73 | 37.84 | 0.13910 | .108.48 | 1715.75 | 2735.93 | 6.1217 | 4007.94 | | 9.5 9.1 | Hot S/U |
| 12:23 | 17.11 | 23,57 | 36.69 | 0.13488 | 106.72 | 1670.07 | 2599.85 | 5.8173 | 4602.71 | , Down | | Hot S/U |
| 12:24 | 17.02 | 23.26 | 35.37 | 0.13002 | 104.35 | 1614.47 | 2555.05 | 5.6173 | | , Down | 8.7 | Hot S/U |
| 12:25 | 16.93 | 23.06 | 34.27 | 0.12598 | 104.55 | | | | 4408.49 | Down | 8.3 | Hot S/U |
| 12:26 | 16.84 | 23.39 | 33.99 | 0.12595 | 102.55 | 1557.40 1501.35 | 2314.52 2181.77 | 5.1788 | 4214.93 | Down | 8.1 | Hot S/U |
| 12:27 | 16.75 | 23.80 | 33.84 | 0.12495 | 103.49 | | | 4.8818 | 4028.57 | Down | 7.9 | Hot S/U |
| 12:28 | 16.66 | 23.00 | · 33.44 | 0.12438 | 103.49 | 1416.55 | 2013.89 | 4.5062 | 3749.26 | Down | .7.9 | Hot S/U |
| 12:29 | 16.62 | 23.36 | 33.44 | 0.12292 | | 1301.07 | 1810.45 | 4.0510 | 3425.62 | Down | 8.0 | Hot S/U |
| · | | 20.00 | 32.20 | 0.11637 | 101.97 | 1247.53 | 1719.73 | 3.8480 | 3315.02 | Down | 8.1 | Hot S/U |

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CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourly Emissions Report

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Page 1 of 2

| Minute | 02% | NOx ppm | NOx ppm @15% O2 | NOx Ib/mmBtu | NOx lb/hr | CO ppm | CO ppm @15% O2 | CO lb/mmBtu | CO lb/hr | NH3 ppm Slip @15% O2 | SCR NOx | Process Status |
|------------------|-------|-------------------|--------------------|-----------------|-----------|---------|-------------------|----------------|-------------------|-------------------------|---------|-------------------|
| 12:30 | 16.47 | 22.78 | 30.34 | 0.11152 | 96.83 | 1371.12 | 1826.10 | 4.0860 | 3547.85 | Down | | Hot S/U |
| 12:31 | 16.44 | 22.18 | 29.34 | 0.10786 | 90.96 | 1147.82 | 1518.42 | 3.3975 | 2865,29 | Down | 8.1 | Hot S/U |
| 12:32 | 16.71 | 20.01 | 28.18 | 0.10358 | 82.42 | 1265.45 | 1781.90 | 3.9871 | 3172.74 | Down | 8.2 | Shutdown |
| 12:33 | 17.04 | 17.8 9 | 27.34 | 0.10052 | 74.29 | 1124.62 | 1718.98 | 3.8463 | 2842.68 | Down | 8.1 | Shutdown |
| 12:34 | 17.41 | 16.71 | 28.25 | 0.10384 | 71.33 | 1054.90 | 1783.36 | 3.9903 | 2741.04 | Down | 8.5 | Shutdown |
| 12:35 | 17.76 | 15.49 | 29.11 | 0.10699 | · 67.19 | 967.02 | 1817.01 | 4.0656 | 2553,13 | Down | 8.5 | Shutdown |
| 12:36 | 18.11 | 13.65 | 28.87 | 0.10611 | 61.34 | 683.55 | 1445.50 | 3.2344 | 1869.85 | Down | 8.0 | Shutdown |
| 12:37 | 18.48 | 11.16 | 27.21 | 0.10002 | 52.61 | 409.95 | 999.46 | 2.2363 | 1176.20 | Down | 7.0 | Shutdown |
| 12:38 | 18.71 | 9.00 | 24.25 | 0.08913 | 47.49 | 221.68 | 597.22 | 1.3363 | 711.94 | Down | 6.6 | Shutdown |
| 12:39 | 18.78 | 8.96 | 24.94 | 0.09166 | 49.46 | 188.55 | 524.74 | 1.1741 | 633.51 | Down | . 6.4 | Shutdown |
| 12:40 | 18.85 | 9.08 | 26.13 | 0.09606 | 52.92 | 173.93 | 500.58 | 1.1201 | 617.06 | Down | 6.4 | Shutdown |
| 12:41 | 18.91 | 8.94 | 26.51 | 0.09743 | 54.34 | 165,83 | 491.66 | 1.1001 | 613.53 | Down | 6.4 | Shutdown |
| 12:42 | 18.96 | 8.86 | 26.95 | 0.09905 | 52.99 | 162,30 | 493.59 | 1.1044 | 590.89 | Down | 6.6 | - Shutdown |
| 12:43 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Shutdowr |
| 12:44 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:45 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | . Down |
| 12:46 | Down | Down | Down | Down | .Down | Down | Down | Down | Down | Down | Down | Down |
| 12:47 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:48 | Down | Down | Down | Down | Down | Down | Down | Down · | Down | Down | Down | 1 |
| 12:49 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:50 | Down | Down | Đown | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:51 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | | Down |
| 12:52 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:53 | Down | Down | Down | Down | Down | Down | Down | Down | Down | | Down | Down |
| 12:54 | Down | Down | Down | Down | Down | Down | Down | Down | | Down | Down | Down |
| 12:55 | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:56 | Down | Down | Down | Down . | Down | Down | Down | | Down | Down | Down | . Down |
| 12:57 | Down | Down | Down | Down | | | | Down | Down | Down | Down | Down |
| 12:58 | Down | Down | Down | | Down | Down | Down | Down | Down | Down | Down | Down |
| 12:59 | Down | Down | | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| . 2.00 | | DOWN | Down | Down | Down | Down | Down | Down | Down | Down | Down | Down |
| Average Total | 17.8 | 18.7 | 0.0 * | Down * | Down * | 1183.7 | 2252.8 | 5.0408 | 2454.00 | Down | 7.2 | Hot S/U |
| 3-Hr Ring | · . | | | | LOWII | | NSD * | Down* | 2451.99 Down * | Down.* | | |

- Excluding Startup and Shutdown

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CeDAR Reports 7/25/2014 11:18 AM, Turbine-2 Hourly Emissions Report

Page 2 of 2

| | | Faxe | 1509 70 70 |
|---|--|--|---|
| BAY AREA AIRQUALITY MANAGEMENT DISTRICT | COMPLIANCE & ENFORCEMEN RCA NO DGREG | | Notification Form Reportable Compliance Activity (RCA) |
| · . | | See back of form t | or instructions \rightarrow |
| | S REQUESTING BREAKDOWN RELIEF (//y BREAKDOWN REFERENCE #: | (Regulation 1-431 | and 1-432) |
| | NDICATES EXCESS EMISSION or EXCU | | 522.7, 1-523.3, 1-542) |
| | S INOPERATIVE (Regulation 1-522.4, 1- ly INOPERATIVE MONITOR REFERENC | | |
| | IS RELEASED FROM RELIEF DEVICE (<i>ly</i> PRD REFERENCE #: | (PRD) (Regulation | n 8-28-401) |
| SITE INF | ORMATION AND DESCRIPTION INFORM | MATION (REQUIR | ED) |
| Company | METCALF ENERGY CENTER | Site # | B2183 |
| Address | 1 BLANCHARD ROAD, COYOTE | Source # | S2 |
| Reported by | ROSEMARY SILVA | Phone # | 408-361-4954 |
| Indicated Excess | 2.6 NOx ppm and 0.0094 lb./mmBTU | Fax # | 408-361-4949 |
| Allowable Limit | 2.5 NOx ppm and 0.00904 lb./mmBTU 8/7/2014 12:00pm | Averaging Time | 1-HR |
| Start Time/Date Monitor/device type(s) | X CEM CLM Parame | Clear Time tric ►PRD | 1:00pm |
| Monitor description(s) | | | ► Non-monitor |
| | D D Dpacity D Lead D ► Akthrough (VOC) D Temperature ► Steam | H ₂ S ► TRS Gauge Pressure ► Wind Speer X ► Other (descrit | ►Flow |
| X ▶ppm ▶ppb ▶psig ▶pH | → min/hr > 20% | ▶inches H₂O ▶Other (describe) Ib | ►mmHg ./mmBTU |
| Event Description: The DAHS indicated that, on limits were exceeded. Investig | 8/7/2014 from 1200-1300 CEMS time, the NOx ppn gation is underway. | n and NOx lb. /mmBTl | J one-hour emissions |

| | District Us | e Only | | |
|-------------|-------------|--------|------|--|
| Received by | | Date | Time | |

1 Blanchard Rd. Coyote, CA 95013

September 5, 2014

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE: Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report – RCA No. 06R50

Dear Mr. Kino:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center (the "Facility"), this letter is intended to satisfy the 30-day follow-up reporting requirement as required by Section I.F of the Title V Permit. The Title V Permit initial 10-day notification for this event was previously submitted to the District on August 8, 2014.

On August 7, 2014, Combustion Turbine #2 experienced an indicated excess of the NO_x 1-hour rolling average emission limit of 2.5 ppm and the NOx lb./mmBTU 1-hour rolling average emission limit of 0.00904, as stated in Condition 20a of the Title V Permit. At 1119 hours (CEMS time), Unit 2 began a daily calibration. However, during the calibration the NOx inlet analyzer pump failed and caused the calibration to fail. The CEMS was placed into maintenance to replace the failed pump at 1137 hours and remained in maintenance until 1221 hours, at which time a manual calibration was performed. The CEMS returned to normal operations at 1245 hours and was well in compliance with permit limits until 1247 hours. As the emissions control system attempted to balance itself after coming out of maintenance, the emissions increased above permit limits from 1247 to 1254 hours before finally stabilizing in compliance at 1255 hours. As presented in Table I, the CEMS was in operation for a total of 15 minutes during hour 1200, and the reported NOx emissions were 2.6 ppm and 0.0094 lb./MMBtu.

During normal CEMS operation periods, the NOx emissions are managed by adjusting the ammonia flow based on the NOx emission concentration exiting the stack. However, during CEMS maintenance periods, when the NOx emissions are not known, the ammonia flow is controlled by a predictive methodology that is based on the combustion turbine fuel valve position. This predictive methodology helps ensure that the NOx emissions do not spike if the unit load changes substantially during the CEMS maintenance period.

During the event on August 7, 2014, the emissions control system took several minutes to stabilize the NOx emissions after coming out of CEMS maintenance. During the last few minutes of the system's calibration, the unit load, and correspondingly the heat input, was decreasing. As designed, the predictive control system began to decrease ammonia injection. Then, immediately after the CEMS completed calibration, unit load and heat input began to ramp up. Because the ammonia valve had already received a signal to decrease flow, the system took several minutes to adjust and to begin increasing ammonia flow in accordance with the load change. This period resulted in eight minutes of higher than 2.5 ppm NOx emissions.

The predictive methodology worked as designed during the event, however, because the hour only consisted of 15 data points, the few minutes of high emissions data resulted in an indicated excess emissions event that was not accurately representative of an average for the entire hour. Had the hourly average emissions been calculated for the entire hour (as opposed to only 15 minutes of data), based on data substitution for a similar operating hour, the average emissions for hour 1200 would have been 1.9 ppm and 0.00697 lb/MMBiu – well within the permit limits as presented in Table 2. Based on inlet NOx, heat input and ammonia flow, the NOx emissions during hour 1000 on April 14, 2014 were used to substitute stack NOx data for the periods of maintenance and calibration observed on August 7, 2014 during hour 1200. As presented in the attached Table 2, the average NOx emissions are substituted for the maintenance and calibration periods during hour 1200 on August 7, 2014, the average NOx emissions are actually 1.9 ppm and 0.00616 lb./mmBTU, which are below the permit limits.

In sum, the fifteen data points collected during the event do not provide an accurate assessment of the hourly emissions during hour 1200 on August 7, 2014. This is further supported by the Federal CEMS regulations contained in 40 CFR Parts 60 and 75, which require the collection of a minimum of 2 data points separated by at least 15 minutes in time to validate a clock hour of data. For example, had the CEMS been in operation for only one more minute during the subject hour 1200 and included the value of 0.71 ppm and 0.00261 lb./mmBTU (note these values were taken from the first data point in the following 1300 hour), the hourly average as calculated by the

Mr. Wayne Kino Director, Enforcement and Compliance Division September 2, 2014 Page 2

DAHS would have been 2.4 ppm and 0.00897 lb./mmBTU, in compliance with the permit limits. By utilizing data substitution during the hour 1200 maintenance period, the facility has demonstrated that the actual NOx emissions during hour 1200 were well below the 2.5-ppm and 0.0094 lb./mmBTU permit limit, and that no actual excess emissions occurred.

