DOCKETED	
Docket Number:	07-AFC-09C
Project Title:	Canyon Power Plant - Compliance
TN #:	236727
Document Title:	Canyon Power Plant Compliance Annual Report 2020
Description:	Annual Compliance Report
Filer:	Bertha A Hernandez
Organization:	City of Anaheim
Submitter Role:	Public Agency
Submission Date:	2/10/2021 1:41:25 PM
Docketed Date:	2/10/2021

Annual Compliance Report

City of Anaheim
Canyon Power Plant

Anaheim, California

SCAQMD
Facility ID: 153992

CEC Permit Number:
800-2010-001-CMF

Docket Number:
07-AFC-9C

2020
Period Range
January 1, 2020 through December 31, 2020

Review and Certification

I have reviewed both technically and editorially all details, calculations, results conclusions and other appropriate written material contained herein and hereby certify that to the best of my knowledge the material presented is true, accurate and complete.

I certify that the information contained in this report is true, accurate, and complete.

Ronald Hoffard	Generation Plant Manager
Name	Title
	2/08/2021
Signature	Date

Canyon Power Plant

Annual Compliance Report

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List of Attachments

Acronyms and Abbreviations

BHP	Break horse power
Btu	British thermal unit
BACT	Best available control technology
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
COA	City of Anaheim
CFR	Code of Federal Regulations
CPP	Canyon Power Plant
CT	Combustion turbine
DAHS	Data acquisition and handling
TDS	Total dissolved solids
DPF	Diesel particulate filter
EPA	Environmental Protection Agency
F.	Fahrenheit
ICE	Internal combustion engine
lbs/hr	pounds per hour
lb/lb-mol	pound per pound mol
MW	mega watts
MMBtu	million British thermal units
mmcf	million cubic feet
NH_3	ammonia
NO	Nitrogen Oxide
NO_x	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_2	Oxygen
ppm	parts per million
ppmc	parts per million corrected to 15% O_2
RATA	relative accuracy test audit
ROG	Reactive Organic Compounds
RTU	remote terminal unit
scf	standard cubic feet (standard temperature = 68 degrees F)
SCR	selective catalytic reactor
SCAQMD	South Coast Air Quality Management District
unit	The term unit refers to the boiler/steam turbine
VOC	Volatile Organic Compounds

1.0 Facility Description:

The City of Anaheim's (COA) Canyon Power Plant (CPP) facility is located at 3071 Miraloma Avenue in Anaheim California.

The facility consists of four natural gas fired General Electric, Model LM6000PC Sprint, simple cycle combustion turbine with water injection. The gas turbine was designed with a maximum heat input of 479 MMBtu per hour with a 46 degree Fahrenheit (F.) inlet air temperature. The units are equipped with an inlet air chiller designed to maintain the gas turbine inlet temperature at 46 degrees F. at full load.

Each unit is capable of generating 50.95 megawatts.

Carbon Monoxide (CO) emission from the gas turbine are controlled by utilizing a CO oxidation catalyst located between the gas turbine and the selective catalytic reactor (SCR). The CO oxidation catalyst controls the unit's CO and volatile organic compounds (VOC) emissions. The catalyst is guaranteed to reduce the unit's CO emission rate to a maximum of 4 ppm corrected to 15% O_2 (ppmc) and the VOC to 2 ppmc, both emission rates are based on a one (1) hour averages, dry basis at 15% O_2. The CO catalyst system was designed and supplied by Englehard/BASF.

The NO_x emissions from the gas turbine are controlled by the utilizing two (2) independent systems or techniques in series. The first system utilized on this unit is the water injection system.

Water is injected into the combustor suppressing the flame temperature and reducing the 1-hour average NO_x concentration to approximately 25 ppmc at 15% oxygen prior to entry into the SCR.

The second NO_x control system utilized by the unit is the NH_3/SCR system. After passing through the CO catalyst, the exhaust gases pass through an ammonia injection grid on its way to the SCR. The ammonia (NH_3) used at this facility is in the form a 19% by weight solution of ammonium hydroxide.

The SCR catalyst utilized by the unit for NO_x control was provided by Cormetech. The reaction between the NH_3 and the SCR catalyst reduces the existing NO_x to elemental nitrogen and water, resulting in NO_x concentrations in the exhaust gas at no greater than 2.5 ppmv at 15% O2 on a 1-hour average. The ammonia slip must be maintained below 5 ppm at 15% O2. Each SCR is vented through a dedicated stack, which is 11.8 ft diameter and 86 ft high.

The facility is also equipped with an 1141 BHP diesel emergency internal combustion engine (ICE) (black start engine) will be used to start up the plant in the event of a loss of grid power.

The ICE, is a Caterpillar, Model C-27, rated at 1141 BHP and fired on ultra low sulfur diesel fuel. The ICE, will serve to provide power to the plant during blackout conditions. The engine is certified by the SCAQMD as an EPA Tier 2 engine on 12/31/2010. The engine is required to be permitted, rather than registered, because CPP is a RECLAIM/Title V facility.

The black start engine will be used only in emergency situations where grid power from the COA's 69 kV system is unavailable to start the CTs. The black start engine will provide power to the turbine starter motors and various other necessary pieces of support equipment to get one of the gas turbines started. Once one of the turbines has been started and providing power to the

grid, the black start engine will be shut down.

The SCAQMD's rules limit operation of an emergency ICE to 50 hours per year.

The black start engine incorporates a diesel particulate filter (DPF), which is required by LAER. The Caterpillar DPF is designed to control the particulate emissions from diesel engines. The DPF consists of 2 filters, each 15-inches diameter by 15-inches long. The DPF system has been verified by CARB under Executive Order DE-14-006-01 to reduce emissions of diesel particulate matter consistent with a Level 3 device (greater than or equal to 85 percent reduction), when used with ultra low sulfur diesel with 15 ppm or lower sulfur content. As the DPF is CARB verified, a source test is not required. With the DPF, the particulate matter emissions from the engine is reduced from 0.15 g/bhp-hr to 0.0225 g/bhp-hr.

The DPF consists of a catalyzed cordierite ceramic honeycomb with hundreds of parallel channels, is designed to reduce emissions of particulate, carbon monoxide and hydrocarbons. The catalyst on the ceramic walls oxidizes carbon monoxide into carbon dioxide, and hydrocarbons into water and carbon dioxide. The arrangement of the channels is such that the exhaust gases carrying the carbon particles are forced through the fine pores of the walls, which filter out the particles. As the carbon particles are collected on the ceramic walls, the backpressure on the engine will increase. When the temperature of the exhaust is equal to or greater than 300 ºC (572 ºF) for at least 30% of the duty cycle, the catalyst interacts with the collected particulates to burn the particulates into carbon dioxide and water vapor, which will pass through the DPF.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 1

COMPLIANCE MATRIX

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 SCAQMD COMPLIANCE

AQMD Requirement	Limit	Limit	Period	Unit 1 Done	Unit 1 Due	Unit 2 Done	Unit 2 Due	Unit 3 Done	Unit 3 Due	Unit 4 Done	Unit 4 Due	Canyon Site Done	Canyon Site Due
CEMS Calibration Stack and Turbine	each 24 hours	Daily prior to fires lit	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
NOx pounds		RECLAIM RTC Holdings per AQMD records 60 days after the end of each quarter	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
NOx pounds monthly Electronic			15 days at the end of the month									1/15/21	2/15/21
NOx pounds quarterly Electronic			30 days at the end of the Quarter									1/30/21	4/30/21
QCER			30 days at the end of the first 3 calendar Quarters									10/20/20	2/28/21
NOx pounds Annual Permit Emissions Program report (APEP)			60 days after the end of the calendar year									2/25/20	2/28/21
RATA - RECLAIM/Acid Rain		Relative accuracy test of CEMS equipment	Every Six months or annually if incentive is met	7/21/20	9/30/21	7/23/20	9/30/21	10/13/20	12/31/21	11/4/20	6/30/21		
RATA - CO Spiking 218			Annually	7/21/20	9/30/21	7/23/20	9/30/21	10/13/20	12/31/21	11/4/20	6/30/21		
Ammonia slip		5 PPM	Every quarter 1st year then annually	7/21/20	9/30/21	7/23/20	9/30/21	10/13/20	12/31/21	11/4/20	12/31/21		
Particulate PM, VOC & SOx Tri-Annual Test		1.67 lb/hr; 2.0 ppm; .06 lb/MMbtu per unit	Every 3 years	7/21-22/20	9/30/23	7/23-24/20	9/30/23	10/13-14/20	12/31/23	114-5/20	6/30/22		
Particulate PM (per Permit met the 3-year cycle on 2017)		1.67 lb/hr	Every 18 months in a 3 year period	2/8/16	not required	2/9/16	not required	11/4/15	not required	114-5/20	6/30/22		
Fuel Flow, Pressure, & Temperature calibration	pass or fail	2% accuracy	Annually	5/4/20	5/4/21	5/7/20	5/7/21	5/18/20	5/18/21	5/13/20	5/13/21		
SCR Inlet temperature probe calibration			Annually	1/15/20	1/15/21	1/15/20	1/15/21	1/15/20	1/15/21	1/15/20	1/15/21		
SCR differential pressure calibration	pass or fail	2% accuracy	Annually	1/14/20	1/14/21	1/14/20	1/14/21	1/14/20	1/14/21	1/14/20	1/14/21		
Ammonia flow meter	pass or fail	2% accuracy	Annually	4/6/20	4/6/21	4/2/20	4/2/21	3/26/20	3/26/21	3/20/20	3/20/21		
CEMS enclosure Temperature element calibration	pass or fail	2% accuracy	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
Regenerate Diesel Particulate Filter	Every 24 Cold starts or Back Pressure (Yellow light) greater then 36 INCH/H2O											2/25/20	24 starts
Diesel NOx pounds quarterly electronic		RECLAIM RTC Holdings	15 days after the end of the quarter									1/12/21	4/30/21
Power Washer NOx Pounds Qtrly Electronic												1/12/21	4/30/21
Diesel tune up (Annual)	Manufactures specifications	4 degrees retarded	Annually									7/14/20	7/30/21
Metal Coating Log - Rule 1107 (VOC)		Log coatings used on site	Annually									12/31/20	12/31/21
Natural Gas Sample analysis	Manufactures specifications	0.25 grains H2S/100 scf	Monthly									12/3/20	1/30/21
218 report (non-RECLAIM elements)		PPM & Emission Rates	Semi-annual									1/27/21	7/30/21
Title V Permit Renewal (Application submitted 2/25/2020) (due to AQMD 180 days prior to 11/5/20 (M		Compliance Report	Every 5 years; Apply 180 days prior to expiration;									11/6/15	11/5/20
Title V 500 SAM Report		Compliance Report	Semi-annual									7/29/20	2/28/21
Title V 500 ACC Report		Compliance Report	Annually									2/25/20	3/1/21
Annual Emissions Report (AER)		Compliance Report	75 days at the end of calendar year									3/12/20	3/17/21
RECLAIM equipment breakdown	Upon Discovery	Upon Discovery	Verbal report to AQMD within 1 hour of discovery										
Non-RECLAIM equipment breakdown	Upon Discovery	Upon Discovery	Verbal report to AQMD within 24 hours of discovery										
Stack NOx Limit	2.5 parts per million	2.5 PPM	60 minute average										
Ammonia Slip Limit	5 parts per million	5 PPM	60 minute average										
Start-up NOx Limit	14.27 pounds	14.27 lbs per 60 min	60 minute average										
Shut-down NOx Limit	4.07 pounds	4.07 lbs per 60 min	10 minutes average										
**Maintenance Operations NOx Limit	44.0 pounds	44.0 lbs in any hour	60 minute average										
CO Limit	4.0 parts per million	4 PPM	60 minute average										
Start-up CO Limit	11.6 pounds	11.6 lbs per 60 min	60 minute average										
Shut-down CO Limit	4.15 pounds	4.15 lbs per 60 min	10 minute average										
**Maintenance Operations CO Limit	19.5 pounds	19.4 lbs in any hour	60 minute average										
ROG Limit	2.0 parts per million	2 PPM	60 minute average										
Start-up ROG Limit	1.29 pounds	1.29 lbs per 60 min	60 minute average										
Shut-down ROG Limit	1.27 pounds	1.27 lbs per 60 min	10 minutes average										
VOC Limit	412 pounds	412 lb/mo per unit	Monthly										
PM-10 Limit	540 pounds	540 lb/mo per unit	Monthly										
SOX Limit	108 pounds	108 lb/mo per unit	Monthly										
VOC Limit	3608 pounds	3608 lbs/yr per unit	Annual										
PM-10 Limit	4822 pounds	4822 lbs/yer per unit	Annual										
SOX Limit	971 pounds	971 lbs/year per unit	Annual										
Start-ups Limit	240 pounds	540 starts per unit	Year										

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 SCAQMD 500-N REPORTS

No.	Unit No.	Description	AQMD Permit Limit	Actual Emissions	Duration	Date of Episode	Reported to AQMD	500N sent to AQMD	Inspector Site Visit	Notice of Violation	Responsible	Resolution/Comments
58	Unit 2	Fuel Flow converter malfunction	COlbs>11.6	13.10lbs	15 min	5/30/20	5/30/20	6/3/20	No	No	Hoffard/Hernandez	Replaced converter
59	Unit 3	H2O injection valve issue	NOx lbs > 14.27 lbs	36 lbs	60 min	11/2/20	11/2/20	11/4/20	No	No	Hoffard/Hernandez	Replaced two relays to the valves electronic control system

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 ENFORCEMENT ACTION NOTICES

NTC or NOV	No.	Description	Date Issued	Compliance Due Date	Response Submitted	Responsible	Resolution/Comments

No NOV or NC issued in 2020

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 CEC REPORTING

CEC Requirement	Period	Last Done	Next Due	Responsibility	Comments
CEC 1304	varies one to two months after the quarter	1/25/21	4/30/21	Hoffard/Hernandez	
CEC 1306C	Semi-Annual	1/28/21	4/30/21	Stambler/Hoffard	
CEC Annual Report	30 days at end of calender year	1/30/20	1/31/21	Hoffard/Hernandez	
CEC Quarterly Operations Report	30 days at end of each quarter	1/30/21	4/30/21	Hoffard/Hernandez	
Building and structure inspection	Semi-annually	12/30/20	6/30/21	Hoffard/Hernandez	
Legionella/TDS - PM10 calculation	Quarterly	12/1/20	3/31/21	Hoffard/Truesdail	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 CEC REPORTING

CEC Requirement	Period	Last Done	Next Due	Responsibility	Comments
CEC 1304	varies one to two months after the quarter	1/25/21	4/30/21	Hoffard/Hernandez	
CEC 1306C	Semi-Annual	1/28/21	4/30/21	Stambler/Hoffard	
CEC Annual Report	30 days at end of calender year	1/30/20	1/31/21	Hoffard/Hernandez	
CEC Quarterly Operations Report	30 days at end of each quarter	1/30/21	4/30/21	Hoffard/Hernandez	
Building and structure inspection	Semi-annually	12/30/20	6/30/21	Hoffard/Hernandez	
Legionella/TDS - PM10 calculation	Quarterly	12/1/20	3/31/21	Hoffard/Truesdail	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 CAL ARP

California Accidental Release Prevention Program	Period	Last Done	Next Due	Responsibility
Hazard Review - 19% Aqua Ammonia System	Every 5 years	06/01/16	6/30/21	Hoffard/AFD
Compliance Audit	Every three years	2/19/20	2/19/23	Ralph McCaffrey
Ammonia Refresher Training	Every three years	N/A	N/A	Hoffard/McCaffrey

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 CAL RMP REPORTING

Limit	Period	Last Done	Next Due	Responsible
Not Applicable	Due Annually (March 1 Each Year)	2/18/20	3/1/21	Hernandez/Hoffard
Not Applicable	Due Annually	9/7/20	6/30/21	Hernandez/Hoffard

California Air Resources Board
Stationary Equipment Refrigerant Management Program (RMP)
Canyon Power Plant (CPP) Compliance Guidance

Compliance Year: **2020**

Facility Size Classification: Large (at least 1 unit w/≥ 2000 lbs high GWP-refrigerant capacity)

Annual Fee: **$370.00** (Fees must be paid annually by the reporting deadline)

No. of Refrigeration Systems: 2 (CH-100, CH-200)

Location(s): Both chillers are located in the Northeast portion of facility footprint, just South of two water storage tanks.