To help ensure that indicated excess emissions do not occur during similar operating scenarios in the future, the facility is in the process of further tuning the predictive NOx control methodology, so that emissions remain more stable when the system is transitioning between the predictive and normal NOx control methodologies.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

my Mhan

Terry Mahoney Authorized Representative and General Manager Metcalf Energy Center, LLC

Attachments

CC: Bruce Carlson, Calpine David Williams, Calpine Barbara McBride, Calpine Katherine Piper, Calpine

| | (Turbine - 2) Process | | (Turbine - 2) Normal | SURED DATA | (Turbine - 2) Total | ······ | ana manganan na <u>ma</u> |
|----------------|-----------------------|----------------|----------------------|------------------------------------|---------------------|----------------------------------|------------------------------------|
| limestamp | Code 1-Min | ppm @15% O2 1- | Ops NOx lb/mmBtu | (Turbine - 2) SCR NOx ppm 1-Min | Heat Input | (Turbine - 2) Megawatts 1-Min | (Turbine - 2) Ni Flow 1-Min lb/ |
| 2/7/2014 12:00 | | Min | 1-Min | | mmBtu/hr 1-Min | | |
| 3/7/2014 12:00 | 8 | | MAINT | MAINT | 1629.3 | 147 | 220.4 |
| 3/7/2014 12:01 | 8 | | MAINT | MAINT | 1622.4 | 146.7 | 216. |
| 3/7/2014 12:02 | 8 | MAINT | MAINT | MAINT | 1622.4 | 146.7 | 217.3 |
| 3/7/2014 12:03 | 8 | MAINT | MAINT | MAINT | 1624.7 | 146.5 | 216. |
| 3/7/2014 12:04 | 8 | MAINT | MAINT | MAINT | 1624.7 | 146.5 | 216. |
| 3/7/2014 12:05 | 8 | MAINT | MAINT | MAINT | 1627 | 146.7 | 216. |
| /7/2014 12:06 | 8 | MAINT | MAINT | MAINT | 1624.7 | 146.7 | 216. |
| /7/2014 12:07 | 8 | MAINT | MAINT | MAINT | 1640.8 | 148.8 | 216. |
| /7/2014 12:08 | 8 | MAINT | MAINT | MAINT | 1686.6 | 153.5 | 223. |
| /7/2014 12:09 | 8 | MAINT | MAINT | MAINT | 1730.2 | 158.3 | 233. |
| /7/2014 12:10 | 8 | MAINT | MAINT | MAINT | 1750.8 | 160.6 | 240. |
| /7/2014 12:11 | 8 | MAINT | MAINT | MAINT | 1759.9 | 161.4 | 246 |
| /7/2014 12:12 | 8 | MAINT | MAINT | MAINT | 1759.9 | 161.5 | 246. |
| /7/2014 12:13 | 8 | MAINT | MAINT | MAINT | 1759.9 | 161.2 | 246. |
| /7/2014 12:14 | 8 | MAINT | MAINT | MAINT | 1755.4 | 160.8 | 247.1 |
| /7/2014 12:15 | 8 | MAINT | MAINT | MAINT | 1750.8 | 160.1 | 245. |
| /7/2014 12:16 | 8 | MAINT | MAINT | MAINT | 1716.4 | 156.6 | 244. |
| /7/2014 12:17 | 8 | MAINT | MAINT | MAINT | 1670.6 | 151.2 | 239. |
| /7/2014 12:18 | 8 | MAINT | MAINT | MAINT | 1636.2 | 148.8 | 229. |
| /7/2014 12:19 | 8 | MAINT | MAINT | MAINT | 1640.8 | 148.7 | 222. |
| /7/2014 12:20 | 8 | MAINT | MAINT | MAINT | 1638.5 | 148.7 | 220.0 |
| /7/2014 12:21 | 8 | MAINT | MAINT | MAINT | 1640.8 | 148.8 | 218.0 |
| /7/2014 12:22 | 8 | CAL | CAL | CAL | 1640.8 | 148.0 | 218. |
| /7/2014 12:23 | 8 | CAL | CAL | CAL | 1640.8 | 149.1 | 218.2 |
| 7/2014 12:24 | 8 | CAL | CAL | CAL | 1640.8 | 149.3 | |
| /7/2014 12:25 | 8 | CAL | CAL | CAL | 1645.4 | 149.5 | 217. |
| 7/2014 12:26 | 8 | CAL | CAL | CAL | 1647.6 | | 217.3 |
| 7/2014 12:27 | - 8 | CAL | CAL | CAL | 1645.4 | 149.4 | 217.0 |
| 7/2014 12:28 | 8 | CAL | CAL | CAL | 1656.8 | 149.2 | 218.5 |
| 7/2014 12:29 | 8 | CAL | CAL | CAL | 1702.6 | <u>151.1</u> | 221.6 |
| 7/2014 12:30 | 8 | CAL | CAL | CAL | 1702.8 | 155.5 | 229.9 |
| 7/2014 12:31 | 8 | CAL | CAL | CAL | | 159.2 | 237.6 |
| 7/2014 12:32 | 8 | CAL | CAL | CAL | 1741.6 | 159.7 | 241.7 |
| 7/2014 12:33 | 8 | CAL | CAL | | 1746.2 | 159.7 | 244.3 |
| 7/2014 12:34 | 8 | CAL | CAL | CAL | 1748.5 | 159.8 | 245. |
| 7/2014 12:35 | 8 | CAL | | | 1727.9 | 157.6 | 243.9 |
| 7/2014 12:36 | | | CAL | 20.9 | 1700.4 | 155.2 | 240.6 |
| 7/2014 12:38 | 8 | CAL | CAL | 20.9 | 1695.8 | 154.5 | 238.6 |
| 7/2014 12:38 | 8 | CAL | CAL | 21.3 | 1691.2 | 154.6 | 237.5 |
| | 8 | CAL | CAL | 20.3 | 1688.9 | 154.1 | 238.7 |
| 7/2014 12:39 | 8 | CAL | CAL | 20.8 | 1688.9 | 153.7 | 237.8 |
| 7/2014 12:40 | 8 | CAL | CAL | 21.2 | 1686.6 | 154.2 | 237.3 |
| 7/2014 12:41 | 8 | CAL | CAL | 21.2 | 1686.6 | 153.8 | 237.8 |
| 7/2014 12:42 | 8 | CAL | CAL | 20.9 | 1688.9 | 153.8 | 236.6 |
| 7/2014 12:43 | 8 | CAL | CAL | 21 | 1672.9 | 152 | 236.5 |
| 7/2014 12:44 | 8 | CAL | CAL | 20.9 | 1652.2 | 150.1 | 230.9 |
| 7/2014 12:45 | 8 | 1.60 | 0.0059 | 21.1 | 1684.3 | 153.9 | 201.4 |
| 7/2014 12:46 | 8 | 1.86 | 0.0068 | 21.4 | 1718.7 | 157.6 | 160.8 |
| 7/2014 12:47 | 8 | 2.64 | 0.0097 | 22 | 1730.2 | 158 | 151. |
| 7/2014 12:48 | 8 | 3.36 | 0.0124 | 22.3 | 1730.2 | 158.1 | 152.0 |
| 7/2014 12:49 | 8 | 3.64 | 0.0134 | 21.5 | 1725.6 | 158.2 | 157.2 |
| 7/2014 12:50 | 8 | 3.65 | 0.0134 | 21.6 | 1723.3 | 157.6 | 165.1 |
| 7/2014 12:51 | 8 | 3.70 | 0.0136 | 21.7 | 1739.3 | 159.2 | 175.6 |
| 7/2014 12:52 | 8 | 3.65 | 0.0134 | 21.9 | 1759,9 | 161.2 | 209.3 |
| 7/2014 12:53 | 8 | 3.46 | 0.0127 | 22,2 | 1764.5 | 161.5 | |
| 7/2014 12:54 | 8 | 2.84 | 0.0104 | 22.5 | 1766.8 | 161.5 | 250.4 |
| 7/2014 12:55 | 8 | 2.19 | 0.0080 | 22.9 | 1764.5 | | 285.20 |
| 7/2014 12:56 | 8 | 1.86 | 0.0069 | 22.3 | | 161.6 | 291.4 |
| 7/2014 12:57 | 8 | 1.80 | 0.0055 | | 1764.5 1764 5 | 161.9 | 304.48 |
| 7/2014 12:58 | 8 | 1.49 | | 22.4 | 1764.5 | 161.9 | 316.34 |
| | 8 | 1.32 | 0.0048 | 22.8 | 1741.6 | 159.1 | 318.44 |
| 7/2014 12:59 | | | 0.0040 | 20.8 | 1663.7 | 150.6 | 330.91 |

| | | | able 2: CeDAR 1-Mir | nute Data | | | |
|------------------------------------|--|--|---|------------------------------------|---|----------------------------------|---------------------------------------|
| Timestamp | (Turbine - 2) Process Code 1-Min | (Turbine - 2) NOx ppm @15% O2 1- Min | (Turbine - 2) Normal Ops NOx lb/mmBtu 1-Min | (Turbine - 2) SCR NOx ppm 1-Min | (Turbine - 2) Total Heat Input mmBtu/hr 1-Min | (Turbine - 2) Megawatts 1-Min | (Turbine - 2) NH3 Flow 1-Min lb/hr |
| 4/14/2014 10:00 | 8 | 1.89 | 0.0069 | 24.5 | 1613 | 146.8 | 197.78 |
| 4/14/2014 10:01 | 8 | 2.06 | 0.0076 | 25.2 | 1660.8 | 151.6 | 205.15 |
| 4/14/2014 10:02 | 8 | 2.17 | 0.008 | 25.4 | 1704.1 | 157 | 214.94 |
| 4/14/2014 10:03 | 8 | 1.79 | 0.0066 | 23.5 | 1708.7 | 157.6 | 218.21 |
| 4/14/2014 10:04 | 8 | 1.34 | 0.0049 | 22 | 1692.7 | 155.6 | 210.47 |
| 4/14/2014 10:05 | 8 | 1.42 | 0.0052 | 23.7 | 1676.8 | 153.8 | 205.2 |
| 4/14/2014 10:06 | 8 | 1.76 | 0.0065 | 25.6 | 1663.1 | 151.7 | 207.07 |
| 4/14/2014 10:07 | 8 | 1.91 | 0.007 | 26 | 1640.3 | 149.4 | 213.27 |
| 4/14/2014 10:08 | 8 | 1.89 | 0.0069 | 26 | 1617.5 | 146.3 | 215.31 |
| 4/14/2014 10:09 4/14/2014 10:10 | 8 8 | 1.82 | 0.0067 | 25.8 | 1585.6 | 143 | 217.44 |
| 4/14/2014 10:10 | 8 | 1.69 1.63 | 0.0062 | 25.8 | 1556 | 139.5 | 216.77 |
| 4/14/2014 10:12 | 8 | 1.59 | 0.006 0.0058 | 25.8 | 1531 | 136.1 | 214.64 |
| 4/14/2014 10:13 | 8 | 1.55 | 0.0055 | 25.8 25.4 | 1503.6 1528.7 | 133.4 | 212.56 |
| 4/14/2014 10:14 | 8 | 1.52 | 0.0056 | 25.4 | 1528.7 | 136.5 140.9 | 209.42 |
| 4/14/2014 10:15 | 8 | 1.56 | 0.0057 | 25.1 | 1603.9 | 145.5 | 209.08 209.1 |
| 4/14/2014 10:16 | 8 | 1.64 | 0.006 | 25.1 | 1647.2 | 145.5 | 209.1 |
| 4/14/2014 10:17 | 8 | 1.79 | 0.0066 | 25.7 | 1688.2 | 156.2 | 209.7 |
| 4/14/2014 10:18 | 8 | 1.71 | 0.0063 | 24.6 | 1690.4 | 155.2 | 215.79 |
| 4/14/2014 10:19 | 8 | 1.65 | 0.006 | 24.4 | 1688.2 | 154.8 | 213.3 |
| 4/14/2014 10:20 | 8 | 1.61 | 0.0059 | 24.4 | 1681.3 | 154.1 | 209.01 |
| 4/14/2014 10:21 | 8 | 1.73 | 0.0064 | 25.3 | 1676.8 | 15 3.1 | 208.46 |
| 4/14/2014 10:22 | 8 | 1.81 | 0.0066 | 25.4 | 1667.7 | 152.2 | 210.72 |
| 4/14/2014 10:23 | 8 | 1.82 | 0.0067 | 25.8 | 1667.7 | 152.3 | 213.39 |
| 4/14/2014 10:24 | 8 | 1.86 | 0.0068 | 25.8 | 1672.2 | 152.5 | 216.11 |
| 4/14/2014 10:25 | 8 | 1.8 | 0.0066 | 25.8 | 1676.8 | 153 | 218.19 |
| 4/14/2014 10:26 | 8 | 1.81 | 0.0067 | 25.3 | 1681.3 | 153.4 | 218.93 |
| 4/14/2014 10:27 | 8 | 1.73 | 0.0064 | 25.8 | 1685.9 | 154.2 | 219.38 |
| 4/14/2014 10:28 | 8 | 1.75 | 0.0064 | 25.7 | 1683.6 | 154.1 | 219.4 |
| 4/14/2014 10:29 4/14/2014 10:30 | 8 | 1.71 | 0.0063 | 25.6 | 1683.6 | 153.9 | 218.73 |
| 4/14/2014 10:30 | 8 8 | 1.68 1.68 | 0.0062 | 25.4 | 1683.6 | 153.8 | 219.08 |
| 4/14/2014 10:32 | 8 | 1.08 | 0.0062 0.0065 | 25.6 | 1683.6 | 154 | 219.73 |
| 4/14/2014 10:33 | 8 | 1.70 | 0.0062 | 26 25.5 | 1683.6 | 153.9 | 219.95 |
| 4/14/2014 10:34 | 8 | 1.67 | 0.0062 | 25.3 | 1683.6 1681.3 | 153.6 153.3 | 221.52 |
| 4/14/2014 10:35 | - 8 | 1.59 | 0.0059 | 25.4 | 1679.1 | 153.5 | 221.17 218.39 |
| 4/14/2014 10:36 | 8 | 1.6 | 0.0059 | 25.5 | 1679.1 | 153.5 | 218.59 |
| 4/14/2014 10:37 | 8 | 1.72 | 0.0063 | 25.7 | 1679.1 | 153.4 | 217.4 |
| 4/14/2014 10:38 | 8 | 1.72 | 0.0063 | 25.7 | 1679.1 | 153.4 | 217.62 |
| 4/14/2014 10:39 | 8 | 1.74 | 0.0064 | 25.2 | 1679.1 | 153.4 | 218.94 |
| 4/14/2014 10:40 | 8 | 1.72 | 0.0063 | 25.4 | 1681.3 | 153.3 | 217.38 |
| 4/14/2014 10:41 | 8 | 1.8 | 0.0066 | 25.6 | 1681.3 | 153.5 | 217.91 |
| 4/14/2014 10:42 | 8 | 1.73 | 0.0064 | 24.9 | 1683.6 | 153.9 | 218.12 |
| 4/14/2014 10:43 | 8 | 1.66 | 0.0061 | 24.9 | 1708.7 | 157.3 | 217.88 |
| 4/14/2014 10:44 | 8 | 1.53 | 0.0056 | 23.4 | 1742.8 | 161.3 | 215.54 |
| 4/14/2014 10:45 | 8 | 1.36 | 0.005 | 22 | 1779.3 | 165.2 | 207.15 |
| 4/14/2014 10:46 | 8 | 1.32 | 0.0049 | 21.6 | 1829.4 | 170.4 | 200.34 |
| 4/14/2014 10:47 | 8 | 1.57 | 0.0058 | 22.9 | 1856.8 | 173.2 | 199.78 |
| 4/14/2014 10:48 4/14/2014 10:49 | 8 | 2.25 | 0.0083 | 25.8 | 1865.9 | 173.9 | 209.19 |
| 4/14/2014 10:49 | 8 8 | 2.66 | 0.0098 | 26.9 | 1861.3 | 173.4 | 222.69 |
| 4/14/2014 10:51 | 8 | 2.6 2.16 | 0.0095 0.0079 | 26.5 25.3 | 1852.2 | 172.4 | 236.47 |
| 4/14/2014 10:52 | 8 | 1.81 | 0.0067 | 25.3 24.8 | 1843.1 1849.9 | 171.5 | 239.69 |
| 4/14/2014 10:53 | 8 | 1.65 | 0.0061 | 24.8 | 1849.9 | 172.4 | 236.48 |
| 4/14/2014 10:54 | 8 | 1.05 | 0.0045 | 24.1 20.1 | 1829.4 1811.2 | 170.5 | 236.03 |
| 4/14/2014 10:55 | 8 | 0.8 | 0.0029 | 19.1 | 1811.2 | 168.8 167.7 | 225.3 |
| 4/14/2014 10:56 | 8 | 0.8 | 0.003 | 18.7 | 1790.7 | 166.8 | 203.93 189.56 |
| 4/14/2014 10:57 | 8 | 0.86 | 0.0032 | 18.5 | 1783.8 | 165.8 | 178.58 |
| 4/14/2014 10:58 | 8 | 1.02 | 0.0037 | 18.9 | 1751.9 | 162.7 | 169.08 |
| 4/14/2014 10:59 | 8 | 1.23 | 0.0045 | 19.3 | 1706.4 | 157 | 162.04 |
| | | 1.7 | 0.00616 | 24.5 | 1697.7 | 155.7 | 212.9 |
| | | | | | | | · ; |