Refrigeration System Specifications

CH-100: Centrifugal Chiller w/5200 lbs R-123 (full charge), Trane, Model No. CDHF3000, Serial No. L10B00882;
> ALDS ID: **301-IRF A**: Vulcain/Honeywell, Model No. 301-EM, Concentration Monitor (Direct System), 2 Infared Sensors

			Done		
Last System Audit:	**Next audit target:**	6/30/2020	9/4/20	**Deadline:**	12/31/2020
Last Calibration:	**Next calibration target:**	6/30/2020	9/8/20	**Deadline:**	12/31/2020

CH-100: Centrifugal Chiller w/5200 lbs R-123 (full charge), Trane, Model No. CDHF3000, Serial No. L10A00350;
>ALDS ID: **301-IRF B**: Vulcain/Honeywell, Model No. 301-EM, Concentration Monitor (Direct System), 2 Infared Sensors

Last System Audit:	**Next audit target:**	6/30/2020	9/4/20	**Deadline:**	12/31/2020
Last Calibration:	**Next calibration target:**	6/30/2020	9/8/20	**Deadline:**	12/31/2020

CARB Reporting (due by 3/1 each year)

Last CARB Report: 2/28/2020 for 2019 **Next reporting deadline:** 3/1/2021 (Fee payment due on or before this date)

Automatic Leak Detection System Requirements

●Each system must be audited and calibrated using manufacturer's recommended procedures to ensure that the system:

1.) accurately detects a concentration level of 10 parts per million of vapor of the specific refrigerant used in the system; and
2.) alerts the operator when a refrigerant concentration of 100 parts per million of vapor of the specific refrigerant is reached.

●The audit and calibration must be completed on each leak detection system at least once per calendar year.

●If an automatic leak detection system alerts plant operators, a leak inspection must be conducted within 24 hours after the system alert.
●This leak inspection must be completed using a calibrated refrigerant leak detection device or a bubble test to aonfirm a refrigerant leak and to determine the leak location(s).
●If during a required leak inspection or at any time oil residue is observed indicating a refrigerant leak, a leak inspection must be conducted using a calibrated refrigerant leak detection device or a bubble test to confrim the leak.
●A leak inspection must be conducted using a calibrated refrigerant leak detection device, a bubble test, or observation of oil residue, each time an additional refrigerant charge equal to or greater than 5 pounds, or one percent of the refrigeration system full charge (whichever is greater), is added to the system.

Leak Repairs and Subsequent Leak Inspection Requirements

●A refrigerant leak must be repaired by an EPA-certified technician holding a current and active C38 - Refrigerantion Contractor's license, or by an employee of a contractor with these qualifications.
> A contractor's license is not required if:
1.) a City employee services or repairs the system and wages are sole compensation; or
2.) the City performs the service or repair through one undertaking, or by one or more contracts, and the aggregate contract price for labor, materials, and all other items is less than $500; or
3.) the service or repair is performed pursuant to a contract entered into before 1/1/2011, by the City.

●Leaks must be repaired within 14 days of detection, unless a longer time period is allowed (*)

*45-day allowance if ANY of the following criteria is met:
1.) A certified technician is not available to complete the repair or replace the component(s). This must be documented in writing per recordkeeping requirements;
2.) The parts necessary to repair a refrigerant leak are unavailable, and the operator obtains a written statement from the refrigeration system or component manufacturer or distributor stating that the parts are unavailable. This must be documented in writing per recordkeeping requirements; or
3.) The re refrigerant leak repair requires an inductrial process shutdown that results in a process temporarily ceasing to manufacture the intermediate or final product that is produced when the industrial process refrigeration appliance is in operation.

*120-day allowance if ALL of the following criteria is met:

1.) The facility is an entity subject to Mandetory Greenhouse Gas Emissions Reporting requirements;
2.) The refrigeration system is an inductrial process refrigeration applicance;
3.) The refrigerant leak repair requires an industrial process shutdown that results in a process temporarily ceasing to manufacture the intermediate or final product that is produced when the industrial process refrigeration appliance is in operation; and
4.) Written records are maintained to document that all of the conditions are met.

●An initial verification test must be performed upon completion of refrigerant leak repairs.

●A follow-up verification test must be conducted on the complete refrigeration system after the initial verification test.
> If the system was evacuated during the refrigerant leak repair, then this test should be conducted when the system is operating at normal operating characteristics and conditions.
> If the system was not evacuated during the refrigerant leak repair, then the follow-up verification test requirement is satisfied once the required changes are made to return the refrigeration system to normal operating characteristics and conditions.

●If either the initial or follow-up verification tests indicate that a refrigerant leak is still occuring, the leak must be repaired within 14 days (unless a longer time period is allowed*).
> A retrofit or retirement plan may also be prepared in lieu of this repair.

●If a follow-up verification test indicates that a refrigerant leak has not been successfully repaired within the 14 days allowed, and no exemption has been received, then:
> successfully repair the leak within 45 days of the initial leak detection; or
> prepare a retrofit or retirement plan within 60 days of the initial leak detection.

●If a follow-up verification test indicates that a refrigerant leak has not been successfully repaired within the 45 days allowed(*), and no exemption has been received, then:
> prepare a retrofit or retirement plan within 60 days of the initial leak detection.

●If a follow-up verification test indicates that a refrigerant leak has not been successfully repaired within the 120 days allowed(*), and no exemption has been received, then:
> prepare a retrofit or retirement plan within 135 days of the initial leak detection.

Retrofit or Retirement Plan Requirements

●If required to prepare a retirement or retrofit plan, the plan must establish a schedule to retrofit or retire the leaking system no later than six months after the intial leak detection, and all work must be completed during the 6-month period.
●The plan must be kept on-site where the leaking system is located.
●If a refrigeration system is to be retired and replaced, the plan must include information specific to the new refrigeration system to be constructed or installed. (**)
●If a refrigeration system is to be retrofitted, the plan must include information specific to the refrigeration system after the retrofit has been completed. (**)

** A retrofit or retirement plan must include the following information:

1.) The system identification number of the refrigeration system being retired or retrofitted;
2.) equipment type;
3.) equipment manufacturer;
4.) equipment model or description;
5.) intended physical location of the refrigeration system through schematic or floor plan with locations clearly noted;
6.) temperature classification (i.e., low, medium, other);
7.) full charge of refrigeration system;
8.) type of refrigerant used;
9.) if the refrigeration system is to be retired and replaced, a plan to dispose of the retired system;
10.) a timetable which includes, at a minimum:
> the date installation, construction, or retrofit of the refrigeration system is expected to begin, and
> the expected completion date of the installation, construction, or retrofit of the refrigeration system; and
11.) A signature by a representative of the facility, including the date.

●If the system is being mothballed, these requirements do not apply until the day that the refrigeration system resumes operation at a facility.
●If an exemption has been received, then the preparation and implementation of a retrofit or retirement plan is not required during the exemption time period. If an exemption request has been submitted, then the plan preparation or implementation is not required until a final exemption determination is made.

Recordkeeping Requirements

●Maintain the following records for a minimum of 5 years:

1.) All registration information required by the rule;
2.) documentation of all leak detection systems, leak inspections, and automatic leak detection system annual audit and calibrations;
3.) records of refrigeration system service and refrigerant leak repairs, and any documentation of conditions allowing repair to be

conducted more than 14 days after leak detection;

4.) retrofit or retirement plans;
5.) all CARB reports;
6.) any application for exemption, and any notification of an exemption approved, denied, revoked, or modified;
7.) invoices for all refrigerant purchases;
8.) records of all shipments of refrigerants for reclamation or destruction, to include:
    - > Name and address of the person the refrigerant was shipped to;
    - > Weight in pounds of refrigerant shipped;
    - > type of refrigerant shipped;
    - > date of shipment;
    - > purpose of shipment (i.e., reclamation, destruction, etc.);
9.) records of all refrigeration systems component data, measurements, calculations and assumptions used to determine the full charge.

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 CITY REPORTING

Anaheim Requirement	Period	Last Done	Next Due	Responsibility
Certified (Facility) Fire Protection Systems Inspection	Semi-Annual	5/15/20	5/20/21	Hoffard
Electric protection relays	5-years	5/1/16	5/1/21	Hoffard
8-Hour refresher HAZWOPER	Annual	6/17/20	6/17/21	Hoffard/Ralph McCaffrey
Oil Spill Prevention, Control and Countermeasure Plan	5-years	12/7/16	12/7/21	McCaffrey/Hoffard
Hazardous Materials Business Plans (CERS)	Annual	3/24/20	3/24/21	McCaffrey/Hoffard

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 EIA REPORTING

EIA Requirement	Period	Last Done	Next Due	Responsibility	Comments
EIA 860-A	Annual	2/11/20	3/9/21	Hoffard/Hernandez	
EIA-923-M	Monthly	1/19/21	2/28/21	Hoffard/Hernandez	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 OSHA REPORTING

OSHA Requirement	Period	Unit 1 Done	Unit 1 Due	Unit 2 Done	Unit 2 Due	Unit 3 Done	Unit 3 Due	Unit 4 Done	Unit 4 Due	Canyon Site Done	Canyon Site Due	Responsible
LM6000 Overhead Crane inspection	Annually	1/10/20	1/10/21	1/16/20	1/16/21	1/17/20	1/17/21	1/17/20	1/17/21			Hoffard
Warehouse Crane inspection	Annually									1/16/20	1/23/21	Hoffard
LM6000 Overhead Crane load test	Every 4 years	12/9/20	12/9/24	12/11/20	12/11/24	11/14/16	11/14/20	10/12/20	10/12/24			Hoffard
Warehouse Crane load test	Every 4 years									12/16/20	12/16/24	Hoffard
Fuel Gas system safeties - CTG	Tri-Annual									5/27/19	5/27/22	Hoffard
Fuel Gas system safeties - Gas Yard	Tri-Annual									5/27/19	5/27/22	Hoffard
Instrument Air system safeties	Every 5 years									10/17/16	10/17/21	Hoffard
Ammonia tank system safeties	Updated Every 4 years									11/8/16	11/30/20	Hoffard
Air Pressure tank inspection / permit renewal	Every 5 years									9/16/16	9/16/21	Hoffard/HSB insurance

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 EPA REPORTING

EPA Requirement	Period	Unit 1 Done	Unit 1 Due	Unit 2 Done	Unit 2 Due	Unit 3 Done	Unit 3 Due	Unit 4 Done	Unit 4 Due	Responsible
Linearity Test	anytime within the quarter	10/5/20	3/31/21	10/6/20	3/31/21	10/7/20	3/31/21	11/3/20	3/31/21	Montrose/Hoffard/Hernandez
Electronic Data Report (EDR)	15 days at the end of the Quarter	1/21/21	4/30/21	1/21/21	4/30/21	1/21/21	4/30/21	1/21/21	4/30/21	B&W/Hernandez/Hoffard
Greenhouse gas monitoring report	Annually	3/12/20	3/31/21	3/12/20	3/31/21	3/12/20	3/31/21	3/12/20	3/31/21	Hernandez/Hoffard
EPA Form 500 ACC	Annually	2/28/20	3/1/21	2/28/20	3/1/21	2/28/20	3/1/21	2/28/20	3/1/21	Hernandez/Hoffard

Spill Prevention, Control and Countermeasures Plan	Period	Last Done	Next Due	Responsibility	Comments
SPCC Facility Inspection	Monthly	12/3/20	1/30/21	Hernandez	

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 FIRE CODE REPORTING

Fire Code Requirement	Period	Last Done	Next Due	Responsibility
Fire detection system certification	Annual	5/14/20	5/20/21	Hoffard/Fire Protection Systems
Fire detection system inspection	Semi-annual	11/20/20	5/20/21	Hoffard/Fire Protection Systems
CO 2 cylinder (weight)	Annual	5/13/20	5/20/21	Hoffard/Fire Protection Systems

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 OCSD REPORTING

OCSD Requirement	Period	Last Done	Next Due	Responsibility
Permit # 1-600296				
Effluent Meter reading Report	Monthly	1/1/21	2/1/21	Operator/Hoffard/Hernandez
Effluent Sample collection (BOD/TSS)	semi-annual	10/28/20	4/30/21	Sanks/Hernandez/Hoffard
Effluent Meter Certification	Annual	1/20/21	1/10/22	Sanks/Hernandez/Hoffard
Class I Permit Renewal	every 2 years	3/31/19	3/31/21	Sanks/Hernandez/Hoffard
Backflow Inspection	Annual	11/3/20	11/30/21	Hernandez/Hoffard
Reclaim Water Testing (City of Anaheim)	Every 3 years	12/16/20	12/30/23	Hoffard/Hernandez

CANYON POWER PLANT COMPLIANCE MATRIX

CY 2020 WQMP REPORTING

Storm Drain Systems	Period	Last Done	Next Due	Responsibility
Catch Basins (25) inspection	Semi-Annual (in-house)	6/9/20	6/30/21	Hernandez/Hoffard
Infiltration Vault	Annual Inspection	6/9/20	6/30/21	Hernandez/Hoffard
Contech Storm Filters	Annual Inspection	6/9/20	6/30/21	Hernandez/Hoffard

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 2

FACILITY OPERATIONAL STATUS REPORT

Overall Project Status

Canyon Power Plant construction was completed in August 2011. Units 3 and 4 were ready for commercial operation on July 27, 2011. Units 1 and 2 were ready for commercial operation on September 15, 2011. All four gas turbines completed commissioning and were in commercial operation for the entire compliance year 2020.

No changes to the operational status of the facility implemented or planned in 2020 year.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 3

CEC APPROVED POST CERTIFICATION CHANGES

No California Energy Commission (CEC) approved post certification changes

A Title V permit renewal in CY 2020 was initiated and Canyon Power Plant is waiting for the final Title V facility permit to be issued by SCAQMD.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 4

MISSED SUBMITTAL DEADLINES

Canyon Power Plant submitted all required compliance reports on the due dates and no missed submittal deadlines for CY 2020.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 5

PERMIT FILINGS AND PERMITS ISSUED

DURING THE PERIOD

Canyon Power Plant submitted a Title V Renewal application to SCAQMD and is awaiting the issuance of the permit.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 6

PROJECTED COMPLIANCE TESTING

FOR THE NEXT YEAR

Projected Environmental Compliance Testing schedule in CY 2020:

Compliance Test	Frequency	Scheduled Quarter
NH3 Slip Test	Annual	3Q; 4Q
RATA Test	Annual or Semi-Annual	2Q; 3Q; 4Q
Cooling Tower TDS/PM10	Quarterly	All four Quarters
Cooling Tower Legionella	Quarterly	All four Quarters
Fuel H_2S Test	Monthly	January through December
Fuel Flow Accuracy	Annual	2Q; 3Q
SCR Differential Pressure	Annual	2Q
SCR Inlet Temperature	Annual	2Q
NH3 Flow Meter Calibration	Annual	2Q
Linearity/CGA Test	Quarterly	All four Quarters
PM10/SO_2/VOC	Triennial	None

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 7

ADDITIONS TO ON-SITE COMPLIANCE FILE

GENERAL PLANT
Cooling Tower Legionella test report
Cooling Tower PM10 test reports
Monthly Waste Water reports
Monthly Potable water use reports
Monthly Reclaim water use reports
Monthly natural gas burn records
Monthly natural H_2S gas test reports
Refrigerant monitor calibration report
RECLAIM RTC holdings records

CEC
Quarterly reports
Quarterly 1304 Report
Annual report
Potable water use records

CAISO
Certificate of Compliance

CARB
Greenhouse gas records
Annual refrigerant report
Annual SF6 use report

DIESEL ENGINE
Maintenance Reports
Fuel purchase records
Engine run-time records
HiBack calibration report
Engine tune up report

EIA
Annual/Monthly EIA 923 report
Annual EIA 860 report

EPA
Part 98 Greenhouse Gas reports
Certificate of Representation forms

RECLAIM
Daily submittals
Monthly submittals
Quarterly submittals
SCAQMD QCER Forms
SCAQMD 500-N Forms
SCAQMD 500-SAM Forms
SCAQMD 500-ACC Form
SCAQMD APEP Form
SCAQMD AER Report
SCAQMD Rule 218 Semi-annual reports

SCAQMD
NOV & NTCs issued by the SCAQMD
SCAQMD responses to 500-N forms

UNIT 1:

EPA
Quarterly Acid Rain report
Quarterly Acid Rain report & feedback report
Annual Form 500-ACC

Calibration Records
Fuel flow meter calibration report
Water flow meter calibration report
NH3 flow meter calibration report
SCR DP transducer calibration report
SCR inlet temperature transducer Cal report
SCR outlet temperature transducer Cal report

Calibration gas logs
Linearity test reports
Part 75 RATA test reports
RECLAIM RATA test reports
Rule 218 (CO) RATA test reports
NH3 slip test reports

Tri-ennual compliance testing:
VOC emissions;
PM10 emissions; and
ROG emissions

UNIT 2:

EPA
Quarterly Acid Rain report
Quarterly Acid Rain report & feedback report
Annual Form 500-ACC

Calibration Records
Fuel flow meter calibration report
Water flow meter calibration report
NH3 flow meter calibration report
SCR DP transducer calibration report
SCR inlet temperature transducer Cal report
SCR outlet temperature transducer Cal report

Calibration gas logs
Linearity test reports
Part 75 RATA test reports
RECLAIM RATA test reports
Rule 218 (CO) RATA test reports
NH3 slip test reports

Tri-annual compliance testing:
VOC emissions;
PM10 emissions; and
ROG emissions

UNIT 3:

EPA
Quarterly Acid Rain report
Quarterly Acid Rain report & feedback report
Annual Form 500-ACC

Calibration Records
Fuel flow meter calibration report
Water flow meter calibration report
NH3 flow meter calibration report
SCR DP transducer calibration report
SCR inlet temperature transducer Cal report
SCR outlet temperature transducer Cal report

Calibration gas logs
Linearity test reports
Part 75 RATA test reports
RECLAIM RATA test reports
Rule 218 (CO) RATA test reports
NH3 slip test reports

Tri-ennual compliance testing:
VOC emissions;
PM10 emissions; and
ROG emissions

UNIT 4:

EPA
Quarterly Acid Rain report
Quarterly Acid Rain report & feedback report
Annual Form 500-ACC

Calibration Records
Fuel flow meter calibration report
Water flow meter calibration report
NH3 flow meter calibration report
SCR DP transducer calibration report
SCR inlet temperature transducer Cal report
SCR outlet temperature transducer Cal report

Calibration gases logs
Linearity test reports
Part 75 RATA test reports
RECLAIM RATA test reports
Rule 218 (CO) RATA test reports
NH3 slip test reports

Tri-ennual compliance testing:
VOC emissions;
PM10 emissions; and
ROG emissions

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 8

UN-PLANNED FACILITY CLOSURE PLAN REVIEW

An "Un-Planned Facility Closure Plan" was drafted and submitted to the California Energy Commission (CEC) in the First Quarter of 2014. At this time, no revisions or changes are required.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 9

Notice of Violation Notice to Comply Issued in CY 2020

No Notices of Violation
Issued by a Regulatory Agency in the CY 2020

No Notices to Comply
Issued by a Regulatory Agency in the CY 2020

SCAQMD FORM 500-N
Title V – Deviations, Emergencies & Breakdowns
Submitted by Canyon Power Plant

South Coast Air Quality Management District

Form 500-N

Title V - Deviations, Emergencies & Breakdowns

*This written report is in addition to requirements to verbally report certain types of incidents. Verbal reports may be made by calling AQMD at 1-800-288-7664 (1-800-CUT-SMOG) or AQMD enforcement personnel.

Mail To:
SCAQMD- Compliance & Enforcement
P.O. Box 4941
Diamond Bar, CA 91765-0941
Tel: (909) 396-3385
www.aqmd.gov

Section I - Operator Information

1. **Facility Name** (Business Name of Operator That Appears On Permit): CANYON POWER PLANT U3 (D13)

2. **Valid AQMD Facility ID** (Available On Permit Or Invoice Issued By AQMD): 153992

3. **Address:** (where incident occurred) 3071 E. MIRALOMA AVENUE (Street Address)
ANAHEIM (City) CA (State) 92806 (Zip)

4. **Mailing Address:** (if different from Item 3) _____ (Street Address)
_____ (City) _____ (State) _____ (Zip)

5. **Provide the name, title, and phone number of the person to contact for further information:**

RONALD HOFFARD	GENERATION PLANT MGR	(714) 765-4536
Name	Title	Phone #

Section II - Reporting of Breakdowns, Deviations, and Emergencies

1. **This written notification is to report a(n):**

Type of Incident	Verbal Report Due*	Written Report Due
a. ☐ Emergency under Rule 3002(g)	Within 1 hour of discovery	Within 2 working days from when the emission limit was exceeded.
b. ☒ Breakdown under:		
☐ Rule 430 (Non-RECLAIM)	For Rules 430 & 2004 - Within 1 hour of discovery.	For Rules 430 & 2004 - Within 7 calendar days after breakdown is corrected, but no later than 30 days from start of the breakdown, unless a written extension is granted.
☒ Rule 2004 (RECLAIM)		
☐ Rule 218 (Non-RECLAIM) [See Rule 218(f)(3)]	For Rule 218 – Within 24 hours or next business day for failure/shutdown exceeding 24 hours	For Rule 218 - With required semi-annual reports.
c. ☐ Deviation with excess emissions [See Title V Permit, Section K, Condition No. 22B]	Within 72 hours of discovery of the deviation or shorter reporting period if required by an applicable State or Federal Regulation.	Within 14 days of discovery of the deviation.
d. ☐ Other Deviation [See Title V Permit, Section K, Condition Nos. 22D & 23]	None	With required semi-annual monitoring reports.

2. **The incident was first discovered by:** ALVIN MARQUEZ (Name) on 11/02/2020 (Date) 04:15 (Time) ○ AM ◉ PM

3. **The incident was first reported by:** OPERATOR #6 (Name of AQMD Staff Person) on 11/02/2020 (Date) 04:58 (Time) ○ AM ◉ PM
   a. ◉ Via Phone
   b. ○ In Person
   Notification Number (Required): 631471

4. **When did the incident actually occur?** 11/02/2020 (Date) 04:11 (Time) ○ AM ◉ PM

AQMD USE ONLY

Received By:		Assigned By:	Inspector:
Date/Time Received:		Date/Time Assigned:	Date/Time Received Assignment:
Date Delivered To Team:		Date Reviewed Inspector Report:	Date Inspected Facility:
Team:	Sector:	Breakdown/Deviation Notification No.	Date Completed Report:

Recommended Action: Cancel Notification Grant Relief Issue NOV No. _____ Other: _____

Final Action: Cancel Notification Grant Relief Issue NOV No. _____ Other: _____

5. Has the incident stopped? a. ◉ Yes, on: 11/02/2020 (Date) 04:17 (Time) ○ AM ◉ PM b. ○ No

6. What was the total duration of the incident? _____ (Days) 06 (Hours)

7. For equipment with an operating cycle, as defined in Rule 430 (b)(3)(A), when was the end of the operating cycle during which the incident occurred? _____ (Date) _____ (Time) ○ AM ○ PM

8. Describe the incident and identify each piece of equipment (by permit, application, or device number) affected. Attach photos (when available) of the affected equipment and attach additional pages as necessary.

SEE ATTACHED

9. The incident may have resulted in a:

a. ☒ Violation of Permit Condition(s): A99.1

b. ☐ Violation of AQMD Rule(s): _____

10. What was the probable cause of the incident? Attach additional pages as necessary.

SEE ATTACHED

11. Did the incident result in excess emissions? ○ No ◉ Yes (Complete the following and attach calculations.)

☐ VOC _____ lbs ☒ NOx 21.730 lbs ☐ SOx _____ lbs ☐ H2S _____ lbs

☐ CO _____ lbs ☐ PM _____ lbs ☐ Other: _____ lbs _____ pollutant

12. *For RECLAIM facilities Subject to Rule 2004 (i)(3) ONLY:* If excess emissions of NOx and/or SOx were reported in Item 11, do you want these emissions to be counted when determining compliance with your annual allocations?

a. ◉ Yes, for: ☒ NOx ☐ SOx b. ○ No, for: ☐ NOx ☐ SOx

If box 12(b) above is checked, include all information specified in Rule 2004(i)(3)(B) and (C), as applicable.

13. Describe the steps taken to correct the problem (i.e., steps taken to mitigate excess emissions, equipment repairs, etc.) and the preventative measures employed to avoid future incidents. Include photos of the failed equipment if available and attach additional pages as necessary.

SEE ATTACHED

14. Was the facility operating properly prior to the incident?

a. ◉ Yes b. ○ No, because: _____

15. Did the incident result from operator error, neglect or improper operation or maintenance procedures?

a. ○ Yes b. ◉ No, because: OPERATOR FOLLOWED PROCEDURE AND MAINTENANCE WAS N/A

16. Has the facility returned to compliance?

a. ○ No, because: _____

b. ◉ Yes (Attach evidence such as emissions calculations, contemporaneous operating logs or other credible evidence.)

Section III - Certification Statement

I certify under penalty of law that based on information and belief formed after reasonable inquiry, the statements and information in this document and in all attachments and other materials are true, accurate, and complete.

For Title V Facilities ONLY: ☒ **I also certify under penalty of law that that I am the responsible official for this facility as defined in AQMD Regulation XXX.**

1. Signature of Responsible Official:	2. Title of Responsible Official:
	GENERATION PLANT MANAGER
3. Print Name:	**4. Date:**
RONALD HOFFARD	11/04/2020
5. Phone #:	**6. Fax #:**
(714) 765-4536	

7. Address of Responsible Official:

Street #	City	State	Zip
3071 E. MIRALOMA AVENUE	ANAHEIM	CA	92806

AQMD 500N Episode Date: 11/02/2020
Identify issue: Water Injection Valve Failed
Canyon Power Plant: Unit 3 (D13) ID# 153992
Notification: 631471

Question 8 - Describe the incident and identify each piece of equipment:

Unit 3 Combustion Turbine was in startup at 1556 hours and the unit was shut down at 1617 hours after the technician identified that U3 startup NOx lbs emissions was increasing and that the water injection flow had failed to respond (**see attachment 1: DAHS data**). The turbine's NOx emissions are controlled utilizing two independent systems, (1) water injection system injects water into the combustor suppressing the flame temperature and reduce the 1-hour average NOx concentration to approximately 25ppm, then (2) Ammonia/SCR system where ammonia is injected into the exhaust gas duct work through an injection grid located upstream of the SCR. The ammonia injection will further reduce the NOx emissions to less than 2.5ppmv. However, during the first ten minutes of Unit 3 Turbine operation the Technician noticed the DAHS displaying high NOx concentration and NOx lbs. The Technician investigated the issue and further noticed the water injection demand was at zero. The Technician immediately initiated a shutdown command on minute 1607. The shutdown was a gradual shutdown and took approximately 10 minutes for the unit to stop where no natural gas was flowing into the turbine. The unit was placed in an outage after shut down until noon on Tuesday, November 3, 2020 for breakdown investigation.

After Unit 3 was shutdown, staff investigated the breakdown and preliminary findings show the problem may have been caused by a water injection valve or valves failure to respond (**see attachment 2: Water Injection Trend Analysis**). The instrument technician was informed of the issue and would continue investigation in the morning of November 3, 2020.

Question 10 – What was the probable cause of the incident?

Staff believes the breakdown was caused by a water injection valve or valves failure to respond during the startup period.

Question 13 – Describe the steps taken to correct the problem:

The instrument technician conducted an investigation of U3 water injection flow system. During troubleshooting, the instrument technician determined no issues with the valves and valve solenoids. Troubleshooting of the valves electric control systems revealed failure of two relays that energize the solenoids. The relays were identified as K97 and rely K11, which were unstable due to worn contacts. Both relays were replaced and tested (**see attachment 3: Relay components**), and all wirings were checked and tested. Unit 3 was cleared for operational testing.

Question 16 – Facility retuned to compliance?

U3 Turbine was tested November 3, 2020. The unit was in startup at 1005 hours and the water flow injection operated as expected. The unit came into compliance for all emissions in minute of 1018 hours. An online passing calibration was performed and Unit 3 was shutdown at 1111 hours. Unit 3 was determined to be in compliance (**see attachment 4: DAHS data**).

Attachment #1
Notification # 631471

Canyon Power Plant
ID# 153992

Date/Time	3_Startup 1=ON	status	3_GasFlow kscfh	status	Unit 3 DAHS Data 3_NH3_Flow #/hr	status	3_H2O_FLOW k#/hr	status	3_NOxlb_SU #/hr	status	Unit 4 DAHS Data 4_NH3_Flow #/hr	status	4_H2O_FLOW k#/hr	status	4_NOxlb_SU #/hr	status
11/02/2020 15:50	0	P	0.2	P	0	P	0	P	0	P	0.02	P	0	P	0	P
11/02/2020 15:51	0	P	0	P	0	P	0	P	0	P	0.03	P	0	P	0	P
11/02/2020 15:52	0	P	0	P	0	P	0	P	0	P	0.04	P	0	P	0	P
11/02/2020 15:53	0	P	0.1	P	0	P	0	P	0	P	0.05	P	0	P	0	P
11/02/2020 15:54	0	P	0.1	P	0	P	0	P	0	P	0.03	P	0	P	0	P
11/02/2020 15:55	0	P	37.6	P	0	P	0	P	0	P	0.03	P	0	P	0	P
11/02/2020 15:56	1		110		0		0		0.92		0.01		0		0	
11/02/2020 15:57	1		114.7		0		0		10.84		0.03		0		4.94	
11/02/2020 15:58	1		134		0		0		14.91		0.03		0.3		16.65	
11/02/2020 15:59	1		193.7		0		0		16.27		0.03		3.1		20.22	
11/02/2020 16:00	1		256.6		0		0		24.78		0.01		5.8		19.62	
11/02/2020 16:01	1		326.6		0		0		78.52		0.03		10.9		21.07	
11/02/2020 16:02	1		396.5		57.12		0		152.37		21.1		17.5		31.02	
11/02/2020 16:03	1		427.1		86.05		0		258.34		95.49		22.1		39.89	
11/02/2020 16:04	1		435		90.4		0		247.59		106.27		22.3		16.8	
11/02/2020 16:05	1		435		91.02		0		235.25		108.55		22		3.96	
11/02/2020 16:06	1		435.2		90.83		0		233.07		109.16		21.9		2.48	
11/02/2020 16:07	1		434.8		90.96		0		232.81		109.31		21.5		2.48	
11/02/2020 16:08	1		394.9		81.76		0		216.42		109.38		21.3		2.47	
11/02/2020 16:09	1		324.4		68.01		0		176.77		108.95		21.3		2.48	
11/02/2020 16:10	1		257.3		56.71		0		122.13		108.55		21.6		2.97	
11/02/2020 16:11	1		182.1		64.36		0		69.41		107.83		21.9		2.97	
11/02/2020 16:12	1		125.1		75.3		0		34.43		107.42		22.2		2.97	
11/02/2020 16:13	1		112.9		77.48		0		16.12		106.88		22.4		2.48	
11/02/2020 16:14	1		112.9		78.31		0		7.23		106.2		22.1		2.47	
11/02/2020 16:15	1		112.8		78.34		0		5.21		105.13		21.9		2.47	
11/02/2020 16:16	1		112.8		78.35		0		4.14		104.51		21.6		2.47	
11/02/2020 16:17	1		75.7		52.45		0		2.39		103.64		21.5		0	C
11/02/2020 16:18	0	P	0	P	0	P	0	P	0	P	103.66		21.5		0	C
11/02/2020 16:19	0	P	0.1	P	0	P	0	P	0	P	103.71		21.5		0	C
11/02/2020 16:20	0	P	0.1	P	0	P	0	P	0	PCI	103.72		21.5		0	C
11/02/2020 16:21	0	P	0.2	P	0	P	0	P	0	PCI	103.63		21.5		0	CZ
11/02/2020 16:22	0	P	0.2	P	0	P	0	P	0	PCI	103.77		21.5		0	CZ
11/02/2020 16:23	0	P	0.2	P	0	P	0	P	0	PCI	103.73		21.5		0	C
11/02/2020 16:24	0	P	0.1	P	0	P	0	P	0	PCI	103.77		21.5		0	C
11/02/2020 16:25	0	P	0.2	P	0	P	0	P	0	PCI	103.6		21.6		0	CS
11/02/2020 16:26	0	P	0	P	0	P	0	P	0	PCI	103.56		21.5		0	C
11/02/2020 16:27	0	P	0.1	P	0	P	0	P	0	PCI	103.76		21.6		0	C
11/02/2020 16:28	0	P	0	P	0	P	0	P	0	PCI	103.58		21.5		0	CS
11/02/2020 16:29	0	P	0.1	P	0	P	0	P	0	PCI	103.86		21.5		0	CS
11/02/2020 16:30	0	P	0.2	P	0.01	P	0	P	0	PC	103.49		21.6		0	C
11/02/2020 16:31	0	P	0.2	P	0	P	0	P	0	PC	103.7		21.6		0	C
11/02/2020 16:32	0	P	0.3	P	0	P	0	P	0	PC	103.59		21.6		0	C
11/02/2020 16:33	0	P	0.2	P	0	P	0	P	0	PC	103.6		21.6		0	C
11/02/2020 16:34	0	P	0	P	0	P	0	P	0	PC	103.56		21.6		0	C
11/02/2020 16:35	0	P	0.1	P	0	P	0	P	0	PC	103.59		21.8		3.95	
11/02/2020 16:36	0	P	0.1	P	0	P	0	P	0	P	104.39		22.1		3.95	
11/02/2020 16:37	0	P	0.1	P	0	P	0	P	0	P	105.18		22.2		3.46	
11/02/2020 16:38	-9999	U	-999.9	U	0	P	0	P	0	U	105.69		22.1		3.46	
11/02/2020 16:39	-9999	U	-999.9	U	0	P	0	P	0	U	105.7		21.8		2.96	
11/02/2020 16:40	-9999	U	-999.9	U	0	P	0	P	0	U	105.11		21.6		2.96	
11/02/2020 16:41	-9999	U	-999.9	U	0	P	0	P	0	U	105.04		21.5		2.96	
11/02/2020 16:42	-9999	U	-999.9	U	0	P	0	P	0	U	104.6		21.6		3.45	
11/02/2020 16:43	-9999	U	-999.9	U	0	P	0	P	0	U	104.85		21.8		3.94	
11/02/2020 16:44	-9999	U	-999.9	U	0	P	0	P	0	U	105.09		22.1		3.95	