| 1000 - 00 - 00 - 00 - 00 - 00 - 00 - 00 | | | (Turbine - 2) Normal | | | | |
|---|-----------------------|-----------------------|----------------------|-----------------------|---------------------|-----------------|------------|
| limestamp | (Turbine - 2) Process | (Turbine - 2) NOx ppm | Ops NOx lb/mmBtu | (Turbine - 2) SCR NOx | (Turbine - 2) Total | (Turbine - 2) | (Turbine - |
| meatump | Code 1-Min | @15% O2 1-Min | | ppm 1-Min | Heat Input | Megawatts 1-Min | NH3 Flow 1 |
| 8/7/2014 12:00 | 8 | 1.7 | 1-Min 0.00616 | BAAINT | mmBtu/hr 1-Min | - | lb/hr |
| 8/7/2014 12:01 | 8 | 1.7 | | MAINT | 1629.3 | 147 | 22 |
| 3/7/2014 12:02 | 8 | 1.7 | 0.00616 | MAINT | 1622.4 | 146.7 | 2: |
| 3/7/2014 12:02 | 8 | 1.7 | 0.00616 0.00616 | MAINT | 1622.4 | 146.7 | 2: |
| 3/7/2014 12:03 | 8 | 1.7 | | MAINT | 1624.7 | 146.5 | 2: |
| 3/7/2014 12:04 | 8 | 1.7 | 0.00616 0.00616 | MAINT | 1624.7 | 146.5 | 2: |
| 3/7/2014 12:05 | 8 | | | MAINT | 1627 | 146.7 | 2: |
| 3/7/2014 12:00 | 8 | 1.7 | 0.00616 | MAINT | 1624.7 | 146.7 | 2: |
| 3/7/2014 12:08 | 8 | 1.7 | 0.00616 | MAINT | 1640.8 | 148.8 | 2: |
| 3/7/2014 12:08 3/7/2014 12:09 | | 1.7 | 0.00616 | MAINT | 1686.6 | 153.5 | 22 |
| 3/7/2014 12:09 3/7/2014 12:10 | 8 | 1.7 | 0.00616 | MAINT | 1730.2 | 158.3 | 2 |
| 5/7/2014 12:10 5/7/2014 12:11 | | 1.7 | 0.00616 | MAINT | 1750.8 | 160.6 | 24 |
| 7/2014 12:11 | 8 | 1.7 | 0.00616 | MAINT | 1759.9 | 161.4 | 2 |
| | 8 | 1.7 | 0.00616 | MAINT | 1759.9 | 161.5 | 24 |
| /7/2014 12:13 | 8 | 1.7 | 0.00616 | MAINT | 1759.9 | 161.2 | 24 |
| /7/2014 12:14 | 8 | 1.7 | 0.00616 | MAINT | 1755.4 | 160.8 | 24 |
| /7/2014 12:15 | 8 | 1.7 | 0.00616 | MAINT | 1750.8 | 160.1 | 24 |
| /7/2014 12:16 | 8 | 1.7 | 0.00616 | MAINT | 1716.4 | 156.6 | 24 |
| /7/2014 12:17 | 8 | 1.7 | 0.00616 | MAINT | 1670.6 | 151.2 | 23 |
| /7/2014 12:18 | 8 | 1.7 | 0.00616 | MAINT | 1636.2 | 148.8 | 22 |
| /7/2014 12:19 | 8 | 1.7 | 0.00616 | MAINT | 1640.8 | 148.7 | 22 |
| /7/2014 12:20 | 8 | 1.7 | 0.00616 | MAINT | 1638.5 | 148.7 | 22 |
| /7/2014 12:21 | 8 | 1.7 | 0.00616 | MAINT | 1640.8 | 148.8 | 21 |
| /7/2014 12:22 | 8 | 1.7 | 0.00616 | CAL | 1640.8 | 149 | 21 |
| /7/2014 12:23 | 8 | 1.7 | 0.00616 | CAL | 1640.8 | 149.1 | 21 |
| /7/2014 12:24 | 8 | 1.7 | 0.00616 | CAL | 1640.8 | 149.3 | 21 |
| /7/2014 12:25 | 8 | 1.7 | 0.00616 | CAL | 1645.4 | 149.6 | 21 |
| /7/2014 12:26 | 8 | 1.7 · | 0.00616 | CAL | 1647.6 | 149.4 | 21 |
| 7/2014 12:27 | 8 | 1.7 | 0.00616 | CAL | 1645.4 | 149.2 | 21 |
| /7/2014 12:28 | 8 | 1.7 | 0.00616 | CAL | 1656.8 | 151,1 | 22 |
| /7/2014 12:29 | 8 | 1.7 | 0.00616 | CAL | 1702.6 | 155.5 | 22 |
| /7/2014 12:30 | 8 | 1.7 | 0.00616 | CAL | 1737 | 159.2 | 23 |
| /7/2014 12:31 | 8 | 1.7 | 0.00616 | CAL | 1741.6 | 159.7 | 24: |
| 7/2014 12:32 | 8 | 1.7 | 0.00616 | CAL | 1746.2 | 159.7 | 24 |
| 7/2014 12:33 | 8 | 1.7 | 0.00616 | CAL | 1748.5 | 159.8 | 24 |
| 7/2014 12:34 | 8 | 1.7 | 0.00616 | CAL | 1727.9 | 157.6 | 243 |
| 7/2014 12:35 | 8 | 1.7 | 0.00616 | 20.9 | 1700.4 | 155.2 | 240 |
| 7/2014 12:36 | 8 | 1.7 | 0.00616 | 20.9 | 1695.8 | 154.5 | 23 |
| 7/2014 12:37 | 8 | 1.7 | 0.00616 | 21.3 | 1691.2 | 154.6 | 237 |
| 7/2014 12:38 | 8 | 1.7 | 0.00616 | 20.3 | 1688.9 | 154.1 | 238 |
| 7/2014 12:39 | 8 | 1.7 | 0.00616 | 20.8 | 1688.9 | 153.7 | 237 |
| 7/2014 12:40 | 8 | 1.7 | 0.00616 | 21.2 | 1686.6 | 154.2 | 237 |
| 7/2014 12:41 | 8 | 1.7 | 0.00616 | 21.2 | 1686.6 | 153.8 | 237 |
| 7/2014 12:42 | 8 | 1.7 | 0.00516 | 20.9 | 1688.9 | 153.8 | 236 |
| 7/2014 12:43 | 8 | 1.7 | 0.00616 | 21 | 1672.9 | 155.0 | 236 |
| 7/2014 12:44 | 8 | 1.7 | 0.00616 | 20.9 | 1652.2 | 150.1 | 230 |
| 7/2014 12:45 | 8 | 1.6 | 0.0059 | 21.1 | 1684.3 | 153.9 | 201 |
| 7/2014 12:46 | 8 | 1.86 | 0.0068 | 21.4 | 1718.7 | 155.5 | 160 |
| 7/2014 12:47 | 8 | 2.64 | 0.0097 | 22 | 1730.2 | 158 | 15 |
| 7/2014 12:48 | 8 | 3.36 | 0.0124 | 22.3 | 1730.2 | 158.1 | 152 |
| 7/2014 12:49 | 8 | 3.64 | 0.0124 | 22.5 | 1725.6 | 158.2 | |
| 7/2014 12:50 | 8 | 3.65 | 0.0134 | 21.5 | 1723.3 | 158.2 | 157 165 |
| 7/2014 12:51 | 8 | 3.7 | 0.0136 | 21.0 | 1739.3 | 157.6 | |
| 7/2014 12:52 | 8 | 3.65 | 0.0130 | 21.7 | 1759.9 | | 175 |
| 7/2014 12:52 | 8 | 3.46 | 0.0134 | | | 161.2 | 209 |
| 7/2014 12:53 | 8 | 2.84 | 0.0127 | 22.2 | 1764.5 | 161.5 | 250 |
| 7/2014 12:54 7/2014 12:55 | | | | 22.5 | 1766.8 | 161.5 | 285 |
| | 8 | 2.19 | 0.008 | 22.9 | 1764.5 | 161.6 | 291 |
| 7/2014 12:56 | 8 | 1.86 | 0.0069 | 22.3 | 1764.5 | 161.9 | 304 |
| 7/2014 12:57 | 8 | 1.49 | 0.0055 | 22.4 | 1764.5 | 161.9 | 316 |
| 7/2014 12:58 | 8 | 1.32 | 0.0048 | 22.8 | 1741.6 | 159.1 | 318 |
| 7/2014 12:59 | 8 | 1.1 | 0.004 | 20.8 | 1663.7 | 150.6 | 330. |

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COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

| MANAGEMENT DISTRICT | BD#06T000 E | E# 06T001 | Compliance Activity (RCA) |
|---|---|--------------------------|--------------------------------|
| | | See back of form | for instructions \rightarrow |
| | REQUESTING BREAKDOW! | | 1 and 1-432) |
| | NDICATES EXCESS EMISSIO IY EXCESS or EXCURSION R | | 1-522.7, 1-523.3, 1-542) |
| | S INOPERATIVE (Regulation by INOPERATIVE MONITOR R | | |
| | IS RELEASED FROM RELIEF by PRD REFERENCE #: | DEVICE (PRD) (Regulation | on 8-28-401) |
| SITE INF | ORMATION AND DESCRIPTION | ON INFORMATION (REQUI | RED) |
| Company | METCALF ENERGY CENTER | Site # | B2183 |
| Address | 1 BLANCHARD ROAD, COYOTE | Source # | S1 |
| Reported by | ROSEMARY SILVA | Phone # | 408-361-4954 |
| Indicated Excess | 14.23 NH3 Slip ppm @ 15% O2 | Fax # | 408-361-4949 |
| Allowable Limit | 5 NH3 Slip ppm @ 15% O2 | Averaging Time | 3-HR |
| Start Time/Date | 12/30/2014 23:00 | Clear Time | 23:59 |
| Monitor/device type(s) | ►CEM ►GLM X | ► Parametric ► PRD | ► Non-monitor |
| Monitor description(s) | | | |
| | or not functioning due to inoper | | |
| | | | |
| $\square \triangleright O_2 \square \triangleright H_2 ($ | | | ► Flow |
| ► Hydrocarbon Brea ► Wind Direction | ktnrougn (VOC) | am ► Wind Spee | |
| Unit(s) of Measurement | ► Stea | | nbe) |
| X ▶ppm ▶ppb | ▶min/hr > 20% | ►inches H ₂ O | ►mm <u>Hg</u> |
| ▶ psig ▶ pH | ► ⁰ Fahrenheit | ► Other (describe) | |

Event Description:

The DAHS indicated that, on 12/30/2014 from 2300-2359, the NH3 Slip ppm @ 15% O2 three-hour emission limit was exceeded due to a breakdown of the SCR NOx pump. Investigation is underway.

| | District Use Only | | |
|-------------|-------------------|------|--|
| Received by | Date | Time | |

1 Blanchard Rd. Coyote, CA 95013

January 28, 2015

MAIL STOP: RCA 30-DAY REPORT Compliance and Enforcement Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

Mr. Wayne Kino (wkino@baaqmd.gov) Director, Enforcement and Compliance Division Bay Area Air Quality Management District 939 Ellis Street San Francisco, CA 94109

RE: Metcalf Energy Center, LLC Permit No. B2183 Major Facility Review Permit (Title V Permit) 30-Day Title V Non-Compliance Report and Breakdown Report – RCA Nos. 06T00 and 06T01

To Whom It May Concern:

In accordance with the Major Facility Review Permit (Title V Permit) for the Metcalf Energy Center, LLC (the "Facility"), this letter is satisfies the 30-day follow-up reporting requirements required by Section I.F of the Title V Permit as well as Regulation 1-432 for Breakdown Requests. The breakdown report and the Title V Permit 10-day deviation notification were submitted to the District on December 31, 2014.

On December 30, 2014 during the 2300 hour, Combustion Turbine #1 experienced an indicated excess of the NH3 Slip 3-hour rolling average emission limit of 5 ppm, as stated in Condition 20e of the Title V Permit. The ammonia slip data recorded during this period was not representative of actual emissions, and the actual 3-hour rolling average ammonia slip emissions were within the permit limit.

At 22:48 the SCR NOx ppm values dropped to zero. The SCR NOx concentration is used to calculate NH3 Slip value. Therefore, when the SCR NOx emissions, which typically range from 26 ppm to 33 ppm during normal operations, were recorded as zero, the calculated ammonia slip concentrations dramatically increased. The initial reported SCR NOx and ammonia slip emissions are presented in Table 1.

Troubleshooting on the SCR NOx analyzer began immediately after the operator received a high ammonia slip alarm at 22:48 and determined that the analyzer's internal sample pump had failed. The CEMS was placed into maintenance at 23:04 and a technician was called to the site. Additional troubleshooting efforts identified the cause of the sample pump failure as the failure of the analyzer internal cooling fan. The internal cooling fan and sample pump were replaced, and the CEMS was placed back into service at 01:20.