Attachment #1
Notification # 631471

Canyon Power Plant
ID# 153992

Date/Time	3_Startup		3_GasFlow		Unit 3 DAHS Data 3_NH3_Flow		3_H2O_FLOW		3_NOxlb_SU			Unit 4 DAHS Data 4_NH3_Flow		4_H2O_FLOW		4_NOxlb_SU	
	1=ON	status	kscfh	status	#/hr	status	k#/hr	status	#/hr	status		#/hr	status	k#/hr	status	#/hr	status
11/02/2020 16:45	-9999	U	-999.9	U	0	P	0	P	0	U		106.06		22.3		3.46	
11/02/2020 16:46	-9999	U	-999.9	U	0	P	0	P	0	U		106.31		22.2		2.96	
11/02/2020 16:47	-9999	U	-999.9	U	0	P	0	P	0	U		105.81		21.9		2.96	
11/02/2020 16:48	-9999	U	-999.9	U	0	P	0	P	0	U		105.2		21.6		2.96	
11/02/2020 16:49	-9999	U	-999.9	U	0	P	0	P	0	U		104.76		21.5		2.96	
11/02/2020 16:50	-9999	U	-999.9	U	0	P	0	P	0	U		104.08		21.5		3.45	
11/02/2020 16:51	-9999	U	-999.9	U	0	P	0	P	0	U		104.28		21.7		3.45	
11/02/2020 16:52	-9999	U	-999.9	U	0	P	0	P	0	U		104.69		22.1		3.95	
11/02/2020 16:53	-9999	U	-999.9	U	0	P	0	P	0	U		105.36		22.3		3.46	
11/02/2020 16:54	-9999	U	-999.9	U	0	P	0	P	0	U		105.65		22.2		2.96	
11/02/2020 16:55	-9999	U	-999.9	U	0	P	0	P	0		**36 lbs**	105.68		22		0	P
11/02/2020 16:56	-9999	U	-999.9	U	0	P	0	P	0	U		105.35		21.7		0	P
11/02/2020 16:57	-9999	U	-999.9	U	0	P	0	P	0	U		104.46		21.4		0	P
11/02/2020 16:58	-9999	U	-999.9	U	0	P	0	P	0	U		104.38		21.5		0	P
11/02/2020 16:59	-9999	U	-999.9	U	0	P	0	P	0	U		104.16		21.7		0	P
11/02/2020 17:00	-9999	U	-999.9	U	0	P	0	P	0	U		104.52		22		0	P
11/02/2020 17:01	-9999	U	-999.9	U	0	P	0	P	0	U		104.91		22.1		0	P
11/02/2020 17:02	-9999	U	-999.9	U	0	P	0	P	0	U		105.68		22.3		0	P
11/02/2020 17:03	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.64		21.9		0	P
11/02/2020 17:04	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U		104.93		21.6		0	P
11/02/2020 17:05	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.5		21.5		0	P
11/02/2020 17:06	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.45		21.6		0	P
11/02/2020 17:07	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.37		21.9		0	P
11/02/2020 17:08	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.02		22.3		0	P
11/02/2020 17:09	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.53		22.3		0	P
11/02/2020 17:10	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.56		22.2		0	P
11/02/2020 17:11	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.42		21.9		0	P
11/02/2020 17:12	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.67		21.6		0	P
11/02/2020 17:13	-9999	U	-999.9	U	0	P	-999.9	U	0	U		103.93		21.5		0	P
11/02/2020 17:14	-9999	U	-999.9	U	0	P	-999.9	U	0	U		103.92		21.6		0	P
11/02/2020 17:15	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.49		21.9		0	P
11/02/2020 17:16	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.37		22.2		0	P
11/02/2020 17:17	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.68		22.2		0	P
11/02/2020 17:18	-9999	U	-999.9	U	0	P	-999.9	U	0	U		106.01		22.2		0	P
11/02/2020 17:19	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.88		21.8		0	P
11/02/2020 17:20	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.17		21.6		0	P
11/02/2020 17:21	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.85		21.6		0	P
11/02/2020 17:22	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.1		21.8		0	P
11/02/2020 17:23	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.44		22.1		0	P
11/02/2020 17:24	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.7		22.3		0	P
11/02/2020 17:25	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.59		22.2		0	P
11/02/2020 17:26	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.77		22.1		0	P
11/02/2020 17:27	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.27		21.7		0	P
11/02/2020 17:28	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.01		21.6		0	P
11/02/2020 17:29	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.48		21.7		0	P
11/02/2020 17:30	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.52		21.9		0	P
11/02/2020 17:31	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.93		22.2		0	P
11/02/2020 17:32	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.55		22.3		0	P
11/02/2020 17:33	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.59		22.3		0	P
11/02/2020 17:34	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.47		22		0	P
11/02/2020 17:35	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.68		21.7		0	P
11/02/2020 17:36	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.24		21.5		0	P
11/02/2020 17:37	-9999	U	-999.9	U	0	P	-999.9	U	0	U		103.89		21.6		0	P
11/02/2020 17:38	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.57		21.9		0	P
11/02/2020 17:39	-9999	U	-999.9	U	0	P	-999.9	U	0	U		104.96		22.2		0	P
11/02/2020 17:40	-9999	U	-999.9	U	0	P	-999.9	U	0	U		105.74		22.4		0	P

Attachment #1
Notification # 631471

Canyon Power Plant
ID# 153992

Date/Time	3_Startup		3_GasFlow		Unit 3 DAHS Data 3_NH3_Flow		3_H2O_FLOW		3_NOxlb_SU		Unit 4 DAHS Data 4_NH3_Flow		4_H2O_FLOW		4_NOxlb_SU	
	1=ON	status	kscfh	status	#/hr	status	k#/hr	status	#/hr	status	#/hr	status	k#/hr	status	#/hr	status
11/02/2020 17:41	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.96		22.3		0	P
11/02/2020 17:42	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.85		22.1		0	P
11/02/2020 17:43	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.42		21.8		0	P
11/02/2020 17:44	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.78		21.4		0	P
11/02/2020 17:45	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104		21.4		0	P
11/02/2020 17:46	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.32		21.5		0	P
11/02/2020 17:47	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.92		21.9		0	P
11/02/2020 17:48	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.72		22.1		0	P
11/02/2020 17:49	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.26		22.5		0	P
11/02/2020 17:50	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.99		22.4		0	P
11/02/2020 17:51	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.92		22.1		0	P
11/02/2020 17:52	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.13		21.8		0	P
11/02/2020 17:53	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.96		21.5		0	P
11/02/2020 17:54	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.4		21.6		0	P
11/02/2020 17:55	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.14		21.6		0	P
11/02/2020 17:56	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.71		21.9		0	P
11/02/2020 17:57	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.42		22.2		0	P
11/02/2020 17:58	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.63		22.3		0	P
11/02/2020 17:59	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.91		22.2		0	P
11/02/2020 18:00	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.98		21.8		0	P
11/02/2020 18:01	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.29		21.5		0	P
11/02/2020 18:02	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.7		21.5		0	P
11/02/2020 18:03	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.5		21.3		0	P
11/02/2020 18:04	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.9		21.6		0	P
11/02/2020 18:05	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.44		22		0	P
11/02/2020 18:06	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.33		22.3		0	P
11/02/2020 18:07	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.79		22.5		0	P
11/02/2020 18:08	-9999	U	-999.9	U	0	P	-999.9	U	0	U	107.06		22.3		0	P
11/02/2020 18:09	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.6		21.9		0	P
11/02/2020 18:10	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.72		21.5		0	P
11/02/2020 18:11	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.63		21.5		0	P
11/02/2020 18:12	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.6		21.4		0	P
11/02/2020 18:13	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.22		21.7		0	P
11/02/2020 18:14	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.69		22.1		0	P
11/02/2020 18:15	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.55		22.3		0	P
11/02/2020 18:16	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.81		22.3		0	P
11/02/2020 18:17	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.99		22.1		0	P
11/02/2020 18:18	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	105.68		21.8		0	P
11/02/2020 18:19	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.85		21.5		0	P
11/02/2020 18:20	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.5		21.4		0	P
11/02/2020 18:21	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.59		21.5		0	P
11/02/2020 18:22	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.93		21.7		0	P
11/02/2020 18:23	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.68		22.1		0	P
11/02/2020 18:24	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.27		22.3		0	P
11/02/2020 18:25	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.6		22.3		0	P
11/02/2020 18:26	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.81		22		0	P
11/02/2020 18:27	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.4		21.8		0	P
11/02/2020 18:28	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	105.25		21.4		0	P
11/02/2020 18:29	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	105.03		21.4		0	P
11/02/2020 18:30	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.72		21.5		0	P
11/02/2020 18:31	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	105.27		21.8		0	P
11/02/2020 18:32	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.71		22.1		0	P
11/02/2020 18:33	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.19		22.3		0	P
11/02/2020 18:34	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.78		22.3		0	P
11/02/2020 18:35	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.5		22		0	P
11/02/2020 18:36	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.72		21.7		0	P

Attachment #1
Notification # 631471

Canyon Power Plant
ID# 153992

Date/Time	3_Startup		3_GasFlow		Unit 3 DAHS Data 3_NH3_Flow		3_H2O_FLOW		3_NOxlb_SU		Unit 4 DAHS Data 4_NH3_Flow		4_H2O_FLOW		4_NOxlb_SU	
	1=ON	status	kscfh	status	#/hr	status	k#/hr	status	#/hr	status	#/hr	status	k#/hr	status	#/hr	status
11/02/2020 18:37	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	104.69		21.4		0	P
11/02/2020 18:38	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	104.16		21.3		0	P
11/02/2020 18:39	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.32		21.6		0	P
11/02/2020 18:40	-9999	U	-999.9	U	-0.03	P	-999.9	U	0	U	104.42		21.9		0	P
11/02/2020 18:41	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.23		22.1		0	P
11/02/2020 18:42	-9999	U	-999.9	U	-0.02	P	-999.9	U	0	U	105.87		22.3		0	P
11/02/2020 18:43	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.37		22.2		0	P
11/02/2020 18:44	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.94		21.9		0	P
11/02/2020 18:45	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.37		21.6		0	P
11/02/2020 18:46	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.52		21.4		0	P
11/02/2020 18:47	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.38		21.5		0	P
11/02/2020 18:48	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	104.2		21.7		0	P
11/02/2020 18:49	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.1		22.1		0	P
11/02/2020 18:50	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.7		22.3		0	P
11/02/2020 18:51	-9999	U	-999.9	U	0	P	-999.9	U	0	U	106.23		22.2		0	P
11/02/2020 18:52	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.86		22		0	P
11/02/2020 18:53	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.74		21.7		0	P
11/02/2020 18:54	-9999	U	-999.9	U	0	P	-999.9	U	0	U	105.27		21.4		0	P
11/02/2020 18:55	-9999	U	-999.9	U	0	P	-999.9	U	0	U	104.27		21.3		0	P
11/02/2020 18:56	-9999	U	-999.9	U	0	P	-999.9	U	0	U	93.04		18.4		0	P
11/02/2020 18:57	-9999	U	-999.9	U	0	P	-999.9	U	0	U	73.92		13.4		0	P
11/02/2020 18:58	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	67.8		8.3		0	P
11/02/2020 18:59	-9999	U	-999.9	U	0	P	-999.9	U	0	U	64.78		3.9		0	P
11/02/2020 19:00	-9999	U	-999.9	U	0	P	-999.9	U	0	U	57.67		1.7		0	P
11/02/2020 19:01	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	51.91		1.1		0	P
11/02/2020 19:02	-9999	U	-999.9	U	-0.01	P	-999.9	U	0	U	56.47		1.1		0	P
11/02/2020 19:03	-9999	U	-999.9	U	0	P	-999.9	U	0	U	60.03		1		0	P
11/02/2020 19:04	-9999	U	-999.9	U	0	P	-999.9	U	0	U	64.38		1.1		0	P
11/02/2020 19:05	-9999	U	-999.9	U	0	P	-999.9	U	0	U	68.25		0.9		0	P
11/02/2020 19:06	-9999	U	-999.9	U	0	P	-999.9	U	0	U	0	P	0	P	0	P
11/02/2020 19:07	-9999	U	-999.9	U	0	P	-999.9	U	0	U	0.01	P	0	P	0	P

Invalid Status Legend:
U - Untouched
P - Process OFF
E - Data Error
C - In Calibration
F - Calibration Failure
Z - Zero Step
S - Span Step
O - Out of Control
I - Ignore/Discard Data
L - Old Data
M - Communication Failure
H - Hardware Failure
T - Task Error
* - Substituted (common use)