An estimate of the actual ammonia slip emissions during this event was calculated using SCR NOx data from the most recent period of unit operations at similar process conditions. This data is represented in Table 2 and indicates that actual ammonia slip emissions never exceeded the permit limit.

In order to help prevent this event in the future, the Facility has implemented a new periodic preventative maintenance work order, to replace all the CEMS analyzers internal cooling fans.

If you have any questions or require additional information, please contact Rosemary Silva, EHS Specialist, at 408-361-4954.

MAILSTOP: RCA 30-DAY REPORT Mr. Wayne Kino January 22, 2015 Page 2

Based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate and complete.

Sincerely,

6 A Terry Mahoney General Manager

General Manager Metcalf Energy Center, LLC

Cc: Katherine Piper Region IX Eric Veerkamp

Calpine Corp. EPA CEC, AQ-34

| | | Tables | BROGDAD | EDIDATA | | |
|------------------|-----------------|----------------------|---|-----------------|------------------------|------------------|
| | <u></u> | Table | the state of the set of the state of the set of the | EDDATA | 1. F. Mar and a states | |
| Timestare | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) |
| Timestamp | NOx ppm @15% O2 | | Total Heat Input | NH3 ppm @15% O2 | Megawatts 1-Min | NH3 Flow 1-Min |
| 12/30/2014 22:00 | 1-Min 2.14 | 1-Min 27.2 | mmBtu/hr 1-Min 1841.6 | 1-Min | • | lb/hr |
| 12/30/2014 22:00 | | 27.2 | | | 175 | 227.63 |
| 12/30/2014 22:02 | | 27.5 | 1843.9 | | 175 | 227.44 |
| 12/30/2014 22:02 | 2.10 | 27.5 | 1843.9 | | 175 | 227.51 |
| 12/30/2014 22:04 | 2.18 | | 1846.2 | | 175 | 227.61 |
| 12/30/2014 22:05 | 2.18 | 27.6 27.8 | 1846.2 | 3.33 | 174.8 | 229.75 |
| 12/30/2014 22:06 | 2.25 | 27.8 | 1846.2 | 3.3 | 175 | 230.02 |
| 12/30/2014 22:07 | 2.23 | 28.1 | 1843.9 | 3.14 | 175 | 230.09 |
| 12/30/2014 22:08 | 2.23 | 28 | 1846.2 1843.9 | 3.24 3.54 | 174.8 | 232.89 |
| 12/30/2014 22:09 | 2.23 | 23 | 1843.9 | | 174.9 | 233.89 |
| 12/30/2014 22:10 | 2.04 | 27.3 | 1845.5 | 3.69 3.93 | 174.9 | 233.94 |
| 12/30/2014 22:11 | 2.02 | 27.3 | 1840.2 | 3.79 | 175.3 175 | 233.99 |
| 12/30/2014 22:12 | 1.85 | 26.7 | 1869.8 | 3.9 | | 234.05 |
| 12/30/2014 22:13 | 1.86 | 26.8 | 1867.8 | 3.5 | 175.1 175 | 232.2 |
| 12/30/2014 22:14 | 1.94 | 27.2 | 1870 | 3.24 | 175.1 | 229.76 |
| 12/30/2014 22:15 | 2.09 | 27.8 | 1865.7 | 2.81 | | 228.44 |
| 12/30/2014 22:16 | 2.19 | 27.9 | 1865.6 | 2.81 | 175.1 175 | 226.3 227.65 |
| 12/30/2014 22:17 | 2.25 | 28.2 | 1868 | 2.86 | 175 | 227.65 |
| 12/30/2014 22:18 | 2.31 | 28.4 | 1867.9 | 2.86 | 174.8 | |
| 12/30/2014 22:19 | 2.19 | 27.6 | 1863.3 | 3.57 | 174.6 | 229.08 |
| 12/30/2014 22:20 | 2.07 | 27.1 | 1867.8 | 3.72 | 174.6 | 231.03 |
| 12/30/2014 22:21 | 2.11 | 28 | 1870.2 | 3.1 | 174.8 | 231.21 231.17 |
| 12/30/2014 22:22 | 2.25 | 28.7 | 1867.9 | 2.76 | 174.8 | 231.17 |
| 12/30/2014 22:23 | 2.22 | 28 | 1863.3 | 3.31 | 174.5 | 231.12 |
| 12/30/2014 22:24 | 2.11 | 27.6 | 1863.3 | 3.66 | 174.4 | 232.19 |
| 12/30/2014 22:25 | 2.16 | 28.3 | 1867.8 | 3.04 | 174.7 | 234.08 |
| 12/30/2014 22:26 | 2.22 | 28.1 | 1843.9 | 3.77 | 174.9 | 232.27 |
| 12/30/2014 22:27 | 2.23 | 27.7 | 1841.6 | 3.89 | 174.8 | 234.67 |
| 12/30/2014 22:28 | 2.12 | 27.4 | 1839.4 | 4.01 | 174.5 | 234.74 |
| 12/30/2014 22:29 | 2.17 | 27.9 | 1839.4 | 3.75 | 174.5 | 235.62 |
| 12/30/2014 22:30 | 2.07 | 27.4 | 1841.6 | 4.1 | 174.7 | 236.93 |
| 12/30/2014 22:31 | 2.04 | 27.9 | 1843.9 | 3.6 | 174.8 | 235.63 |
| 12/30/2014 22:32 | 2.1 | 27.9 | 1839.4 | 3.6 | 174.1 | 234.69 |
| 12/30/2014 22:33 | 2.13 | 27.7 | 1832.5 | 3.97 | 173.7 | 236.04 |
| 12/30/2014 22:34 | 2.17 | 28.4 | 1837.1 | 3.54 | 174 | 236.25 |
| 12/30/2014 22:35 | 2.22 | 28.5 | 1834.8 | 3.54 | 174 | 236.34 |
| 12/30/2014 22:36 | 2.19 | 28.3 | 1837.1 | 3.74 | 174 | 237.35 |
| 12/30/2014 22:37 | 2.15 | 28.1 | 1834.8 | 3.92 | 174.3 | 238.33 |
| 12/30/2014 22:38 | 2.16 | 28.4 | 1837.1 | 3.69 | 174.4 | 238.22 |
| 12/30/2014 22:39 | 2.2 | 28.6 | 1834.8 | 3.56 | 173.8 | 238.31 |
| 12/30/2014 22:40 | 2.21 | 28.5 | 1834.8 | 3.75 | 173.9 | 238.93 |
| 12/30/2014 22:41 | 2.13 | 28.1 | 1834.8 | 4.17 | 174 | 240.25 |
| 12/30/2014 22:42 | 2.06 | 27.9 | 1837.1 | 4.21 | 174 | 240.44 |
| 12/30/2014 22:43 | 2 | 27.9 | 1834.8 | 4.17 | 174.2 | 240.2 |
| 12/30/2014 22:44 | 2.01 | 27.8 | 1834.8 | 4.02 | 174 | 238.11 |
| 12/30/2014 22:45 | 1.97 | 27.6 | 1830.2 | 4.1 | 173.6 | 237.95 |
| 12/30/2014 22:46 | 2 | 27.7 | 1832.5 | 3.88 | 174.1 | 236.51 |
| 12/30/2014 22:47 | 2.11 | 25.7 | 1832.5 | 5.4 | 173.9 | 235.36 |
| 12/30/2014 22:48 | 2.16 | 1.8 | 1837.1 | 23.19 | 174.6 | 235.18 |
| 12/30/2014 22:49 | 2.22 | 0 | 1841.6 | 23.22 | 174.8 | 221.82 |
| 12/30/2014 22:50 | 2,32 | 0 | 1843.9 | 21.6 | 175.1 | 204.37 |
| 12/30/2014 22:51 | 2.71 | 0 | 1843.9 | 22.35 | 175.2 | 208.48 |
| 12/30/2014 22:52 | 2.74 | 0 | 1846.2 | 25.81 | 175 | 244.5 |
| 12/30/2014 22:53 | 2.18 | 0 | 1846.2 | 25.53 | 175 | 246.61 |
| | | | | | | |

| ······································ | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | <u>112 - FHULLAN</u> COLORIA <u>I</u> S | (Turbine - |
|--|----------------|---------------|------------------|-----------------|---|-------------|
| Timestamp | NOx ppm @15% O | | Total Heat Input | NH3 ppm @15% O2 | (Turbine - 1) | NH3 Flow 1 |
| | 1-Min | 1-Min | mmBtu/hr 1-Min | 1-Min | Megawatts 1-Min | lb/hr |
| 12/30/2014 22:54 | | | 1846.2 | | 175 | זמ עמו ג |
| 12/30/2014 22:55 | - | | 1843.9 | | 174.9 | 2 |
| 12/30/2014 22:56 | | | 1843.9 | 16.54 | 174.9 | |
| 12/30/2014 22:57 | | | 1843.9 | 14.37 | | 1 |
| 12/30/2014 22:58 | | | 1843.9 | | 174.8 | 1 |
| 12/30/2014 22:59 | 3.2 | | | 25.94 | 175 | 2 |
| 12/30/2014 22:09 | | | 1832.5 | 45.69 | 173.3 | 4 |
| 12/30/2014 23:00 | | | 1789.1 | 45.12 | 168.6 | |
| | 0.42 | | 1754.8 | 45.28 | 165.3 | 4 |
| 12/30/2014 23:02 | 0.3 | | 1743.4 | 29.6 | 163.7 | |
| 12/30/2014 23:03 | 0.53 | - | 1706.8 | 5.84 | 159.1 | |
| 12/30/2014 23:04 | MAINT | MAINT | 1674.8 | MAINT | 155 | |
| 12/30/2014 23:05 | MAINT | MAINT | 1670.3 | MAINT | 154.7 | 3 |
| 12/30/2014 23:06 | MAINT | MAINT | 1670.3 | MAINT | 154.7 | 4 |
| 12/30/2014 23:07 | MAINT | MAINT | 1674.8 | MAINT | 154.8 | 2 |
| 12/30/2014 23:08 | MAINT | MAINT | 1674.8 | MAINT | 154.9 | 2 |
| 12/30/2014 23:09 | MAINT | MAINT | 1674.8 | MAINT | 155 | 2 |
| 12/30/2014 23:10 | MAINT | MAINT | 1672.5 | MAINT | 155.1 | 2 |
| 12/30/2014 23:11 | MAINT | MAINT | 1674.8 | MAINT | 155.1 | |
| 12/30/2014 23:12 | MAINT | MAINT | 1674.8 | MAINT | 155 | 2 |
| 12/30/2014 23:13 | MAINT | MAINT | 1672.5 | MAINT | 154.8 | 2 |
| 12/30/2014 23:14 | MAINT | MAINT | 1674.8 | MAINT | 154.7 | 2 |
| 12/30/2014 23:15 | MAINT | MAINT | 1684 | MAINT | 155.9 | 2 |
| 12/30/2014 23:16 | MAINT | MAINT | 1716 | MAINT | 160.5 | 2 |
| 12/30/2014 23:17 | MAINT | MAINT | 1752.5 | MAINT | 164.3 | 24 |
| 12/30/2014 23:18 | MAINT | MAINT | 1757.1 | MAINT | 165 | 2: |
| 12/30/2014 23:19 | MAINT | MAINT | 1757.1 | MAINT | 164.8 | 2: |
| 12/30/2014 23:20 | MAINT | MAINT | 1757.1 | MAINT | 165 | |
| 12/30/2014 23:21 | MAINT | MAINT | 1757.1 | MAINT | 165 | 2: |
| 12/30/2014 23:22 | MAINT | MAINT | 1759.4 | MAINT | 164.8 | |
| 12/30/2014 23:23 | MAINT | MAINT | 1755.4 | MAINT | | 25 |
| 12/30/2014 23:24 | MAINT | MAINT | | | 164.9 | 25 |
| 12/30/2014 23:25 | MAINT | | 1761.7 | MAINT | 165.1 | 25 |
| | | MAINT | 1759.4 | MAINT | 164.8 | 25 |
| 12/30/2014 23:26 | MAINT | MAINT | 1757.1 | MAINT | 164.8 | 25 |
| 12/30/2014 23:27 | MAINT | MAINT | 1754.8 | MAINT | 164.4 | 25 |
| 12/30/2014 23:28 | MAINT | MAINT | . 1754.8 | MAINT | 164.6 | 25 |
| 12/30/2014 23:29 | MAINT | MAINT | 1752.5 | MAINT | 164.4 | 25 |
| 12/30/2014 23:30 | MAINT | MAINT | 1754.8 | MAINT | 164.7 | 2 |
| 12/30/2014 23:31 | MAINT | MAINT | 1754.8 | MAINT | 164.8 | 25 |
| 12/30/2014 23:32 | MAINT | MAINT | 1777.7 | MAINT | 167.2 | 2 |
| 12/30/2014 23:33 | MAINT | MAINT | 1798.2 | MAINT | 169.4 | 25 |
| 12/30/2014 23:34 | MAINT | MAINT | 1800.5 | MAINT | 169.8 | 25 |
| 12/30/2014 23:35 | MAINT | MAINT | 1800.5 | MAINT | 169.9 | 25 |
| 12/30/2014 23:36 | MAINT | MAINT | 1800.5 | MAINT | 169.9 | 25 |
| 12/30/2014 23:37 | MAINT | MAINT | 1793.7 | MAINT | 169.6 | 25 |
| 12/30/2014 23:38 | MAINT | MAINT | 1793.7 | MAINT | 169.5 | 25 |
| 12/30/2014 23:39 | MAINT | MAINT | 1793.7 | MAINT | 169.6 | 25 |
| 12/30/2014 23:40 | MAINT | MAINT | 1795.9 | MAINT | 170.1 | 25 |
| 12/30/2014 23:41 | MAINT | MAINT | 1800.5 | MAINT | 170.1 | 25 |
| 12/30/2014 23:42 | MAINT | MAINT | 1798.2 | MAINT | 170.1 | 25 |
| 12/30/2014 23:43 | MAINT | MAINT | 1798.2 | MAINT | 169.8 | |
| 12/30/2014 23:44 | MAINT | MAINT | 1798.2 | MAINT | 170 | 25 |
| 12/30/2014 23:45 | MAINT | MAINT | 1795.9 | MAINT | | 25 |
| 12/30/2014 23:45 | MAINT | MAINT | 1802.8 | | 170 | 250 |
| 12/30/2014 23:46 | MAINT | MAINT | 1802.8 | MAINT MAINT | 170.5 171.8 | 2: |

| server a server a server a server as a | | 1 | L: REPORT | And the state of the | | |
|--|-----------------|----------------|--------------------------|---|-----------------|---------------|
| T : | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) |
| Timestamp | NOx ppm @15% O2 | | Total Heat Input | NH3 ppm @15% O2 | Megawatts 1-Min | NH3 Flow 1-M |
| 12/30/2014 23:48 | 1-Min MAINT | 1-Min MAINT | mmBtu/hr 1-Min 1814.2 | 1-Min | 171.0 | lb/hr |
| 12/30/2014 23:48 | | | | | 171.8 | 25 |
| | MAINT | MAINT | 1814.2 | | 172 | 256 |
| 12/30/2014 23:50 | MAINT | MAINT | 1814.2 | | 172 | 256 |
| 12/30/2014 23:51 | MAINT | MAINT | 1816.5 | | 172.1 | 256 |
| 12/30/2014 23:52 | MAINT | MAINT | 1816.5 | | 171.9 | 256 |
| 12/30/2014 23:53 | MAINT | MAINT | 1816.5 | | 172 | 256 |
| 12/30/2014 23:54 | MAINT | MAINT | 1816.5 | | 172 | 2 |
| 12/30/2014 23:55 | MAINT | MAINT | 1816.5 | | 171.9 | 256 |
| 12/30/2014 23:56 | MAINT | MAINT | 1816.5 | | 171.9 | 256 |
| 12/30/2014 23:57 | MAINT | MAINT | 1814.2 | | 171.8 | 256 |
| 12/30/2014 23:58 | MAINT | MAINT | 18 11.9 | | 172 | 256 |
| 12/30/2014 23:59 | MAINT | MAINT | 1814.2 | MAINT | 172 | 256 |
| 12/31/2014 0:00 | MAINT | MAINT | 1814.2 | MAINT | 171.8 | 256 |
| 12/31/2014 0:01 | MAINT | MAINT | 1816.5 | MAINT | 172 | 256 |
| 12/31/2014 0:02 | MAINT | MAINT | 1818.8 | MAINT | 172.2 | 256 |
| 12/31/2014 0:03 | MAINT | MAINT | 1818.8 | MAINT | 172.1 | 256 |
| 12/31/2014 0:04 | MAINT | MAINT | 1818.8 | MAINT | 172.1 | 250 |
| 12/31/2014 0:05 | MAINT | MAINT | 1816.5 | MAINT | 172.1 | 256 |
| 12/31/2014 0:06 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256 |
| 12/31/2014 0:07 | MAINT | MAINT | 1814.2 | MAINT | 171.8 | 256 |
| 12/31/2014 0:08 | MAINT | MAINT | 1816.5 | MAINT | 172.2 | 256 |
| 12/31/2014 0:09 | MAINT | MAINT | 1816.5 | MAINT | 171.9 | 256 |
| 12/31/2014 0:10 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256 |
| 12/31/2014 0:11 | MAINT | MAINT | 1816.5 | MAINT | 172.1 | 256 |
| 12/31/2014 0:12 | MAINT | MAINT | 1816.5 | MAINT | 171.5 | 250 |
| 12/31/2014 0:13 | MAINT | MAINT | 1816.5 | MAINT | 171.8 | |
| 12/31/2014 0:14 | MAINT | MAINT | 1818.8 | MAINT | | 256 |
| 12/31/2014 0:14 | MAINT | MAINT | 1816.5 | | 172 | 256 |
| | | | | MAINT | 171.8 | 256 |
| 12/31/2014 0:16 | MAINT | MAINT | 1811.9 | MAINT | 171.8 | 256 |
| 12/31/2014 0:17 | MAINT | MAINT | 1814.2 | MAINT | 172.2 | 256 |
| 12/31/2014 0:18 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 256 |
| 12/31/2014 0:19 | MAINT | MAINT | 1816.5 | MAINT | 172 | 256 |
| 12/31/2014 0:20 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256 |
| 12/31/2014 0:21 | MAINT | MAINT | 1816.5 | MAINT | 171.9 | 256 |
| 12/31/2014 0:22 | MAINT | MAINT | 1816.5 | MAINT | 171.9 | 25 |
| 12/31/2014 0:23 | MAINT | MAINT | 1816.5 | MAINT | 171.9 | 256 |
| 12/31/2014 0:24 | MAINT | MAINT | 1816.5 | MAINT | 171.8 | 256 |
| 12/31/2014 0:25 | MAINT | MAINT | 1814.2 | MAINT | 171.8 | 256 |
| 12/31/2014 0:26 | MAINT | MAINT | 1816.5 | MAINT | 172.1 | 256 |
| 12/31/2014 0:27 | MAINT | MAINT | 1814.2 | MAINT | 172 | 256 |
| 12/31/2014 0:28 | MAINT | MAINT | 1811.9 | MAINT | 171.8 | 256 |
| 12/31/2014 0:29 | MAINT | MAINT | 1816.5 | MAINT | 171.8 | 256 |
| 12/31/2014 0:30 | MAINT | MAINT | 1816.5 | MAINT | 172 | 256 |
| 12/31/2014 0:31 | MAINT | MAINT | 1816.5 | MAINT | 172.2 | 25 |
| 12/31/2014 0:32 | MAINT | MAINT | 1816.5 | MAINT | 172.1 | 256 |
| 12/31/2014 0:33 | MAINT | MAINT | 1816.5 | MAINT | 171.8 | 256 |
| 12/31/2014 0:34 | MAINT | MAINT | 1811.9 | MAINT | 171.8 | 256 |
| 12/31/2014 0:35 | MAINT | MAINT | 1811.9 | MAINT | 171.9 | 256 |
| 12/31/2014 0:35 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | |
| 12/31/2014 0:38 | MAINT | MAINT | 1814.2 | MAINT | | 256 |
| 12/31/2014 0:37 | | | 1816.5 | | 171.9 | 256 |
| | | MAINT | | MAINT | 171.8 | 256 |
| 12/31/2014 0:39 | MAINT | MAINT | 1816.5 | MAINT | 172.1 | 256. |
| 12/31/2014 0:40 | MAINT | MAINT | 1814.2 | MAINT | 172 | 256 |
| 12/31/2014 0:41 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256. |

| للا المتشاهد للله | <u>in statistic statistics</u> in st | Table 1 | ন সমন প্রদান করে বাবে বিষয় | u ala a sugar hala asala ne a s | | |
|-------------------|--------------------------------------|---------------|-----------------------------|---------------------------------|-----------------|----------------|
| | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) |
| Timestamp | NOx ppm @15% 02 | | Total Heat Input | NH3 ppm @15% O2 | Megawatts 1-Min | NH3 Flow 1-Min |
| 10/01/0014 0.40 | 1-Min MAINT | 1-Min | mmBtu/hr 1-Min | 1-Min | - | lb/hr |
| 12/31/2014 0:42 | | MAINT | 1816.5 | | 172 | 256.28 |
| 12/31/2014 0:43 | MAINT | MAINT | 1816.5 | | 171.9 | 256 |
| 12/31/2014 0:44 | MAINT | MAINT | 1814.2 | | 172 | 256.21 |
| 12/31/2014 0:45 | MAINT | MAINT | 1814.2 | | 172.1 | 256.06 |
| 12/31/2014 0:46 | MAINT | MAINT | 1811.9 | | 171.8 | 256.25 |
| 12/31/2014 0:47 | MAINT | MAINT | 1814.2 | | 171.9 | 256.36 |
| 12/31/2014 0:48 | MAINT | MAINT | 1814.2 | | 172.1 | 256.29 |
| 12/31/2014 0:49 | MAINT | MAINT | 1811.9 | MAINT | 172 | 256.38 |
| 12/31/2014 0:50 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256.14 |
| 12/31/2014 0:51 | MAINT | MAINT | 1816.5 | MAINT | 171.9 | 256.28 |
| 12/31/2014 0:52 | MAINT | MAINT | 1816.5 | MAINT | 172.1 | 256.3 |
| 12/31/2014 0:53 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256.49 |
| 12/31/2014 0:54 | MAINT | MAINT | 1816.5 | MAINT | 171.9 | 256.37 |
| 12/31/2014 0:55 | MAINT | MAINT | 1811.9 | MAINT | 172 | 256.32 |
| 12/31/2014 0:56 | MAINT | MAINT | 1814.2 | MAINT | 172 | 256.19 |
| 12/31/2014 0:57 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 256.05 |
| 12/31/2014 0:58 | MAINT | MAINT | 1811.9 | MAINT | 172.2 | 256.31 |
| 12/31/2014 0:59 | MAINT | MAINT | 1814.2 | MAINT | 172.1 | 256.31 |
| 12/31/2014 1:00 | MAINT | MAINT | 1811.9 | MAINT | 172.1 | 256.2 |
| 12/31/2014 1:01 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 256.18 |
| 12/31/2014 1:02 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 256.24 |
| 12/31/2014 1:03 | MAINT | MAINT | 1816.5 | MAINT | 172 | 256.24 |
| 12/31/2014 1:04 | MAINT | MAINT | 1814.2 | MAINT | 172 | 255.85 |
| 12/31/2014 1:05 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 256.02 |
| 12/31/2014 1:06 | MAINT | MAINT | 1811.9 | MAINT | 171.9 | 255.92 |
| 12/31/2014 1:07 | MAINT | MAINT | 1814.2 | MAINT | 172 | 256.08 |
| 12/31/2014 1:08 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 256.21 |
| .2/31/2014 1:09 | MAINT | MAINT | 1814.2 | MAINT | 1 71.9 | 255.91 |
| 12/31/2014 1:10 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 255.9 |
| 12/31/2014 1:11 | MAINT | MAINT | 1814.2 | MAINT | 172 | 255.99 |
| 12/31/2014 1:12 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 255.84 |
| 12/31/2014 1:13 | MAINT | MAINT | 1811.9 | MAINT | 172 | 255.89 |
| 12/31/2014 1:14 | MAINT | MAINT | 1816.5 | MAINT | 172 | 256.08 |
| 12/31/2014 1:15 | MAINT | MAINT | 1814.2 | MAINT | 171.8 | 234.68 |
| 12/31/2014 1:16 | MAINT | MAINT | 1809.6 | MAINT | 172 | 211.73 |
| 12/31/2014 1:17 | MAINT | MAINT | 1811.9 | MAINT | 171.9 | 236.4 |
| 12/31/2014 1:18 | MAINT | MAINT | 1811.9 | MAINT | 172 | 237.55 |
| 12/31/2014 1:19 | MAINT | MAINT | 1814.2 | MAINT | 171.9 | 243.88 |
| 12/31/2014 1:20 | 2.47 | 30.8 | 1816.5 | 3.31 | 172 | 246.67 |
| 12/31/2014 1:21 | 2.4 | 30.7 | 1814.2 | 3.4 | 172 | 247.08 |
| 12/31/2014 1:22 | 2.38 | 30.7 | 1814.2 | 3.34 | 172 | |
| 12/31/2014 1:23 | 2.34 | 30.7 | 1814.2 | 3.28 | 172 | 246.86 |
| 12/31/2014 1:24 | 2.41 | 30.8 | 1814.2 | 3.33 | 172 | 247.1 |
| 12/31/2014 1:25 | 2.39 | 30.7 | 1811.9 | 3.73 | 171.8 | 249.89 |
| 12/31/2014 1:26 | 2.29 | 30.7 | 1811.9 | 3.73 | 171.8 | 250.97 |
| 12/31/2014 1:27 | 2.33 | 31.1 | 1811.9 | 3.66 | 172.1 | 252.89 |
| 12/31/2014 1:28 | 2.29 | 31.2 | 1809.6 | 3.91 | 171.9 | 256.26 |
| 12/31/2014 1:29 | 2.22 | 30.9 | 1814.2 | 4.01 | 172 | 256.86 |
| 12/31/2014 1:30 | 2.14 | 30.7 | 1814.2 | 4.29 | 172 | 259.46 |
| 12/31/2014 1:31 | 2.11 | 30.9 | 1811.9 | 4.26 | 172 | 260.05 |
| 12/31/2014 1:32 | 2.08 | 31 | 1811.9 | 4.19 | 171.9 | 260.11 |
| 12/31/2014 1:33 | 2.08 | 31.1 | 1814.2 | 4.29 | 171.8 | 261.72 |
| 12/31/2014 1:34 | 2.03 | 31.2 | 1811.9 | 4.25 | 172 | 262.06 |
| 12/31/2014 1:35 | 6.VT | 31.2 | 1814.2 | 7.20 | 116 | 202.00 |