Exceedance	36 lbs
Limit	14.27 lbs
Over limit	21.73 lbs

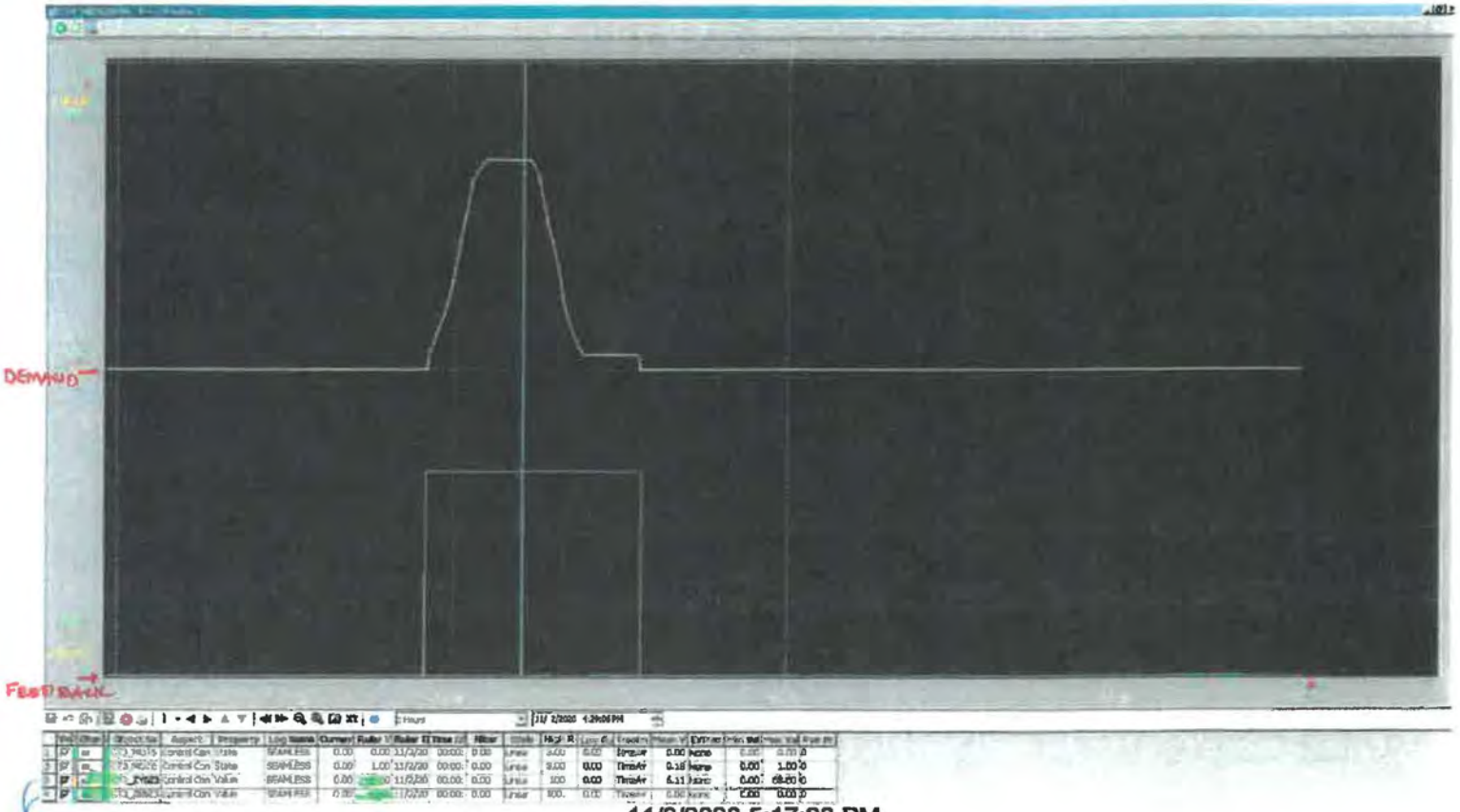
Workplace:Print Screen

CANYON POWER PLANT
ID# 153992

ATTACHMENT #2

NOTIFICATION # 153992

WATER INJECTION TREND ANALYSIS



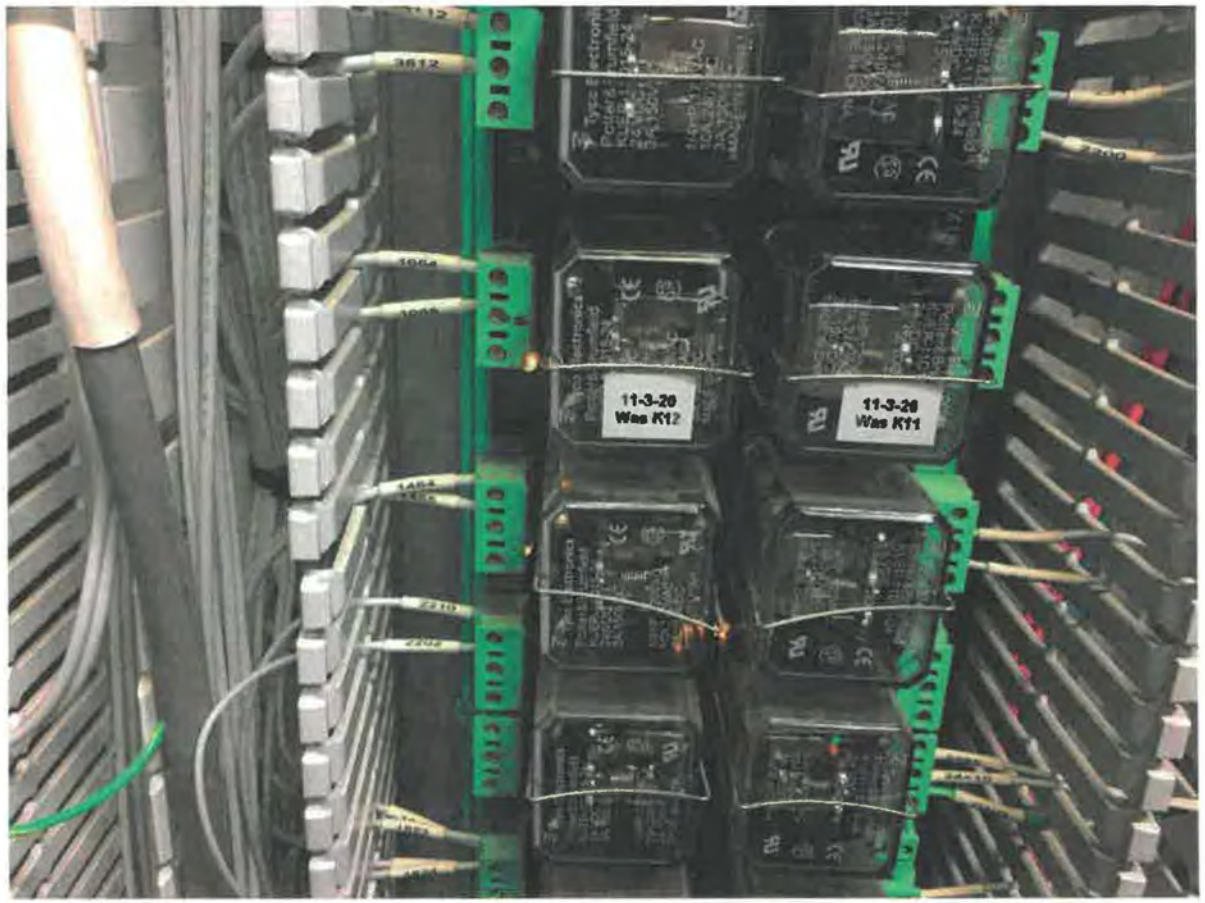
DEMAND

FEEDBACK

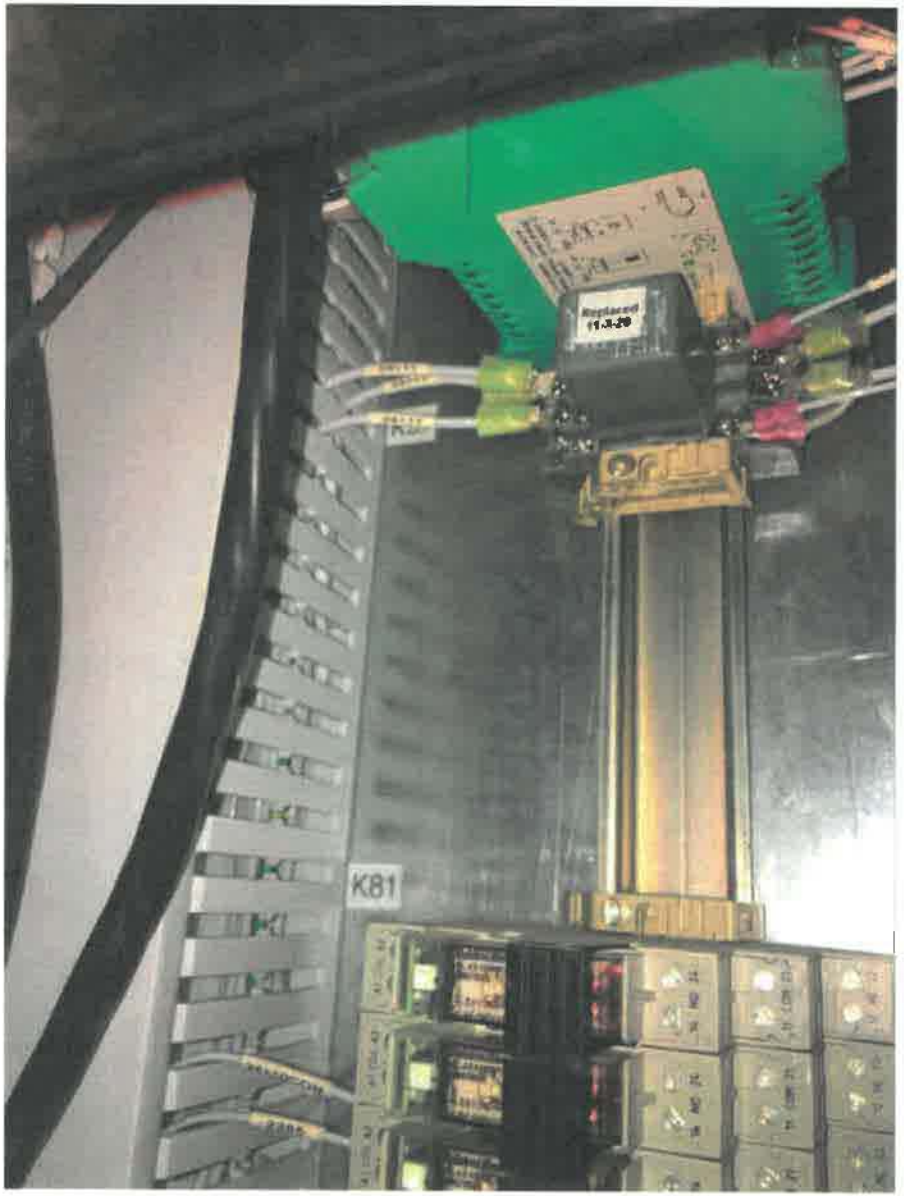
ATTACHMENT #3

CANYON POWER PLANT
ID# 153752
NOTIFICATION # 631471

U3 K11/K12 Relay



U3 K97 Relay



						U3 DAHS Data - Testing Run							
	Date/Time	3_Startup		3_GasFlow		3_H2O_FLOW		3_NH3_Flow		3_NOXPPM		3_NOxlb_SU	
		1=ON	status	kscfh	status	k#/hr	status	#/hr	status	ppm	status	#/hr	status
Startup	11/03/2020 10:00	0	P	0.2	P	0	P	0	P	-0.01	P	0	P
	11/03/2020 10:01	0	P	0.1	P	0	P	-0.01	P	-0.01	P	0	P
	11/03/2020 10:02	0	P	0	P	0	P	-0.01	P	-0.01	P	0	P
	11/03/2020 10:03	0	P	0.1	P	0	P	-0.03	P	-0.01	P	0	P
	11/03/2020 10:04	0	P	34.7	P	0	P	-0.03	P	-0.01	P	0	P
	11/03/2020 10:05	1		113.8		0		0		1.06		1.43	
	11/03/2020 10:06	1		117.2		0		0		13.24		13.79	
H2O	11/03/2020 10:07	1		142		1.4		-0.01		16.22		19.08	
	11/03/2020 10:08	1		205.7		4.9		0		18.82		27.43	
	11/03/2020 10:09	1		261.5		7.5		0		13.11		20.05	
	11/03/2020 10:10	1		264.2		7.4		0		14.61		21.08	
	11/03/2020 10:11	1		264.1		7.4		14.85		16.93		24.13	
	11/03/2020 10:12	1		263.7		7.3		56.16		17.77		24.92	
	11/03/2020 10:13	1		263.3		7.2		60.9		12.11		16.87	
	11/03/2020 10:14	1		263.3		7.2		60.89		4.95		6.91	
	11/03/2020 10:15	1		263.6		7.2		60.99		3.56		4.98	
	11/03/2020 10:16	1		263.7		7.3		60.96		2.94		4.15	
	11/03/2020 10:17	1		263.7		7.4		60.84		2.35		3.32	
	11/03/2020 10:18	1		264.1		7.4		61.47		1.94		2.77	
	11/03/2020 10:19	1		263.5		7.4		62.27		1.86		2.49	
	11/03/2020 10:20	1		264.3		7.4		63		1.75		2.5	
	11/03/2020 10:21	1		264.1		7.3		63.62		1.57		2.22	
	11/03/2020 10:22	1		264.2		7.3		63.91		1.46		1.94	
	11/03/2020 10:23	1		263.9		7.2		64		1.36		1.94	
	11/03/2020 10:24	1		264		7.2		64.11		1.31		1.94	
	11/03/2020 10:25	1		263.8		7.2		64.25		1.29		1.94	
	11/03/2020 10:26	1		264.1		7.2		64.11		1.26		1.66	
	11/03/2020 10:27	1		263.6		7.2		64.18		1.24		1.66	
	11/03/2020 10:28	1		264		7.3		63.91		1.23		1.66	
	11/03/2020 10:29	1		264.3		7.3		63.85		1.23		1.67	
	11/03/2020 10:30	1		263.7		7.2		63.81		1.24		1.66	
	11/03/2020 10:31	1		264		7.3		63.7		1.24		1.66	
	11/03/2020 10:32	1		263.9		7.3		63.56		1.25		1.66	
Cal	11/03/2020 10:33	1		264.3		7.3		63.47		2.59	C	0	C
	11/03/2020 10:34	1		263.8		7.3		63.54		4.81	C	0	C
	11/03/2020 10:35	1		263.8		7.3		63.57		0.08	C	0	C
	11/03/2020 10:36	1		264.1		7.3		63.57		0.05	C	0	C
	11/03/2020 10:37	1		264.2		7.4		63.59		0.02	CZ	0	CZ
	11/03/2020 10:38	1		264.2		7.3		63.59		0.02	CZ	0	CZ
	11/03/2020 10:39	1		264		7.3		63.66		8.95	C	0	C
	11/03/2020 10:40	0		264.2		7.3		63.57		9.19	C	0	C
	11/03/2020 10:41	0		263.9		7.3		63.47		9.19	CS	0	CS
	11/03/2020 10:42	0		264.2		7.4		63.54		123.12	C	0	C
	11/03/2020 10:43	0		263.7		7.4		63.67		179.26	C	0	C
	11/03/2020 10:44	0		263.5		7.3		63.63		179.65	CS	0	CS
	11/03/2020 10:45	0		263.9		7.4		63.7		179.65	CS	0	CS
	11/03/2020 10:46	0		264		7.3		63.7		11.94	C	0	C
	11/03/2020 10:47	0		264.1		7.4		63.6		2.36	C	0	C
	11/03/2020 10:48	0		263.8		7.4		63.7		1.94	C	0	C
	11/03/2020 10:49	0		264		7.4		63.61		1.88	C	0	C
End Cal	11/03/2020 10:50	0		263.6		7.4		63.7		1.83	C	0	C
	11/03/2020 10:51	0		263.9		7.4		75.09		1.76		2.49	
	11/03/2020 10:52	0		264.2		7.5		98.9		1.69		2.22	
	11/03/2020 10:53	0		264.2		7.6		104.71		1.47		1.94	
	11/03/2020 10:54	0		264.3		7.7		104.65		1.1		1.39	
	11/03/2020 10:55	0		264.5		7.7		104.67		0.89		1.11	