| | | Table 1 | : REPORT | ED DATA | | |
|-----------------|---|---------------------------------------|---|---|----------------------------------|--|
| Timestamp | (Turbine - 1) NOx ppm @15% O2 1-Min | (Turbine - 1) SCR NOx ppm 1-Min | (Turbine - 1) Total Heat Input mmBtu/hr 1-Min | (Turbine - 1) NH3 ppm @15% O2 1-Min | (Turbine - 1) Megawatts 1-Min | (Turbine - 1) NH3 Flow 1-Min Ib/hr |
| 12/31/2014 1:36 | 2.02 | 31.2 | 1811.9 | 4.16 | 171.8 | 261.78 |
| 12/31/2014 1:37 | 2 | 31.3 | 1814.2 | 4.07 | 172 | 262.65 |
| 12/31/2014 1:38 | 1.97 | 31.1 | 1811.9 | 4.2 | 172 | 262.59 |
| 12/31/2014 1:39 | 1.94 | 31 | 1811.9 | 4.14 | 172 | 261.59 |
| 12/31/2014 1:40 | 1.95 | 30.9 | 1814.2 | 4.22 | 172.1 | 260.92 |
| 12/31/2014 1:41 | 1.95 | 31.1 | 1814.2 | 4 | 172.1 | 259.91 |
| 12/31/2014 1:42 | 1.95 | 31 | 1814.2 | 3.94 | 171.8 | 259 |
| 12/31/2014 1:43 | 1.96 | 31.1 | 1811.9 | 3.83 | 171.9 | 258.03 |
| 12/31/2014 1:44 | 2.03 | 31.3 | 1814.2 | 3.75 | 172 | 258.45 |
| 12/31/2014 1:45 | 2.05 | 31.3 | 1811.9 | 3.69 | 171.7 | 258.01 |
| 12/31/2014 1:46 | 2.06 | 31.6 | 1809.6 | 3.62 | 172.1 | 258.41 |
| 12/31/2014 1:47 | 2.16 | 31.7 | 1811.9 | 3.88 | 171.9 | 260.91 |
| 12/31/2014 1:48 | 2.14 | 31.8 | 1811.9 | 3.86 | 172 | 261.21 |
| 12/31/2014 1:49 | 2.14 | 31.8 | 1811.9 | 3.93 | 171.9 | 262.02 |
| 12/31/2014 1:50 | 2.06 | 31.4 | 1811.9 | 4.26 | 172.1 | 263,39 |
| 12/31/2014 1:51 | 2.02 | 31.5 | 1814.2 | 4.11 | 171.9 | 263.69 |
| 12/31/2014 1:52 | 2.01 | 31.4 | 1811.9 | 4.25 | 171.8 | 263.91 |
| 12/31/2014 1:53 | 2.03 | 31.6 | 1811.9 | 4.05 | 172.1 | 263.63 |
| 12/31/2014 1:54 | 1.99 | 31.4 | 1809.6 | 4.16 | 171.9 | 263.7 |
| 12/31/2014 1:55 | 1.97 | 31.3 | 1811.9 | 4.16 | 171,7 | 263.16 |
| 12/31/2014 1:56 | 2.03 | 31.7 | 1807.4 | 4.01 | 171.9 | 262.79 |
| 12/31/2014 1:57 | 2.02 | 31.5 | 1809.6 | 4.19 | 172 | 263.48 |
| 12/31/2014 1:58 | 2.01 | 31.6 | 1811.9 | 4.13 | 172 | 264,12 |
| 12/31/2014 1:59 | 1.99 | 31.5 | 1811.9 | 4.05 | 172 | 263.22 |

| | | | TADU | 3 2 - RECA | LCULATIED | DATA | | | |
|--------------------------------------|--------------------------|-----------------|----------------------|------------------------------------|--------------------------|-----------------|----------------------|--------------|------------------|
| | (Turbine - 1) | Updated SCR NOx | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | | |
| Timestamp | NOx ppm @15% 02 1-Min | ppm | SCR NOx ppm 1-Min | Total Heat Input mmBtu/hr 1-Min | NH3 ppm @15% O2 1-Min | Megawatts 1-Min | NH3 Flow 1-Min ib/hr | NH3 inlet | NH3 Slip |
| 12/30/2014 22:00 | 2.14 | | 27.2 | 1841.6 | 3.35 | 175 | 227.63 | | 3.35 |
| 12/30/2014 22:01 | 2.12 | - | 27.3 | 1843.9 | 3.24 | | 227.44 | - | 3.24 |
| 12/30/2014 22:02 | 2.16 | | 27.5 | 1843.9 | 3.18 | 175 | 227.51 | • | 3.18 |
| 12/30/2014 22:03 | 2.2 | | 27.4 | 1846.2 | 3.26 | | 227.61 | • | 3,26 |
| 12/30/2014 22:04 12/30/2014 22:05 | 2.18 2.24 | | 27.6 | 1846.2 | 3.33 | | 229.75 | • | 3.33 |
| 12/30/2014 22:06 | 2.24 | | 27.8 28.1 | 1846.2 1843.9 | 3.3 | 175 175 | 230.02 | • | 3.3 |
| 12/30/2014 22:07 | 2.34 | | 28.4 | 1846.2 | 3.14 3.24 | 175 | 230.09 232,89 | • | 3.14 |
| 12/30/2014 22:08 | 2.23 | | 28 | 1843.9 | 3.54 | 174.9 | 232,89 | : | 3.24 3.54 |
| 12/30/2014 22:09 | 2.17 | - | 27.7 | 1843.9 | 3.69 | 174,9 | 233.94 | | 3.69 |
| 12/30/2014 22:10 | 2.04 | | 27.3 | 1846.2 | 3.93 | 175.3 | 233.99 | - | 3.93 |
| 12/30/2014 22:11 | 2,02 | | 27.1 | 1870.6 | 3.79 | 175 | 234,05 | - | 3.79 |
| 12/30/2014 22:12 12/30/2014 22:13 | 1.85 1.86 | - | 26.7 26.8 | 1869.8 | 3.9 | 175.1 | 232.2 | • | 3.9 |
| 12/30/2014 22:14 | 1.88 | | 20.8 | 1867.8 1870 | 3.6 3.24 | 175 175.1 | 229.76 | • | 3.6 |
| 12/30/2014 22:15 | 2.09 | • | 27.8 | 1865.7 | 2.81 | 175.1 | 228.44 226.3 | : | 3.24 2.81 |
| 12/30/2014 22:16 | 2.19 | - | 27.9 | 1865,6 | 2.92 | 175 | 227.65 | | 2.81 |
| 12/30/2014 22:17 | 2.25 | - | 28.2 | 1868 | 2.86 | 174.8 | 228.32 | - | 2.86 |
| 12/30/2014 22:18 | 2.31 | • | 28.4 | 1867.9 | 2.86 | 174.8 | 229.08 | | 2.86 |
| 12/30/2014 22:19 | 2.19 | • | 27.6 | 1853.3 | 3.57 | 174.6 | 231.03 | • | 3.57 |
| 12/30/2014 22:20 12/30/2014 22:21 | 2.07 2.11 | - | 27.1 | 1867.8 | 3.72 | 174.6 | 231.21 | • | 3.72 |
| 12/30/2014 22:22 | 2.11 | - | 28 28.7 | 1870.2 1867.9 | 3.1 2.76 | 174.8 | 231.17 | • | 3.1 |
| 12/30/2014 22:23 | 2.22 | • | 28 | 1863.3 | 3.31 | 174.8 174.5 | 231.12 232.19 | | 2.76 |
| 12/30/2014 22:24 | 2.11 | • | 27.6 | 1863.3 | 3.66 | 174.4 | 234.08 | | 3.31 3.66 |
| 12/30/2014 22:25 | 2.16 | - | 28.3 | 1867.8 | 3.04 | 174.7 | 232.27 | - | 3.04 |
| 12/30/2014 22:26 | 2.22 | - | 28.1 | 1843.9 | 3.77 | 174.9 | 234.29 | - | 3.77 |
| 12/30/2014 22:27 | 2.23 | - | 27.7 | 1841.6 | 3.89 | 174.8 | 234.67 | • | 3.89 |
| 12/30/2014 22:28 | 2.12 | • | 27.4 | 1839.4 | 4.01 | 174.5 | 234.74 | • | 4.01 |
| 12/30/2014 22:29 12/30/2014 22:30 | 2.17 2.07 | • | 27.9 | 1839.4 | 3.75 | 174.5 | 235.62 | • | 3.75 |
| 12/30/2014 22:30 | 2.07 | | 27.4 27.9 | 1841.6 1843.9 | 4.1 3.6 | 174.7 174.8 | 236.93 | • | 4.1 |
| 12/30/2014 22:32 | 2.1 | • | 27.9 | 1839.4 | 3.6 | 174.8 | 235.63 234.69 | • | 3.6 |
| 12/30/2014 22:33 | 2.13 | - | 27.7 | 1832.5 | 3.97 | 173.7 | 234.69 | | 3.6 3.97 |
| 12/30/2014 22:34 | 2.17 | - | 28.4 | 1837.1 | 3.54 | 174 | 236.25 | | 3.54 |
| 12/30/2014 22:35 | 2.22 | - | 28.5 | 1834.8 | 3.54 | 174 | 236.34 | • | 3.54 |
| 12/30/2014 22:36 | 2.19 | • | 28.3 | 1837.1 | 3.74 | 174 | 237.35 | • | 3.74 |
| 12/30/2014 22:37 | 2.15 | - | 28.1 | 1834.8 | 3.92 | 174.3 | 238.33 | • | 3.92 |
| 12/30/2014 22:38 12/30/2014 22:39 | 2.16 2.2 | • | 28.4 28.6 | 1837.1 | 3.69 | 174.4 | 238.22 | • | 3.69 |
| 12/30/2014 22:40 | 2.21 | | 28.5 | 1834.8 1834.8 | 3.56 3.75 | 173.8 173.9 | 238.31 238.93 | - | 3.56 |
| 12/30/2014 22:41 | 2.13 | • | 28.1 | 1834.8 | 4.17 | 174 | 240.25 | • | 3.75 4.17 |
| 12/30/2014 22:42 | 2.06 | - | 27.9 | 1837.1 | 4.21 | 174 | 240.44 | - | 4.21 |
| 12/30/2014 22:43 | 2 | - | 27.9 | 1834.8 | 4.17 | 174.2 | 240.2 | - | 4,17 |
| 12/30/2014 22:44 | 2.01 | - | 27.8 | 1834.8 | 4.02 | 174 | 238.11 | - | 4.02 |
| 12/30/2014 22:45 | 1.97 | - | 27.6 | 1830.2 | 4.1 | 173.6 | 237.95 | • | 4.1 |
| 12/30/2014 22:46 12/30/2014 22:47 | 2 2,11 | • | 27.7 25.7 | 1832.5 1832.5 | 3.88 | 174.1 | 236.51 | • | 3.88 |
| 12/30/2014 22:48 | 2.16 | 29,4 | 1.8 | 1832.5 | 5.4 23.19 | 173.9 174.6 | 235.36 235.18 | | 5,4 |
| 12/30/2014 22:49 | 2.22 | 29.4 | 0 | 1841.6 | 23.22 | 174.8 | 235.18 | 30.S 28.8 | 2.4 1.0 |
| 12/30/2014 22:50 | 2.32 | 29.4 | 0 | 1843.9 | 21.6 | 175.1 | 204.37 | 26.4 | 2.7 |
| 12/30/2014 22:51 | 2.71 | 29.4 | 0 | 1843.9 | 22.35 | 175.2 | 208.48 | 27.0 | 2.0 |
| 12/30/2014 22:52 | 2.74 | 29.4 | 0 | 1846.2 | 25.81 | 175 | 244.5 | 31.5 | 3.6 |
| 12/30/2014 22:53 | 2.18 | 29.4 | 0 | 1846.2 | 25.53 | 175 | 246.61 | 31.7 | 3.4 |
| 12/30/2014 22:54 12/30/2014 22:55 | 1.92 1.83 | 29.4 29.4 | 0 | 1846.2 | 25.27 | 175 | 246.58 | 31.7 | 3.1 |
| 12/30/2014 22:55 | 1.85 | 29.4 | 0 | 1843.9 1843.9 | 24.64 16.54 | 174.9 174.9 | 240.32 | 30.9 | 2.5 |
| 12/30/2014 22:57 | 2.88 | 29.4 | ő | 1843.9 | 14.37 | 174.5 | 155.93 123.99 | 20.1 16.0 | 7.8 |
| 12/30/2014 22:58 | 4.4 | 29.4 | 0 | 1843.9 | 25.94 | 175 | 230.79 | 29.8 | 10.1 3.6 |
| 12/30/2014 22:59 | 3.23 | 29.4 | 0 | 1832.5 | 45.69 | 173.3 | 444.33 | 57.6 | 23.4 |
| | | | | E. | 7.8 | | | 1000 | |
| 12/30/2014 23:00 | 0.9 | 29.4 | 0 | 1789.1 | 45.12 | 168.6 | 448.1 | 59.4 | 23.1 |
| 12/30/2014 23:01 12/30/2014 23:02 | 0.42 | 29.4 | 0 | 1754.8 | 45.28 | 165.3 | 445.27 | 60.5 | 23.4 |
| 12/30/2014 23:02 | 0.35 | 29.4 29.4 | 0 0 | 1743.4 1706.8 | 29.6 5 84 | 163.7 | 288.5 | 39.5 | 7.B ¹ |
| 12/30/2014 23:03 | 2.1 | 29.4 | MAINT | 1/05.8 1674.8 | 5.84 MAINT | 159.1 155 | 52.05 | 7.3 | 18.2 |
| 12/30/2014 23:05 | 2.1 | 29.4 | MAINT | 1670.3 | MAINT | 155 | 66.56 378.21 | 9.5 54.0 | 15.4 |
| 12/30/2014 23:06 | 2.1 | 29.4 | MAINT | 1670,3 | MAINT | 154.7 | 474.45 | 54.0 67.8 | 19.8 30.0 |
| 12/30/2014 23:07 | 2.1 | 29.4 | MAINT | 1674.8 | MAINT | 154.8 | 290.41 | 41.4 | 10.4 |
| 12/30/2014 23:08 | 2.1 | 29.4 | MAINT | 1674.8 | MAINT | 154.9 | 245,72 | 35.0 | 5.7 |
| 12/30/2014 23:09 | 2.1 | 29.4 | MAINT | 1574.8 | MAINT | 155 | 225,65 | 32.1 | 3.6 |
| 12/30/2014 23:10 12/30/2014 23:11 | 2.1 | 29.4 | MAINT | 1672.5 | MAINT | 155.1 | 223.56 | 31.9 | 3.4 |
| 12/30/2014 23:11 | 2.1 2.1 | 29.4 29.4 | MAINT MAINT | 1674.8 1674.8 | MAINT MAINT | 155.1 | 224.9 | 32.0 | 3.5 |
| 12/30/2014 23:12 | 2.1 | 29.4 | MAINT | 1672.5 | MAINT | 155 154.8 | 234.55 234.36 | 33.4 33.4 | 4.5 |
| | | · · · | | | · | 20110 | 207.30 | ~~~ | 4.5 |

| | | | TAR | 32 - RECA | | | | | |
|--------------------------------------|---------------|-----------------|------------------------------|--|--------------------------------|----------------------------|---|--------------|------------|
| | (Turbine - 1) | <u> </u> | | And a second | an an taon ang pantang kanalan | 200000 | der angen and der and and an out of the | | |
| Timestamp | NOx ppm @15% | Updated SCR NOx | (Turbine - 1) SCR NOx ppm | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | | |
| | O2 1-Min | ppm | 1-Min | Total Heat Input mmBtu/hr 1-Min | NH3 ppm @15% O2 1-Min | Megawatts 1-Min | NH3 Flow 1-Min lb/hr | NH3 Inlet | NH3 Slip |
| 12/30/2014 23:14 | 2.1 | 29.4 | MAINT | - | | | | | |
| 12/30/2014 23:15 | 2.1 | 29.4 | MAINT | 1674.8 1684 | MAINT | 154.7 | 235.49 | 33.5 | 4.6 |
| 12/30/2014 23:16 | 2.1 | 29.4 | MAINT | 1716 | MAINT | 155.9 160.5 | 233.93 | 33.1 | 4.3 |
| 12/30/2014 23:17 | 2.1 | 29.4 | MAINT | 1752.5 | MAINT | 164.3 | 241.89 245.95 | 33.6 33.5 | 4.7 |
| 12/30/2014 23:18 | 2.1 | 29.4 | MAINT | 1757.1 | MAINT | 165 | 255.85 | 34.7 | 4.6 5.5 |
| 12/30/2014 23:19 | 2.1 | 29.4 | MAINT | 1757.1 | MAINT | 164.8 | 256.37 | 34.8 | 5.6 |
| 12/30/2014 23:20 | 2.1 | 29.4 | MAINT | 1757.1 | MAINT | 165 | 256.58 | 34.8 | 5.6 |
| 12/30/2014 23:21 | 2.1 | 29.4 | MAINT | 1757.1 | MAINT | 155 | 255.39 | 34.8 | 5.6 |
| 12/30/2014 23:22 | 2.1 | 29.4 | MAINT | 1759.4 | MAINT | 164.8 | 256,49 | 34,8 | 5.6 |
| 12/30/2014 23:23 | 2.1 | 29,4 | MAINT | 1761.7 | MAINT | 164.9 | 256.44 | 34.7 | 5.5 |
| 12/30/2014 23:24 | 2.1 | 29.4 | MAINT | 1761.7 | MAINT | 165.1 | 255.34 | 34.7 | 5.5 |
| 12/30/2014 23:25 12/30/2014 23:26 | 2.1 2.1 | 29.4 | MAINT | 1759.4 | MAINT | 164.8 | 256.36 | 34.8 | S,5 |
| 12/30/2014 23:27 | 2.1 | 29.4 29.4 | MAINT | 1757.1 | MAINT | 164.8 | 256.37 | 34.8 | 5.6 |
| 12/30/2014 23:28 | 2.1 | 29.4 | MAINT | 1754.8 1754.8 | MAINT | 164.4 | 256.49 | 34.9 | 5.6 |
| 12/30/2014 23:29 | 2.1 | 29.4 | MAINT | 1753.5 | MAINT | 164.6 164.4 | 256.42 | 34.9 | 5.6 |
| 12/30/2014 23:30 | 2.1 | 29.4 | MAINT | 1754.8 | MAINT | 164.7 | 256.34 256.4 | 34,9 | 5.6 |
| 12/30/2014 23:31 | 2.1 | 29.4 | MAINT | 1754.8 | MAINT | 164.8 | 256.26 | 34.9 | 5.6 |
| 12/30/2014 23:32 | 2.1 | 29.4 | MAINT | 1777.7 | MAINT | 164.8 | 256.26 | 34.8 34.4 | 5.6 5.3 |
| 12/30/2014 23:33 | 2.1 | 29.4 | MAINT | 1798.2 | MAINT | 169.4 | 256.23 | 34.4 34.0 | 5.3 |
| 12/30/2014 23:34 | 2.1 | 29.4 | MAINT | 1800.5 | MAINT | 169.8 | 256.13 | 33.9 | 4.9 |
| 12/30/2014 23:35 | 2.1 | 29,4 | MAINT | 1800.5 | MAINT | 169.9 | 256.26 | 34.0 | 4.9 |
| 12/30/2014 23:36 | 2.1 | 29.4 | MAINT | 1800.5 | MAINT | 169.9 | 256.27 | 34.0 | 4.9 |
| 12/30/2014 23:37 | 2.1 | 29.4 | MAINT | 1793.7 | MAINT | 169.6 | 256.35 | 34.1 | 5.0 |
| 12/30/2014 23:38 | 2.1 | 29.4 | MAINT | 1793.7 | MAINT | 169.5 | 256.42 | 34,1 | 5.1 |
| 12/30/2014 23:39 | 2.1 | 29.4 | MAINT | 1793.7 | MAINT | 169.6 | 256.43 | 34.1 | 5.1 |
| 12/30/2014 23:40 | 2.1 | 29.4 | MAINT | 1795,9 | MAINT | 170.1 | 256.27 | 34.0 | 5.0 |
| 12/30/2014 23:41 | 2.1 | 29.4 | MAINT | 1800.5 | MAINT | 170.1 | 256.31 | 34,0 | 4.9 |
| 12/30/2014 23:42 12/30/2014 23:43 | 2.1 2.1 | 29.4 29.4 | MAINT | 1798.2 | MAINT | 170.1 | 256.35 | 34.0 | 5.0 |
| 12/30/2014 23:44 | 2.1 | 29.4 | MAINT | 1798.2 | MAINT | 169.8 | 256.33 | 34.0 | 5.0 |
| 12/30/2014 23:45 | 2.1 | 29.4 | MAINT | 1798.2 1795.9 | MAINT | 170 | 256.46 | 34.0 | 5.0 |
| 12/30/2014 23:46 | 2.1 | 29.4 | MAINT | 1793.9 | MAINT MAINT | 170 | 256.28 | 34.0 | 5.0 |
| 12/30/2014 23:47 | 2.1 | 29.4 | MAINT | 1802.8 | MAINT | 170.5 171.8 | 256.2 | 33.9 | 4,9 |
| 12/30/2014 23:48 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 171.8 | 256.25 | 33.7 | 4.7 |
| 12/30/2014 23:49 | 2.1 | 29,4 | MAINT | 1814.2 | MAINT | 172 | 256.19 | 33.7 33.7 | 4.8 |
| 12/30/2014 23:50 | 2.1 | 29.4 | MAINT | 1814,2 | MAINT | 172 | 256.21 | 33.7 | 4.7 |
| 12/30/2014 23:51 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172.1 | 256.14 | 33.6 | 4.7 |
| 12/30/2014 23:52 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.33 | 33.7 | 4.7 |
| 12/30/2014 23:53 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172 | 256.39 | 33.7 | 4.7 |
| 12/30/2014 23:54 | 2.1 | 29.4 | MAINT | 1816,5 | MAINT | 172 | 256.1 | 33.6 | 4.7 |
| 12/30/2014 23:55 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.17 | 33.6 | 4.7 |
| 12/30/2014 23:56 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.34 | 33.7 | 4.7 |
| 12/30/2014 23:57 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 171.8 | 256.08 | 33.7 | 4.7 |
| 12/30/2014 23:58 12/30/2014 23:59 | 2,1 2,1 | 29.4 | MAINT | 1811.9 | MAINT | 172 | 256.31 | 33.8 | 4.8 |
| 12/30/2014 25:59 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 172 | 256,16 | 33,7 | 4.7 |
| 12/31/2014 0:00 | 2.1 | 29.4 | MAINT | | | 474.0 | | | 68 |
| 12/31/2014 0:01 | 2.1 | 29.4 | MAINT | 1814.2 1816.5 | MAINT MAINT | 171.8 | 256.05 | 33.7 | 4.7 |
| 12/31/2014 0:02 | 2.1 | 29.4 | MAINT | 1818.8 | MAINT | 172 172.2 | 256.13 | 33.6 | 4.7 |
| 12/31/2014 0:03 | 2.1 | 29.4 | MAINT | 1818.8 | MAINT | 172.2 | 256.38 | 33.6 | 4.7 |
| 12/31/2014 0:04 | 2.1 | 29.4 | MAINT | 1818.8 | MAINT | 172.1 | 256.24 256.33 | 33.6 | 4.7 |
| 12/31/2014 0:05 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172.1 | 256.16 | 33.6 33.6 | 4.7 |
| 12/31/2014 0:06 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 172.1 | 256.13 | 33.5 | 4.7 4.7 |
| 12/31/2014 0:07 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 171.8 | 256.21 | 33.7 | 4.7 |
| 12/31/2014 0:08 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172.2 | 256.11 | 33.6 | 4.7 |
| 12/31/2014 0:09 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.24 | 33.7 | 4.7 |
| 12/31/2014 0:10 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 172.1 | 256.12 | 33.7 | 4.7 |
| 12/31/2014 0:11 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.16 | 33.6 | 4.7 |
| 12/31/2014 0:12 | 2.1 | 29,4 | MAINT | 1816.5 | MAINT | 171.8 | 256.16 | 33.6 | 4.7 |
| 12/31/2014 0:13 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172 | 256,35 | 33.7 | 4.7 |
| 12/31/2014 0:14 | 2.1 | 29.4 | MAINT | 1818.8 | MAINT | 172 | 256.28 | 33.6 | 4.7 |
| 12/31/2014 0:15 12/31/2014 0:16 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.8 | 256.46 | 33.7 | 4.7 |
| 12/31/2014 0:16 | 2.1 | 29.4 29.4 | MAINT | 1811.9 | MAINT | 171.8 | 256.29 | 33.7 | 4.8 |
| 12/31/2014 0:18 | 2.1 | 29.4 | MAINT MAINT | 1814.2 1814.2 | MAINT | 172.2 | 256.26 | 33,7 | 4.7 |
| 12/31/2014 0:18 | 2.1 | 29.4 | MAINT | 1814.2 1816.5 | MAINT MAINT | 171.9 | 256.12 | 33.7 | 4.7 |
| 12/31/2014 0:20 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172 | 256.32 | 33.7 | 4.7 |
| 12/31/2014 0:21 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172.1 171. 9 | 256.04 | 33.7 | 4.7 |
| 12/31/2014 0:22 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.17 | 33.6 | 4.7 |
| 12/31/2014 0:23 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.9 | 256.2 256.28 | 33.7 33.7 | 4.7 |
| 12/31/2014 0:24 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 171.8 | 256.28 | 33,6 | 4.7 4.7 |
| 12/31/2014 0:25 | 2.1 | 29.4 | MAINT | 1814.2 | MAINT | 171.8 | 256.34 | 33.0 | 4.7 4.8 |
| 12/31/2014 0:26 | 2.1 | 29.4 | MAINT | 1816.5 | MAINT | 172.1 | 256.31 | 33.7 | 4.8 |
| 12/31/2014 0:27 | 2,1 | 29.4 | MAINT | 1814.2 | MAINT | 172 | 256.24 | 33.7 | 4.7 |
| | | | | | | | · · · · | | · ; |