Attachment #4
Notification # 631471

Canyon Power Plant
ID# 153992

						U3 DAHS Data - Testing Run							
	Date/Time	3_Startup		3_GasFlow		3_H2O_FLOW		3_NH3_Flow		3_NOXPPM		3_NOxlb_SU	
		1=ON	status	kscfh	status	k#/hr	status	#/hr	status	ppm	status	#/hr	status
	11/03/2020 10:56	0		264.3		7.7		104.49		0.81		1.11	
	11/03/2020 10:57	0		264.3		7.7		102.81		0.77		1.11	
	11/03/2020 10:58	0		264.3		7.6		101.4		0.76		1.11	
	11/03/2020 10:59	0		264.1		7.6		101.56		0.75		1.11	
	11/03/2020 11:00	0		264.2		7.6		101.5		0.75		1.11	
	11/03/2020 11:01	0		264.1		7.6		101.41		0.75		1.11	
	11/03/2020 11:02	0		263.9		7.6		101.42		0.74		1.11	
	11/03/2020 11:03	0		264		7.6		101.39		0.72		1.11	
Shudown	11/03/2020 11:04	0		262.3		7.4		101.49		0.71		0	P
	11/03/2020 11:05	0		208.4		4.3		101.47		0.72		0	P
	11/03/2020 11:06	0		143		1.8		101.39		0.73		0	P
	11/03/2020 11:07	0		112.5		1.2		101.6		0.78		0	P
	11/03/2020 11:08	0		112.5		1.2		101.51		0.88		0	P
	11/03/2020 11:09	0		112.5		1.2		101.41		0.92		0	P
	11/03/2020 11:10	0		112.7		1.2		101.52		0.92		0	P
	11/03/2020 11:11	0		112.6		1		101.5		0.92		0	P
	11/03/2020 11:12	0	P	0.1	P	0	P	0	P	0.91	P	0	P
	11/03/2020 11:13	0	P	0.1	P	0	P	0	P	0.57	P	0	P
	11/03/2020 11:14	0	P	0	P	0	P	0	P	0.09	P	0	P
	11/03/2020 11:15	0	P	0	P	0	P	-0.01	P	0.05	P	0	P
	11/03/2020 11:16	0	P	0	P	0	P	0	P	0.05	P	0	P
	11/03/2020 11:17	0	P	0	P	0	P	0	P	0.04	P	0	P
	11/03/2020 11:18	0	P	0	P	0	P	0	P	0.03	P	0	P
	11/03/2020 11:19	0	P	0.1	P	0	P	0	P	0.02	P	0	P
	11/03/2020 11:20	0	P	0.2	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:21	0	P	0.2	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:22	0	P	0.1	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:23	0	P	0	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:24	0	P	0	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:25	0	P	0	P	0	P	0	P	0	P	0	P
	11/03/2020 11:26	0	P	0.1	P	0	P	0	P	0	P	0	P
	11/03/2020 11:27	0	P	0	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:28	0	P	0	P	0	P	0	P	0.01	P	0	P
	11/03/2020 11:29	0	P	0.1	P	0	P	0	P	0.01	P	0	P

Invalid Status Legend:
U - Untouched
P - Process OFF
E - Data Error
C - In Calibration
F - Calibration Failure
Z - Zero Step
S - Span Step
O - Out of Control
I - Ignore/Discard Data
L - Old Data
M - Communication Failure
H - Hardware Failure
T - Task Error
* - Substituted (common use)

South Coast Air Quality Management District

Form 500-N

Title V - Deviations, Emergencies & Breakdowns

*This written report is in addition to requirements to verbally report certain types of incidents. Verbal reports may be made by calling AQMD at 1-800-288-7664 (1-800-CUT-SMOG) or AQMD enforcement personnel.

Mail To:
SCAQMD
P.O. Box 4941
Diamond Bar, CA 91765-0941

Tel: (909) 396-3385
www.aqmd.gov

Section I - Operator Information

1. **Facility Name** (Business Name of Operator That Appears On Permit): CANYON POWER PLANT Unit 2 (D7)

2. **Valid AQMD Facility ID** (Available On Permit Or Invoice Issued By AQMD): 153992

3. **Address:** (where incident occurred) 3071 E. Miraloma Avenue (Street Address)
Anaheim (City) CA (State) 92806 (Zip)

4. **Mailing Address:** (if different from Item 3) _____ (Street Address)
_____ (City) _____ (State) _____ (Zip)

5. **Provide the name, title, and phone number of the person to contact for further information:**

Ronald Hoffard	Generation Plant Manager	(714) 765-4536
Name	Title	Phone #

Section II - Reporting of Breakdowns, Deviations, and Emergencies

1. **This written notification is to report a(n):**

Type of Incident	Verbal Report Due*	Written Report Due
a. ☐ Emergency under Rule 3002(g)	Within 1 hour of discovery	Within 2 working days from when the emission limit was exceeded.
b. ☒ Breakdown under:		
☐ Rule 430 (Non-RECLAIM)	For Rules 430 & 2004 - Within 1 hour of discovery.	For Rules 430 & 2004 - Within 7 calendar days after breakdown is corrected, but no later than 30 days from start of the breakdown, unless a written extension is granted.
☒ Rule 2004 (RECLAIM)		
☐ Rule 218 (Non-RECLAIM) [See Rule 218(f)(3)]	For Rule 218 – Within 24 hours or next business day for failure/shutdown exceeding 24 hours	For Rule 218 - With required semi-annual reports.
c. ☐ Deviation with excess emissions [See Title V Permit, Section K, Condition No. 22B]	Within 72 hours of discovery of the deviation or shorter reporting period if required by an applicable State or Federal Regulation.	Within 14 days of discovery of the deviation.
d. ☐ Other Deviation [See Title V Permit, Section K, Condition Nos. 22D & 23]	None	With required semi-annual monitoring reports.

2. **The incident was first discovered by:** Theodore Nguyen (Name) on 05/30/2020 (Date) 06:00 (Time) ○ AM ◉ PM

3. **The incident was first reported by:** Voicemail left at 1800-CUT-SMOG (Name of AQMD Staff Person) on 05/30/2020 (Date) 06:47 (Time) ○ AM ◉ PM

a. ◉ Via Phone

b. ○ In Person

Notification Number (Required): 612815

4. **When did the incident actually occur?** 05/30/2020 (Date) 05:23 (Time) ○ AM ◉ PM

AQMD USE ONLY				
Received By:		Assigned By:		Inspector:
Date/Time Received:		Date/Time Assigned:		Date/Time Received Assignment:
Date Delivered To Team:		Date Reviewed Inspector Report:		Date Inspected Facility:
Team:	Sector:	Breakdown/Deviation Notification No.		Date Completed Report:
Recommended Action:	Cancel Notification	Grant Relief	Issue NOV No. _____	Other: _____
Final Action:	Cancel Notification	Grant Relief	Issue NOV No. _____	Other: _____

5. Has the incident stopped? a. ◉ Yes, on: 05/30/2020 (Date) 04:37 (Time) ○ AM ◉ PM b. ○ No

6. What was the total duration of the incident? _____ (Days) 15 ~~Hours~~ MIN

7. For equipment with an operating cycle, as defined in Rule 430 (b)(3)(A), when was the end of the operating cycle during which the incident occurred? _____ (Date) _____ (Time) ○ AM ○ PM

8. Describe the incident and identify each piece of equipment (by permit, application, or device number) affected. Attach photos (when available) of the affected equipment and attach additional pages as necessary.

9. The incident may have resulted in a:
   a. ☒ Violation of Permit Condition(s): A99.2 CO ppm > 11.6 lbs
   b. ☐ Violation of AQMD Rule(s): _____

10. What was the probable cause of the incident? Attach additional pages as necessary.

11. Did the incident result in excess emissions? ○ No ◉ Yes (Complete the following and attach calculations.)

☐ VOC _____ lbs ☐ NOx _____ lbs ☐ SOx _____ lbs ☐ H2S _____ lbs

☒ CO 1.500 lbs ☐ PM _____ lbs ☐ Other: _____ lbs _____ pollutant

12. *For RECLAIM facilities Subject to Rule 2004 (i)(3) ONLY:* If excess emissions of NOx and/or SOx were reported in Item 11, do you want these emissions to be counted when determining compliance with your annual allocations?
   a. ◉ Yes, for: ☐ NOx ☐ SOx b. ○ No, for: ☐ NOx ☐ SOx
   If box 12(b) above is checked, include all information specified in Rule 2004(i)(3)(B) and (C), as applicable.

13. Describe the steps taken to correct the problem (i.e., steps taken to mitigate excess emissions, equipment repairs, etc.) and the preventative measures employed to avoid future incidents. Include photos of the failed equipment if available and attach additional pages as necessary.

14. Was the facility operating properly prior to the incident?
   a. ◉ Yes b. ○ No, because: _____

15. Did the incident result from operator error, neglect or improper operation or maintenance procedures?
   a. ○ Yes b. ◉ No, because: _____

16. Has the facility returned to compliance?
   a. ○ No, because: _____
   b. ◉ Yes (Attach evidence such as emissions calculations, contemporaneous operating logs or other credible evidence.)

Section III - Certification Statement

I certify under penalty of law that based on information and belief formed after reasonable inquiry, the statements and information in this document and in all attachments and other materials are true, accurate, and complete.

For Title V Facilities ONLY: ☒ I also certify under penalty of law that that I am the responsible official for this facility as defined in AQMD Regulation XXX.

1. Signature of Responsible Official:	2. Title of Responsible Official:
	GENERATION PLANT MANAGER
3. Print Name: RONALD HOFFARD	4. Date: 6/3/2020
5. Phone #: (714) 765-4653	6. Fax #:

7. Address of Responsible Official:

3071 E. MIRALOMA AVENUE	Anaheim	CA	92806
Street #	City	State	Zip

AQMD 500N Episode Date:
Identify issue: Fuel Flow converter malfunction
Canyon Power Plant: Unit 2/(D7) ID# 153992
Notification:

Question 8 - Describe the incident and identify each piece of equipment:

The U2 Turbine was in startup promptly at 1623 hours and shut down at 1637 hours after the technician identified that U2 had the potential to exceed the startup CO pounds per hour parameter (**see attachment 1: DAHS data**). Technicians are trained to use an Emissions Compliance Log for all units during Startup, prior to Calibration and prior Shutdown to verify the NOx/CO lbs per hour readings are within the compliance range. The log is a tool used by the technicians to evaluate minute data to prevent a NOx or CO emission exceedance.

The technician operating U2 Turbine on May 30, 2020, recognized a possible CO exceedance at the 5th minute mark (11.86 lbs/hr > 7 lbs/hr) the unit was in operation (**see attachment 2: Emission Compliance Log**). The unit was gradually shutdown and successfully stopped at 1637 hours. At 1700 hours, an episode was registered in the DAHS. The technician proceeded to contact South Coast AQMD at 1747 hours to report the breakdown via telephone call at 1800-CUT-SMOG. The startup data for CO lbs per hour revealed that the startup and shutdown period exceeded the CO 11.6 lbs permit limit.

Question 10 – What was the probable cause of the incident?

Staff reviewed CO lbs per hour data and discovered that the CO lbs per hour for Unit 2 was unusually higher than normal compared to previous runs and to the other three units. Further data investigation revealed that the Gas Flow, a component in the calculation of the CO lbs per hour, was higher than usual. In addition, the technician that operated U2 on May 30, 2020 stated that the NH3 control was increasing output to higher amounts than required. The NH3 component uses fuel flow as an input to control NOx.

Question 13 – Describe the steps taken to correct the problem:

The instrument technician conducted an investigation of U2 fuel flow system and monitors. During the troubleshooting, the instrument technician verified that there was no issues with the fuel flow element, however, the fuel flow output frequency sent to the converter that converts frequency to mA was transmitting a higher value than usual. This investigation revealed that U2 converter was reading higher value than usual and was becoming unstable (**see attachment 3: Trends**). The U2 trend on 5/29 show a stable fuel flow rate at 30 MW; however, the trend on 5/30 show the fuel flow signal to the converter had become unstable and at 25 MW the fuel converter sent a higher fuel flow value. The converter was replaced, reconfigured and tested to ensure the output signal from fuel flow to the converter was stable. The U2 trend for 6/2 returned to normal and the converter is reading a normal value at 49 MW.

Question 16 – Facility retuned to compliance?

U2 came into compliance June, 1, 2020.

ATTACHMENT 1

Canyon Power Platn ID# 153992
5/30/2020

First Run

	2_CO_LBHR #/hr	2_COlb_SUH pounds
16:23	224.14	3.74
16:24	424.27	10.81
16:25	39.73	11.47
16:26	10.11	11.64
16:27	7.78	11.77
16:28	5.49	11.86
16:29	4.15	11.93
16:30	3.57	11.99
16:31	2.79	12.03
16:32	2.19	12.07
16:33	3.62	12.13
16:34	12.88	12.35
16:35	14.32	12.58
16:36	14.38	12.82
16:37	16.62	13.1
16:38		
16:39		
16:40		
16:41		
16:42		
16:43		
16:44		
16:45		
16:46		
16:47		
16:48		
16:49		
16:50		
16:51		
16:52		
16:53		
16:54		
16:55		
16:56		
16:57		
16:58		

Canyon Power Plant Emission Compliance Log

5/30/20

ALL HRS OF OPERATION ACCORDING TO DAHS CLOCK			Unit 1		Unit 2		Unit 3		Unit 4	
			1st Start	2nd Start	1st Start	2nd Start	1st Start	2nd Start	1st Start	2nd Start
OPERATOR		INITIALS	T.W		T.W	T.W	T.W	T.W	T.W.	
Unit On		DAHS TIME	1623		1623	1736	1623	1839	1623	
NOx LBS SUH during first 5 min. Startup	LBS	If < 7 then OK to Proceed	.79		2.49	.92	.64	.37	1.12	
CO LBS SUH during first 5 min. Startup	LBS	If < 7 then OK to Proceed	3.38		11.86	3.07	2.96	1.85	3.36	
NOx Corr after Compliance (< 2.5 PPM)		DAHS TIME	1639			1747	1642		1688	
		PPM	2.43			2.36	2.34		2.24	
CO Corr after Compliance (< 4.0 PPM)		DAHS TIME	1629			1742	1631	1846	1631	
		PPM	384			370	3.95	370	3.41	
Online Calibration (start 15 minutes prior to the end of hour)										
		DAHS TIME								
NOxC_1hr [Prior to Calibration < 2.5 PPM]		PPM								
COC_1hr [Prior to Calibration < 4.0 PPM]		PPM								
SHUTDOWN HOUR										
		DAHS TIME	2031			1830	1758	1911	2034	
NoxC_1hr [PRIOR TO SHUTDOWN < 2.5 PPM]		PPM	1.71			1.38	1.62	1.74	1.81	
COC_1hr [PRIOR TO SHUTDOWN < 4.0 PPM]		PPM	1.40			1.61	2.71	2.01	2.01	
Noxlb60m [PRIOR TO SHUTDOWN < 4.07 LBS]		LBS	1.91			3.46	1.77	1.75	1.81	
COlb60m [PRIOR TO SHUTDOWN < 4.15 LBS]		LBS	1.22			6.29	1.79	1.99	1.29	
Trans Off		DAHS TIME				1835	1806			
OPERATOR		INITIALS	T.W			T.W	T.W	T.W	T.W	

Pg2

		2_CO_LBHR #/hr	2_COlb_SUH pounds	
	16:59	0		
	17:00	0		
	17:01	0		
	17:02	0		
	17:03	0		
	17:04	0		
	17:05	0		
	17:06	0		
	17:07	0		
	17:08	0		
	17:09	0		
	17:10	0		
	17:11	0		
	17:12	0		
	17:13	0		
	17:14	0		
	17:15	0		
	17:16	0		
	17:17	0		
	17:18	0		
	17:19	0		
	17:20	0		
	17:21	0		
	17:22	0	13.10 CO lbs/hr DAHS	
	17:23	0	11.6 CO lbs/hr permit limit	
	17:24	0	1.50 CO lbs/hr exceedance	
	17:25	0		
	17:26	0		
	17:27	0		
	17:28	0		
	17:29	0		
	17:30	0		
	17:31	0		
	17:32	0		
	17:33	0		
	17:34	0		
	17:35	0		
Second Run	17:36	58.08	1.25	
	17:37	102.76	2.68	
	17:38	11.81	2.88	
	17:39	4.22	2.95	
	17:40	4.14	3.02	
	17:41	3.3	3.07	
	17:42	2.19	3.11	
	17:43	1.58	3.13	
	17:44	1.29	3.16	
	17:45	1.14	3.18	
	17:46	1.06	3.19	
	17:47	1.03	3.21	
	17:48	1.01	3.23	
	17:49	0.98	3.24	

ATTACHMENT 2

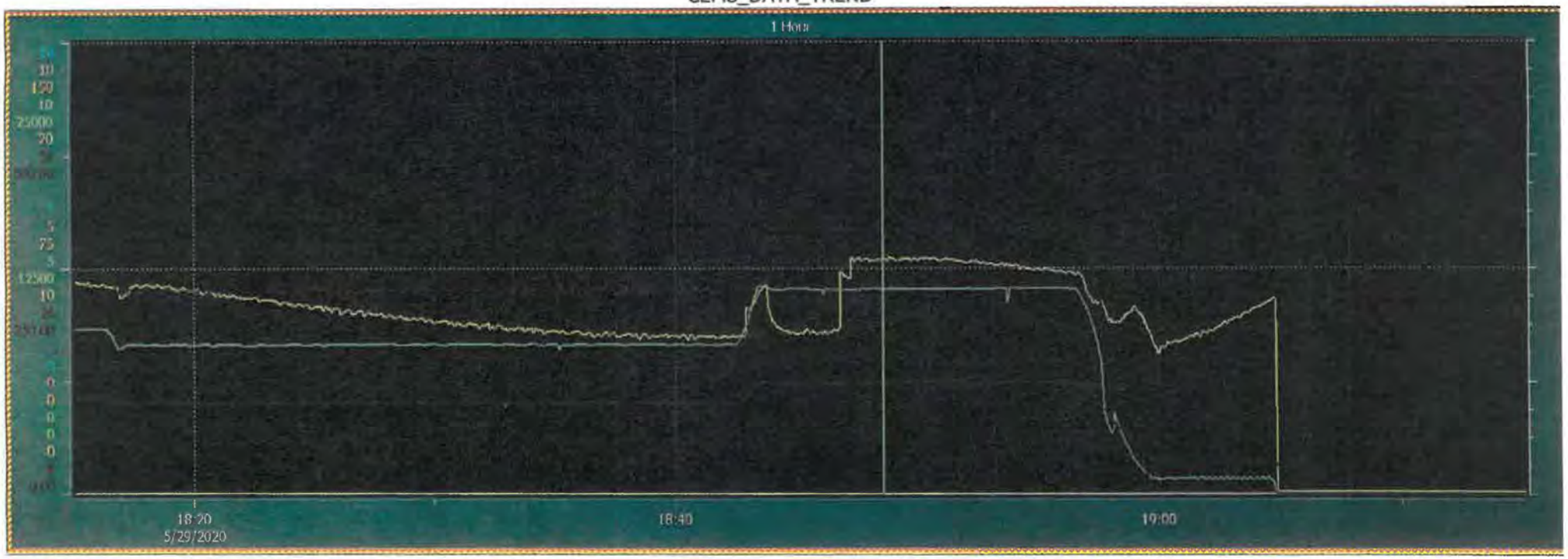
Canyon Power Plant Emission Compliance Log

5/30/20

ALL HRS OF OPERATION ACCORDING TO DAHS CLOCK			UNIT 1		Unit 2		UNIT 3		Unit 4	
			1st Start	2nd Start	1st Start	2nd Start	1st Start	2nd Start	1st Start	2nd Start
OPERATOR		INITIALS	T.W		T.W	T.W	T.W	T.W	T.W.	
Flame On		DAHS TIME	1623		1623	1736	1623	1839	1623	
NOx LBS SUH during first 5 min. Startup	LBS	If < 7 then OK to Proceed	.79		2.49	.92	.64	.37	1.12	
CO LBS SUH during first 5 min. Startup	LBS	If < 7 then OK to Proceed	3.38		11.86	3.07	2.96	1.85	3.36	
NOx Corr after Compliance (< 2.5 PPM)		DAHS TIME	1639			1747	1642		1638	
		PPM	2.43			2.36	2.34		2.24	
CO Corr after Compliance (< 4.0 PPM)		DAHS TIME	1629			1742	1631	1846	1631	
		PPM	3.84			3.70	3.44	3.70	3.41	
Online Calibration (start 15 minutes prior to the end of hour)										
		DAHS TIME								
NOxC_1hr [Prior to Calibration < 2.5 PPM]		PPM								
COC_1hr [Prior to Calibration < 4.0 PPM]		PPM								
SHUTDOWN HOUR										
		DAHS TIME	2031			1830	1758	2031	2034	
NoxC_1hr [PRIOR TO SHUTDOWN < 2.5 PPM]		PPM	1.79			1.38	1.62	1.74	1.81	
COC_1hr [PRIOR TO SHUTDOWN < 4.0 PPM]		PPM	1.90			1.61	2.71	2.01	2.01	
Noxlb60m [PRIOR TO SHUTDOWN < 4.07 LBS]		LBS	1.91			3.46	1.77	1.75	1.81	
COlb60m [PRIOR TO SHUTDOWN < 4.15 LBS]		LBS	1.22			6.29	1.79	1.99	1.29	
Flame Off		DAHS TIME				1835	1806			
OPERATOR		INITIALS	T.W			T.W.	T.W	T.W	T.W	

ATTATCHMENT 3

CEMS_DATA_TREND

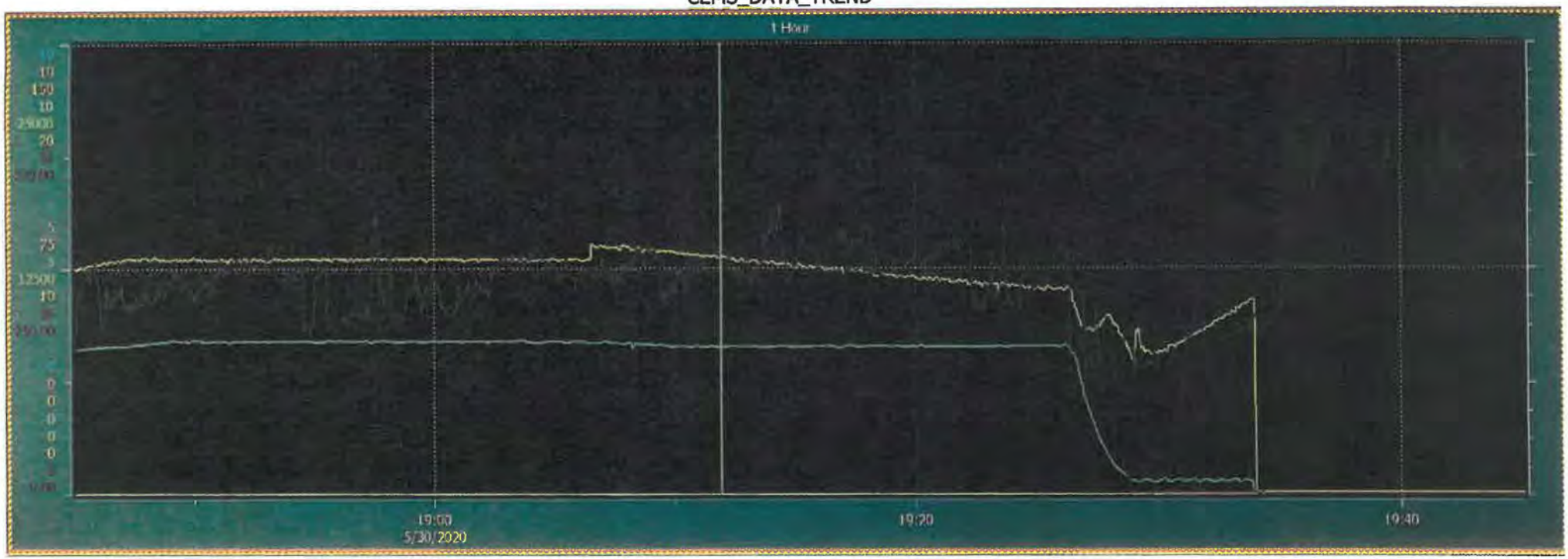


5/29/2020 6:15:00 PM

5/29/2020 7:15:00 PM

	Visible	Trace Color	Object Name	Object Description	Current Value	Low Range	High Range	Ruler Time	Ruler Value
1	X		2_AI_9912:Value	NOx ppm 15% Corrected	0.00	0	10	5/29/2020 6:48:36 PM	
2	X		2_AI_9903:Value	CO ppm 15% Corrected	0.00	0	10	5/29/2020 6:48:36 PM	
3	X		2_FI_4423:Value	Ammonia Flow	0.95	0	150	5/29/2020 6:48:36 PM	77.89
4	X		2_AI_9904:Value	NH3 Slip 15% Corrected	0.00	0	10	5/29/2020 6:48:36 PM	
5	X		CT2_FT6243_MAS:Value	CTG2 WATER INJECTION FLOW MASS	12.00	0	25000	5/29/2020 6:48:36 PM	11331.31
6	X		CT2_FT62231:Value	CTG2 SPRINT WATER FLOW RATE (SUPPLY)	0.00	0	20	5/29/2020 6:48:36 PM	0.00
7	X		CT2_WX_AI:Value	CT2 GENERATOR MW	0.05	0	51	5/29/2020 6:48:36 PM	30.07
8	X		CT2_FC6246:Value	CTG2 GAS FUEL FLOW RATE (SUPPLY)	0.00	0.00	500.00	5/29/2020 6:48:36 PM	123.10
9									
10									

CEMS_DATA_TREND

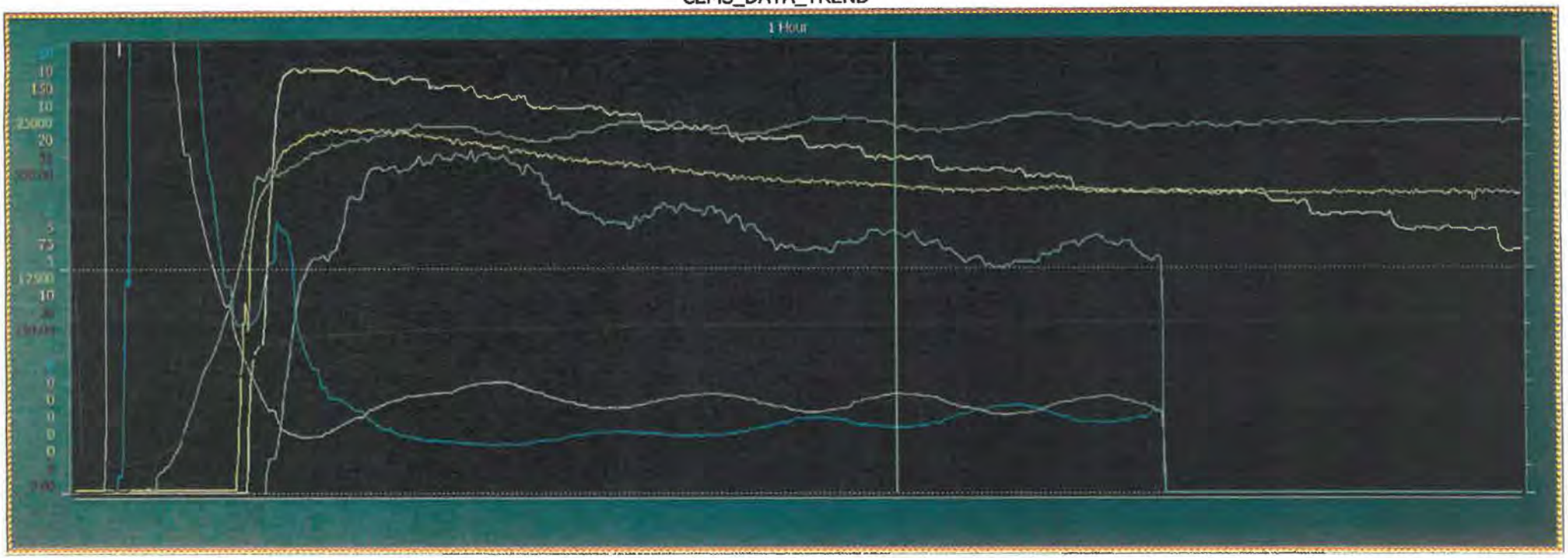


5/30/2020 6:45:00 PM

5/30/2020 7:45:00 PM

	Visible	Trace Color	Object Name	Object Description	Current Value	Low Range	High Range	Ruler Time	Ruler Value
1	X		2_AI_9912:Value	NOx ppm 15% Corrected	0.00	0	10	5/30/2020 7:11:55 PM	
2	X		2_AI_9903:Value	CO ppm 15% Corrected	0.00	0	10	5/30/2020 7:11:55 PM	
3	X		2_FI_4423:Value	Ammonia Flow	0.95	0	150	5/30/2020 7:11:55 PM	78.52
4	X		2_AI_9904:Value	NH3 Slip 15% Corrected	0.00	0	10	5/30/2020 7:11:55 PM	
5	X		CT2_FT6243_MAS:Value	CTG2 WATER INJECTION FLOW MASS	20.00	0	25000	5/30/2020 7:11:55 PM	8139.00
6	X		CT2_FT62231:Value	CTG2 SPRINT WATER FLOW RATE (SUPPLY)	0.00	0	20	5/30/2020 7:11:55 PM	0.00
7	X		CT2_WX_AI:Value	CT2 GENERATOR MW	0.05	0	51	5/30/2020 7:11:55 PM	25.14
8	X		CT2_FC6246:Value	CTG2 GAS FUEL FLOW RATE (SUPPLY)	0.00	0.00	500.00	5/30/2020 7:11:55 PM	243.80
9									
10									

CEMS_DATA_TREND



6/2/2020 6:00:00 PM

6/2/2020 7:00:00 PM

	Visible	Trace Color	Object Name	Object Description	Current Value	Low Range	High Range	Ruler Time	Ruler Value
1	X		2_AI_9912:Value	NOx ppm 15% Corrected	0.00	0	10	6/2/2020 6:34:14 PM	1.46
2	X		2_AI_9903:Value	CO ppm 15% Corrected	0.00	0	10	6/2/2020 6:34:14 PM	2.20
3	X		2_FI_4423:Value	Ammonia Flow	0.95	0	150	6/2/2020 6:34:14 PM	102.25
4	X		2_AI_9904:Value	NH3 Slip 15% Corrected	0.00	0	10	6/2/2020 6:34:14 PM	5.80
5	X		CT2_FT6243_MAS:Value	CTG2 WATER INJECTION FLOW MASS	20.00	0	25000	6/2/2020 6:34:14 PM	20323.43
6	X		CT2_FT62231:Value	CTG2 SPRINT WATER FLOW RATE (SUPPLY)	0.00	0	20	6/2/2020 6:34:14 PM	14.85
7	X		CT2_WX_AI:Value	CT2 GENERATOR MW	0.05	0	51	6/2/2020 6:34:14 PM	49.14
8	X		CT2_FC6246:Value	CTG2 GAS FUEL FLOW RATE (SUPPLY)	0.00	0.00	500.00	6/2/2020 6:34:14 PM	187.43
9									
10									

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 10

CONDITION HAZ-1

List of Hazardous Materials contained at the facility:

- **Aqua Ammonia 19%**
- **Batteries**
- **Bromine**
- **Calibration gases for the CEMS**
- **CO_2**
- **Diesel Fuel**
- **Fire suppression chemicals**
- **Florescent light bulbs**
- **Freon for the chiller systems R-123**
- **Gas Turbine oil**
- **Gas compressor oil**
- **Reagents for the water treatment system**
- **SF6 in switch gear**
- **Anti-scalent RL 9007**
- **Sodium Hydroxide**
- **ChemTreat BL124**
- **Microbiocide ChemTreat CL2156**
- **Closed System Buffer Formula 6150**
- **ChemTreat CL6855**
- **12.5% Sodium Hypochlorite Solution**
- **RL 1125**
- **Simple Green**
- **ChemTreat CL41**
- **ChemTreat CL6855**
- **Formula 2530LT**
- **Conntect 5000**
- **Powerback Concentrate with Anti-Foam Agent**