| Intenting Under 1 Under 1 Under 2 | | n nerot i su brit Maria | | TABU | 32-NECA | GENANUDI | DAITA | | | |
|---|-------------------------|----------------------------|------------------|---------------|----------------|---------------|------------------|-------------|-----------|----------|
| International and the set of the | | • | lindated SC8 NOv | (Turbine - 1) | (Turbine - 1) | (Turbine - 1) | (Turbing 1) | (Turbing 1) | | |
| Display Data memory is an analysis Data memory is an analysis Display Display <thdisplay< th=""> <thdisplay< th=""> <thdisp< td=""><td>Timestamp</td><td>••</td><td></td><td>SCR NOx ppm</td><td></td><td></td><td>• • •</td><td>• •</td><td>NH3 Inlet</td><td>NH3 Slip</td></thdisp<></thdisplay<></thdisplay<> | Timestamp | •• | | SCR NOx ppm | | | • • • | • • | NH3 Inlet | NH3 Slip |
| 13/12/1016 D29 2.1 38.4 MAMIT 118.5 MAMIT 17.2 25.5 33.7 47. 13/12/1016 D2 2.1 38.4 MAMIT 113.5 MAMIT 17.2 22.5 33.7 47. 13/12/1016 D2 2.1 38.4 MAMIT 113.5 MAMIT 17.2 22.5 33.7 47. 13/12/1016 D2 2.1 2.8 MAMIT 113.5 MAMIT 17.2 22.5 33.7 42. 13/12/1016 D2 2.1 2.8 MAMIT 113.5 MAMIT 17.1 22.5 33.7 42. 13/12/1016 D2 2.1 2.8 MAMIT 113.2 MAMIT 113.2 2.8 33.7 4.7 13/12/1016 D2 2.1 2.8 MAMIT 113.2 MAMIT 113.2 2.8 33.7 4.7 13/12/1016 D2 2.1 2.8 MAMIT 113.2 MAMIT 113.2 MAMIT 113.2 MAMIT 113.2 34.7 17 </td <td></td> <td></td> <td></td> <td>1</td> <td>mmBtu/hr 1-Min</td> <td>1-Min</td> <td>wegewater z-wait</td> <td></td> <td></td> <td>i</td> | | | | 1 | mmBtu/hr 1-Min | 1-Min | wegewater z-wait | | | i |
| 121/20/2016 200 2.1 29.4 MAMPT 110.5 MAMPT 110.2 MAMPT | | | | | | | | | | |
| 12/2/2016.003 2.1 3.4 MANT 135.5 MANT 17.2 26.2 3.7 4.7 12/2/2016.03 2.1 3.4 MANT 131.5 MANT 17.2 25.5 3.8 4.7 12/2/2016.03 2.1 3.4 MANT 131.5 MANT 131.4 25.6 3.7 4.7 12/2/2016.03 2.1 2.4 MANT 131.5 MANT 131.4 25.6 3.7 4.7 12/2/2016.03 2.1 2.4 MANT 131.4 25.4 MANT 131.4 25.6 3.7 4.7 12/2/2016.04 2.1 2.4 MANT 131.4 3.4 MANT 131.4 3.6 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 12/2/2016.04 1.1 2.4 MANT 131.5 MANT 172.3 25.5 3.7 4.7 | | | | | | | | | | |
| 12/12/12/12/12/12 23.4 MANT 135.5 MANT 127.2 25.6 33.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.9 MANT 131.9 35.6 33.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.9 MANT 131.9 35.6 33.7 4.8 12/12/12/14/34 3.1 3.4 MANT 131.9 MANT 131.9 35.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.5 MANT 171.2 35.8 33.7 4.7 12/12/12/14/34 3.1 3.4 MANT 131.5 MANT 171.7 23.6 3.7 4.7 12/12/12/14/14 3.1 2.5.4 MANT 131.5 MANT 172.7 23.6 3.7 4.7 12/12/12/14/14 3.1 2.5.4 MANT 131.5 MANT 172.7 23.6 3.7 4.7 12/12/12/14/14/14 5.1 2.5.4 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<> | | | | | | | | | | |
| 13/12/1014 23.4 13.4.4 MANT 1312.5 MANT 17.1.2 23.6.3 3.7. 4.2. 13/12/1014 23.1.2 23.4.4 MANT 131.5. MANT 17.1.3 23.6.4 23.7. 4.2. 13/12/1014 23.1.2 23.4.4 MANT 131.5. MANT 17.1.3 23.6.4 23.7. 4.2. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.1.3 23.6.2 23.7. 4.2. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.2. 25.8.3 23.7. 4.7. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.2. 25.8.3 3.7. 4.7. 13/12/1014 23.4.2 23.4.4 MANT 131.5. MANT 17.2. 25.6.3 3.7. 4.7. 13/12/1014 23.4.1 MANT 131.5. MANT 17.2. 25.6.3 3.7. 4.7. 13/12/1014 23.4.2 MANT 131.2 MANT 17.2.3 25.6.3 3.7. 4.7. 13/12/1014 23.4.4 MANT 131.2 MANT 131.2 3.8.4.4 3.7. 4.7. <td>· · · ·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | · · · · | | | | | | | | | |
| 13/12/1004 054 2.1 2.34 MART 131.9 MART 171.8 252.8 32.7 4.8 12/0/1004 057 2.1 2.34 MART 131.5 MART 171.9 255.37 30.7 4.8 12/0/1004 057 2.1 2.34 MART 131.6.5 MART 172.9 255.37 30.7 4.7 12/0/1004 059 2.1 2.34 MART 131.6.2 MART 172.1 255.23 30.7 4.7 12/0/1014 062 2.1 2.34 MART 131.6.2 MART 131.6.2 MART 132.8 30.7 4.7 12/0/1014 064 2.1 2.34 MART 131.5.3 MART 172.9 256.0 30.7 4.7 12/0/1014 064 2.1 2.34 MART 131.3.5 MART 172.9 256.2 30.7 4.7 12/0/1014 064 2.1 2.34 MART 131.3.5 MART 172.9 256.2 30.7 4.7 | 12/31/2014 0:33 | 2.1 | 29.4 | MAINT | | | | , | | |
| 12/12/004 0:5 2.1 254 MART 181.2 PART 171.2 253.7 407 12/2/014 0:3 2.1 234 MART 181.4.2 MART 171.4 255.27 33.7 4.7 12/2/014 0:3 2.1 234 MART 181.4.2 MART 171.4 255.27 33.7 4.7 12/2/014 0:3 2.1 234 MART 181.2 MART 171.2 255.27 33.7 4.7 12/2/014 0:4 2.1 234 MART 181.2 MART 171.2 255.8 35.6 4.7 12/2/014 0:4 2.1 234 MART 181.2 MART 172.1 256.0 33.7 4.7 12/2/014 0:46 2.1 234 MART 181.2 MART 172.1 256.0 33.7 4.7 12/2/014 0:46 2.1 234 MART 181.4.2 MART 172.1 256.0 33.7 4.7 12/2/014 0:46 2.1 2.34 MART 181.4.2 MART 172.1 256.4 33.7 4.7 | | | | MAINT | 1811.9 | MAINT | 171.8 | | | : |
| 12/12/12/12/12/12 25.4 MART 186.5 MART 171.8 25.21 33.7 4.7 12/12/12/16/09 2.1 23.4 MART 181.5 MART 172.1 255.3 33.7 4.7 12/12/12/16/09 2.1 23.4 MART 181.5 MART 172.1 255.2 35.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.2 MART 172.1 256.9 33.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.2 MART 172.1 256.0 33.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.2 MART 172.3 256.0 33.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.2 MART 171.3 256.3 33.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.5 MART 172.3 256.3 33.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.5 MART 172.3 256.3 33.7 4.7 12/12/12/16/06 2.1 23.4 MART 181.2 MART 172.3 256.8 33.7 4.7 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>256.16</td> <td>33.7</td> <td>4.8</td> | | | | | | | | 256.16 | 33.7 | 4.8 |
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| 12/12/12/02/03 3.1 25.4 MANT 194.2 MANT 17.1 25.6 3.5 4.7 12/12/12/04/03 3.1 25.4 MANT 191.5 MANT 17.1 25.6 3.5 4.7 12/12/12/04/04 3.1 25.4 MANT 191.2 26.6 3.7 4.7 12/12/12/04/04 2.1 25.4 MANT 191.2 24.6 3.7 4.7 12/12/12/04/04 2.1 25.4 MANT 191.2 25.63 3.7 4.7 12/12/12/04/04 2.1 25.4 MANT 191.2 26.63 3.8.7 4.6 12/12/12/04/05 2.1 25.4 MANT 191.2 26.63 3.7 4.7 12/12/12/04/05 2.1 25.4 MANT 191.2 25.63 3.7 4.7 12/12/12/04/05 2.1 25.4 MANT 191.2 26.64 3.7 4.7 12/12/12/04/05 2.1 25.4 MANT 191.2 MANT 191.2 26.64 3.7 4.7 12/12/12/04/05 </td <td></td> | | | | | | | | | | |
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| 1232/0204 046 2.1 22.4 MANT 131.2 MANT 171.4 256.08 33.7 4.6 1231/201 047 2.1 22.4 MANT 131.9 MANT 171.8 256.08 33.7 4.6 1231/201 047 2.1 22.4 MANT 131.2 MANT 172.1 256.38 33.7 4.6 1231/201 048 2.1 25.4 MANT 131.2 MANT 131.9 MANT 172.1 256.38 33.7 4.7 1731/201 046 2.1 25.4 MANT 131.5 MANT 131.5 MANT 172.1 256.48 33.7 4.7 1731/201 046 2.1 25.4 MANT 131.9 MANT 171.3 256.68 33.7 4.7 1731/201 046 2.1 25.4 MANT 131.9 MANT 172.2 25.18 33.7 4.7 1731/201 046 2.1 25.4 MANT 131.9 MANT 172.2 25.18 33.7 4.7 1731/201 046 2.1 25.4 MANT 131.9 | | | | | | | | 255 | 33.6 | 4.7 |
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| 12/12/1004 067 2.1 22.4 MANT 181.2 MANT 172.1 226.30 32.7 4.6 12/3/1004 068 2.1 22.4 MANT 181.2 MANT 172.1 226.30 33.8 4.6 12/3/1004 069 2.1 23.4 MANT 181.2 MANT 172.1 226.31 33.8 4.6 12/3/1004 063 2.1 23.4 MANT 136.5 MANT 172.1 256.61 33.7 4.7 12/3/1004 063 2.1 23.4 MANT 136.5 MANT 172.1 256.61 33.7 4.7 12/3/1004 055 2.1 23.4 MANT 181.9 MANT 172.1 256.61 33.7 4.7 12/3/1004 055 2.1 23.4 MANT 181.9 MANT 172.1 256.11 33.7 4.7 12/3/1004 058 2.1 23.4 MANT 181.9 MANT 172.2 256.11 33.7 4.7 12/3/1004 059 2.1 23.4 MANT 181.9 MANT 172.2 256.11 33 | | | | | | | | | | |
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| | 12/31/2014 1:41 | 1.95 | | 31.1 | 1814.2 | 4 | 172.1 | 259.91 | • | |

| | a en papa en porta de la compaña a compaña en porta de la compaña a compaña en porta de la compaña en porta de a compaña en porta de la compaña en porta de la compaña en porta de | | TABU | E 2 - RECA | CULATED (| DATIA | | | |
|-----------------|---|------------------------|---------------------------------------|---|---|----------------------------------|---------------------------------------|-----------|----------|
| Timestamp | (Turbine - 1) NOx ppm @15% O2 1-Min | Updated SCR NOx ppm | (Turbine - 1) SCR NOx ppm 1-Min | (Turbine - 1) Total Heat input mmBtu/hr 1-Min | (Turbine - 1) NH3 ppm @15% O2 1-Min | (Turbine - 1) Megawatts 1-Min | (Turbine - 1) NH3 Flow 1-Min lb/hr | NH3 Inlet | NH3 Slip |
| 12/31/2014 1:42 | 1.95 | + | 31 | 1814.2 | 3.94 | 171.8 | 259 | • | 3.94 |
| 12/31/2014 1:43 | 1.96 | - | 31.1 | 1811.9 | 3.83 | 171.9 | 258.03 | | 3.83 |
| 12/31/2014 1:44 | 2.03 | - | 31.3 | 1814.2 | 3.75 | | 258.45 | - | 3.75 |
| 12/31/2014 1:45 | 2.05 | - | 31.3 | 1811.9 | 3.69 | 171.7 | 258,01 | | 3.69 |
| 12/31/2014 1:46 | 2.06 | - | 31.6 | 1809.6 | 3.62 | 172.1 | 258.41 | - | 3.62 |
| 12/31/2014 1:47 | 2.16 | - | 31.7 | 1811.9 | 3,88 | 171.9 | 260.91 | | 3.88 |
| 12/31/2014 1:48 | 2.14 | - | 31.8 | 1811.9 | 3.86 | 172 | 261.21 | • | 3,86 |
| 12/31/2014 1:49 | 2.14 | - | 31.8 | 1811.9 | 3.93 | 171.9 | 262.02 | | 3.93 |
| 12/31/2014 1:50 | 2.06 | - | 31.4 | 1811.9 | 4.26 | 172.1 | 263.39 | | 4.26 |
| 12/31/2014 1:51 | 2.02 | - | 31.5 | 1814.2 | 4.11 | 171.9 | 263,69 | • | 4.11 |
| 12/31/2014 1:52 | 2.01 | - ! | 31.4 | 1811.9 | 4.25 | 171.8 | 263.91 | | 4.25 |
| 12/31/2014 1:53 | 2.03 | - | 31.6 | 1811.9 | 4.05 | 172.1 | 263.63 | | 4.05 |
| 12/31/2014 1:54 | 1.99 | - | 31.4 | 1809,5 | 4.16 | 171.9 | 263.7 | • | 4.16 |
| 12/31/2014 1:55 | 1.97 | - | 31,3 | 1811.9 | 4.16 | 171.7 | 263.16 | | 4.16 |
| 12/31/2014 1:55 | 2.03 | - | 31.7 | 1807.4 | 4.01 | 171.9 | 262.79 | - | 4.01 |
| 12/31/2014 1:57 | 2.02 | - | 31.5 | 1809.6 | 4.19 | 172 | 263.48 | - | 4.19 |
| 12/31/2014 1:58 | 2.01 | - | 31.6 | 1811.9 | 4.13 | 172 | 264.12 | - | 4.13 |
| 12/31/2014 1:59 | 1.99 | - | 31.5 | 1811.9 | 4.05 | 172 | 263.22 | - | 4.05 |
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| HR 22 | 7.8 |
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| HR 21 | 3.4 |
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| HR 21 | |

Appendix 10

Metcalf Energy Center Plume Log

Cooling Tower Plumes

| Date December 28, 2014 | Start Time 7:21 | End time 8:21 | Total Time 1:00 | Event Plume | Relative Humidity 88% | Temperature 37 deg F | Duct Burners Off | Plume Abatement on |
|---|----------------------------|------------------|--------------------|----------------|--------------------------|-------------------------|---|-----------------------------|
| Total Cooling Tov | wer Plume H | lours: | 1:00 | | | | | |
| Remedial Actions 1 | o Be Taken | | | | | | | |
| The Operator will ve The Operator will ve Curtail supplementation | erify that the lou | vers were co | | | | | | |
| Stack Plumes | | | | | | | an sa sang sa <u>ang sing sing sa</u> sa sa | an in 1970, an canadighters |
| Date No Plume Events in N | Start Time ovember 2014 | End time | Total Time | Event | Relative Humidity | Temperature | Duct Burners | Plume Abatement |
| Total Stack Plum | e Hours: | | 0:00 | | | | | |
| Remedial Action | ns Taken | | | | | | | |
| 1 The Operator will ev | perate the econ | omizer bypas | s valve. | | | | | |
| 1. The Operator will of | | | | | | | | |
| 2. Curtail steam injecti | | ustion turbine | (called PAG | steam). | | | | |

Metcalf Energy Center Plume Log

| Cooling Tower Plumes | | | | | | | | | |
|----------------------|------------|---------------------|---------------------------|---|------------------------------|--|--|--|--|
| End time | Total Time | Event | Relative Humidity | Temperature | Duct Burners | Plume Abatement | | | |
| | | | | | | | | | |
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| F | | | | | | | | | |
| | | | | | | | | | |
| 9:30 | 2:00 | Plume | 69% | 51 deg F | Off | On | | | |
| 8:21 | 1:00 | Plume | 88% | 37 deg F | Off | On | | | |
| | End time | End time Total Time | End time Total Time Event | End time Total Time Event Relative Humidity | 9:30 2:00 Plume 69% 51 deg F | End time Total Time Event Relative Humidity Temperature Duct Burners | | | |

Total Cooling Tower Plume Hours YTD: 3:00

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 No Plume Events in Ja | Start Time nuary 2014 | End time | Total Time | Event | Relative Humidity | Temperature | Duct Burners | Plume Abatement |
|--|--------------------------|----------------------|----------------|---------|----------------------------------|---|-------------------------------------|-------------------------------|
| No Plume Events in Fe | bruary 2014 | | | | | | | |
| No Plume Events in Ma | arch 2014 | | | | | | | |
| No Plume Events in Ap | nii 2014 | | | | | | | |
| No Plume Events in Ma | ay 2014 | | | | | | | |
| No Plume Events in Ju | ne 2014 | | | | | | | |
| No Plume Events in Ju | ly 2014 | | | | | | | |
| No Plume Events in Au | igust 2014 | | | | | | | |
| No Plume Events in Se | ptember 2014 | 4 | | | | | | |
| No Plume Events in Oc | tober 2014 | | | | | | | |
| No Plume Events in No | vember 2014 | | | | | | | |
| No Plume Events in De | cember 2014 | | | | | | | |
| Total Stack Plume H | lours YTD: | | 0:00 | | | | | |
| Remedial Actions | Taken | | | | | | | |
| 1. The Operator will operator will operator will operator 2. Curtail steam injectio 3. Curtail supplementar | n to the comb | oustion turbin | | steam). | | | | |
| ar Nahiman a contrational contra | averationing, "Ava me | erativita era krauer | ur sa harr har | | ningen up ogsekke eksensetsere e | en der der Kannen auf der Kannen d | anan ar an a series - se | ana politika sa shi si sava a |