Location Information		Chemical Identification			Fire Code Hazard Class Information				
1a*	201	205	207*	209	210a	210b	212	214*	215
CERSID	ChemicalLocation	ChemicalName	CommonName	CASNumber	PFCodeHazardClass	SFCodeHazardClass	RadioActive	PhysicalState	LargestContainer
10445230	RO WATER TREATMENT		ANTISCALENT RL 9007				N	b	350
10445230	AMMONIA STORAGE TANK		AQUA AMMONIA (19%)		5	31	N	b	10000
10445230	BENEATH BACK-UP GENERATOR		DIESEL FUEL		2		N	b	500
10445230	IN TURBINE ENGINES and DRUM STORAGE AREA		MOBIL JET OIL II		3		N	b	150
10445230	ELECTRIC GENERATORS AND DRUM STORAGE AREA		MOBIL DTE LIGHT OIL		4		N	b	500
10445230	HYDRAULIC STARTERS AND DRUM STORAGE AREA		MOBIL DTE 25 OIL		4		N	b	55
10445230	NATURAL GAS COMPRESSORS AND DRUM STORAGE AREA		MOBIL PEGASUS 805 OIL		4		N	b	55
10445230	IN TRANSFORMERS		MINERAL OIL		4		N	b	5680
10445230	NEAR COOLING TOWER AND IN DRUM STORAGE AREA		BIOCIDE (CHEMTREAT CL41)				N	b	330
10445230	NEAR COOLING TOWER AND IN DRUM STORAGE AREA		SODIUM HYPOCHLORITE SOLUTION		5		N	b	330
10445230	WAREHOUSE AND NEAR EXHAUST TOWERS		CALIBRATION GAS				N	c	150
10445230	DRUM STORAGE AREA	PROPANE	PROPANE	74-98-6	8		N	c	290
10445230	SUBSTATION BUILDING	SULFUR HEXAFLUOR	SF6	2551-62-4			N	c	2400
10445230	IN FIRE FIGHTING EQUIPMENT - VARIOUS AREAS	CARBON DIOXIDE	CO2	124-38-9			N	c	437
10445230	Chiller Enclosure	Freon R-123	Freon	306-83-2			N	b	920
10445230	WATER TREATMENT		MICROBIOCIDE CL206 CHEMTREAT				N	b	120
10445230	WATER TREATMENT		ChemTreat BL 124		5		N	b	320
10445230	WATER TREATMENT		ChemTreat CL 2156		5		N	b	320
10445230	WATER TREATMENT		ChemTreat CL6855		5		N	b	320
10445230	DRUM STORAGE AREA		Simple Green				N	b	55
10445230	DRUM STORAGE AREA		Formula 2530-LT (Garrat Callahan)				N	b	55
10445230	DRUM STORAGE AREA		CONNTECT 5000				N	b	55
10445230	DRUM STORAGE AREA		POWERBACK CONCENTRATE WITH ANTIFOAM AGENT				N	b	55
10445230	DRUM STORAGE AREA	Oil	WASTE OIL	8012-95-1	4		N	b	55
10445230	SHOP-WAREHOUSE	Oxygen	Oxygen Gas	7782-44-7	18		N	c	250
10445230	SHOP-WAREHOUSE	Acetylene	Acetylene	74-86-2	33	8	N	c	225

CALIFORNIA
AIR RESOURCES BOARD
Phone: 1 (916) 324-2517
Email: reftrackinfo@arb.ca.gov

File Report for "Canyon Power Plant"

Year of Filing: 2019 **Submitted Date: 02/18/2020**

Company Profile

Company Name : **City of Anaheim** Federal tax ID : ********970**

Contact Person Details

Person Name : **Mr. Ronald Hoffard (Generation Manager)**

Phone : **Contact: 7147654536**

Email : **rhoffard@anaheim.net**

Mailing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
CA

Billing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
Anaheim

Facility Profile

Facility Name : **Canyon Power Plant** Federal tax ID : ********970**

Contact Person Details

Person Name : **Mr. Ronald Hoffard (Generation Manager)**

Phone : **Contact: 7147654536**

Email : **rhoffard@anaheim.net**

Mailing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
CA

Billing Address Information

3071 East Miraloma Ave.
Anaheim, 92806
Anaheim

Refrigeration System Listing

Number	System ID	Full Charge (lbs)	Refrigerant Type	Installation Date	Temperature Class	Equipment Type	Manufacturer	Operational Status	Model	Model Year	Serial Number	Location	Floor Plan (Y/N)
1	CH-100	5200.00	R-123	05/12/2011	Medium	Chiller (Refrigeration/Industrial Process Cooling)	Trane	Normal Operation	CDHF3000	2011	L10A00350	North side of facility, in dedicated chiller enclosure.	Y
2	CH-200	5200.00	R-123	05/12/2011	Medium	Chiller (Refrigeration/Industrial Process Cooling)	Trane	Normal Operation	CDHF3000	2011	L10B00882	North side of facility in dedicated chiller enclosure.	Y

Leak detection System

Number	ALD ID	Refrigeration System ID	Installation Date	ALD Type	Detection Limit	Alarm Set Point	Concentration Monitor Type	Manufacturer	Number of Sensors	Sensor Type	Sensor Manufacturer	Location of Sensors/Inlets
1	301-IRF A	CH-100CH-200	05/12/2011	Concentration Monitor (Direct System)	10.00	100	0	Honeywell	2	Infra red	Vulcain/honeywell	1 foot above floor

Refrigeration System Inspection and Servicing

Number	Service Date	System ID	Leaks Detected?	Date Leak Detected	Date Leak Repaired	Number of Days	Refrigerant Added (lbs)	Cause of Leak	Service Provided	Date of Initial VT	Date of Follow-up VT	Purpose of Added Refrigerant	Technician Name	Certificate #	Certificate Type
1	04/16/2019	CH-100	No			0	0.00								
2	04/16/2019	CH-200	No			0	0.00								
3	09/26/2019	CH-200	No			0	0.00								
4	09/29/2019	CH-100	No			0	0.00								
5	10/03/2019	CH-100	No			0	0.00								
6	10/03/2019	CH-200	No			0	0.00								
7	10/08/2019	CH-100	No			0	0.00								
8	10/08/2019	CH-200	No			0	0.00								
9	11/07/2019	CH-200	No			0	0.00								
10	11/07/2019	CH-100	Yes	11/06/2019	11/06/2019	0	0.00	Purge - Solenoids Valves		11/07/2019	11/07/2019		Gllbert Chavez, Jr.	000223692	Universal

Leak Detection System Inspection and Servicing

Number	Service Date	ALD ID	Service Type	Description of Service
1	08/06/2019	301-IRF A	Callibration	Performed calibration test on Ref Monitor and calibrated both sensors.

Refrigerant Purchase Information

Type	Total Purchased (lbs.)	Total Charged (lbs.)	Total Recovered (lbs.)	Total Stored (lbs.)	Total Shipped (lbs.)
R-123	0.00	0.00	0.00	0.00	0.00

Comment

Submitted By: Ronald Hoffard

CALIFORNIA
AIR RESOURCES BOARD
Phone: (916) 324-2517
Email: rmp@arb.ca.gov
URL: www.arb.ca.gov/rmp/rmp.htm

Invoice Detail

Invoice No: 117679 **Invoice For Year:** 2019 **ARB REFERENCE CODE:** RMP **Dated:** 02/18/2020

City of Anaheim				
#	Facility Name	Amount Due($)	Exemption	Total ($)
1	Canyon Power Plant (CIT003-001)	370.00	0	370.00
TOTAL CHARGES				370.00

Please return a copy on the invoice with your payment to the address below.
"Checks should be made payable to the California Air Resources Board.
If required for your company records, the CARB Federal Tax ID is 68-0288069. A $10 service fee may apply for returned checks."

Air Resources Board

Attn: Accounting

P.O. Box 1436

1001 I St., Floor 20

Sacramento, CA 95812-1436

CALIFORNIA
AIR RESOURCES BOARD
Phone: (916) 324-2517
Email: reftrackinfo@arb.ca.gov

Online Payment Receipt

Invoice No:	**117679**	**Dated:**	**2020-02-18**
Invoice For Year:	**2019**		
Payment Amount:	**$370.00**		
ARB Reference Code:	**RMP**		
Transaction Time:	**02/18/2020 12:34:43 PM**		
Payment Transaction Id:	**180220AC0-DF26D133-CADF-4763-9A24-998B7691A613**		
Payment Result:	**APPROVAL**		
Payment Approval Code:	**018368**		

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 11

CONDITION HAZ-8

In the annual compliance report, the project owner shall include the following statements:

"All current project employee and appropriate contractor background investigations have been performed and that updated certification statements have been appended to the operations security plan".

All current project employee and appropriate contractor background investigations have been performed and that updated certification statements have been appended to the operations security plan.

"The operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations".

The operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 12

SOIL & WATER USE REPORT-7

Monthly Water Reading Reports

Company: City of Anaheim/Canyon Power Plant
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2020
Period End: 12/31/2020

Recycle Water Usage

Annual Total Gallons	Annual Total Acre Feet	Monthly Average Gallons	Monthly Average Acre Feet	Monthly Minimum Gallons	Monthly Minimum Acre Feet	Monthly Maximum Gallons	Monthly Maximum Acre Feet	Average Gallons Per Day
21,643,884	66.42	1,803,657	5.54	513,791	1.58	4,192,820	12.87	59,519

Company: City of Anaheim/Canyon Power Plant
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2020
Period End: 12/31/2020

Potable Water Usage

Annual Total Gallons	Annual Total Acre Feet	Monthly Average Gallons	Monthly Average Acre Feet	Monthly Minimum Gallons	Monthly Minimum Acre Feet	Monthly Maximum Gallons	Monthly Maximum Acre Feet	Average Gallons Per Day
1,033,962	3.17	43,082	0.13	0.00	0.00	664,268	2.04	1,402

Annual Data

	Recycle Water		Portable Water	
	Annual Total Acre Feet	Annual Total Gallons	Annual Total Acre Feet	Annual Total Gallons
2018	73.09	23,817,912	6.99	2,277,132
2019	60.04	19,563,004	0.33	106,201
2020	66.42	21,643,884	3.17	1,033,962
Average	66.52	21,674,933	3.50	1,139,098
Min	60.04	19,563,004	0.33	106,201
Max	73.09	23,817,912	6.99	2,277,132

Company: City of Anaheim
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2020
Period End: 12/31/2020

Recycled Water Usage

Date	Start Cubic-ft	End Cubic-ft	Total Cubic-ft	Month gal	Daily gal	Month Acre-ft
1/1/2019	20,249,100	20,809,600	560,500	4,192,820.25	135,252.27	12.87
2/1/2019	20,809,600	21,210,000	400,400	2,995,192.20	106,971.15	9.19
3/1/2019	21,210,000	21,325,100	115,100	861,005.55	27,774.37	2.64
4/1/2019	21,325,100	21,433,300	108,200	809,390.10	26,979.67	2.48
5/1/2019	21,433,300	21,529,200	95,900	717,379.95	23,141.29	2.20
6/1/2019	21,529,200	21,656,000	126,800	948,527.40	31,617.58	2.91
7/1/2019	21,656,000	21,963,800	307,800	2,302,497.90	74,274.13	7.07
8/1/2019	21,963,800	22,360,299	396,499	2,966,010.77	95,677.77	9.10
9/1/2019	22,360,299	22,703,700	343,401	2,568,811.18	85,627.04	7.88
10/1/2019	22,703,700	22,945,500	241,800	1,808,784.90	58,347.90	5.55
11/1/2019	22,945,500	23,073,790	128,290	959,673.35	31,989.11	2.95
12/1/2019	23,073,790	23,142,474	68,684	513,790.66	16,573.89	1.58
		Annual Total:	2,893,374.00	21,643,884.21		66.42
		Average:	241,114.50	1,803,657.02	59,518.85	5.54
		Monthly Minimum:	68,684.00	513,790.66		1.58
		Monthly Maximum:	560,500.00	4,192,820.25		12.87

Company: City of Anaheim
Plant Location: 3071 E. Miraloma Ave.
City/State/Zip: Anaheim, CA 92806

Period Start: 1/1/2020
Period End: 12/31/2020

Potable Water Usage

HCF-1

Date	Start Cubic-ft	End Cubic-ft	Total Cubic-ft	Month gal	Daily gal	Month Acre-ft
1/1/2020	828,600	828,600	0.00	0.00	0.00	0.00
2/1/2020	828,600	828,700	100.00	748.05	26.72	0.00
3/1/2020	828,700	828,700	0.00	0.00	0.00	0.00
4/1/2020	828,700	856,400	27,700.00	207,209.85	6,907.00	0.64
5/1/2020	856,400	945,200	88,800.00	664,268.40	21,428.01	2.04
6/1/2020	945,200	945,400	200.00	1,496.10	49.87	0.00
7/1/2020	945,400	945,400	0.00	0.00	0.00	0.00
8/1/2020	945,400	945,400	0.00	0.00	0.00	0.00
9/1/2020	945,400	945,476	76.00	568.52	18.95	0.00
10/1/2020	945,476	945,478	2.00	14.96	0.48	0.00
11/1/2020	945,478	945,480	2.00	14.96	0.50	0.00
12/1/2020	945,480	945,484	4.00	29.92	0.97	0.00
		Annual Total:	116,884.00	874,350.76		2.68
		Average:	9,740.33	72,862.56	2,369.37	0.22
		Monthly Minimum:	0.00	0.00		0.00
		Monthly Maximum:	88,800.00	664,268.40		2.04

HCF-2

Date	Start Cubic-ft	End Cubic-ft	Total Cubic-ft	Month gal	Daily gal	Month Acre-ft
1/1/2020	225,859.00	226,293.00	434.00	3,246.54	104.73	0.01
2/1/2020	226,293.00	226,888.00	595.00	4,450.90	158.96	0.01
3/1/2020	226,888.00	227,661.00	773.00	5,782.43	186.53	0.02
4/1/2020	227,661.00	230,162.00	2,501.00	18,708.73	623.62	0.06
5/1/2020	230,162.00	236,939.00	6,777.00	50,695.35	1,635.33	0.16
6/1/2020	236,939.00	238,203.00	1,264.00	9,455.35	315.18	0.03
7/1/2020	238,203.00	240,696.00	2,493.00	18,648.89	601.58	0.06
8/1/2020	240,696.00	242,209.00	1,513.00	11,318.00	365.10	0.03
9/1/2020	242,209.00	243,774.00	1,565.00	11,706.98	390.23	0.04
10/1/2020	243,774.00	245,514.00	1,740.00	13,016.07	419.87	0.04
11/1/2020	245,514.00	246,579.00	1,065.00	7,966.73	265.56	0.02
12/1/2020	246,579.00	247,196.00	617.00	4,615.47	148.89	0.01
		Annual Total:	21,337.00	159,611.43		0.49
		Average:	1,778.08	13,300.95	434.63	0.04
		Monthly Minimum:	434.00	3,246.54		0.01
		Monthly Maximum:	6,777.00	50,695.35		0.16

Summary for both meters

Annual Total:	138,221.00	1,033,962.19		3.17
Average:	5759.21	43081.76	1402.00	0.13
Monthly Minimum:	0.00	0.00		0.00
Monthly Maximum:	88,800.00	664,268.40		2.04

OCWD/Anaheim Distribution & Sale of GWRS Water Supplied

TO Anaheim Public Utilities Dept.
Attn: Al Shaikh
201 S. Anaheim Blvd. Suite #601
Anaheim, CA 92805

CUSTOMER ID:	20250
RATE:	$602 / AF
ACCOUNT:	1001.41500
AGMT NO:	6075

METER ID:	21024735
UNIT:	GALLONS
MULTIPLIER:	X1000
FISCAL YEAR:	2019-2020
READ DATE:	3/31/2020

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	JULY 2019	AUGUST 2019	SEPT 2019	OCT 2019	NOV 2019	DEC 2019
(1) Beginning Read	160,867	162,779	164,926	166,194	168,196	169,901
(2) Ending Read	162,779	164,926	166,194	168,196	169,901	172,311
Total Units (Gallons x1000)	1,912,000	2,147,000	1,268,000	2,002,000	1,705,000	2,410,000
Total Acre Feet	5.87	6.59	3.89	6.15	5.23	7.40
AMOUNT DUE:	$3,533.74	$3,967.18	$2,341.78	$3,702.30	$3,148.46	$4,448.78

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	JAN 2020	FEB 2020	MAR 2020	APR 2020	MAY 2020	JUNE 2020
(1) Beginning Read	172,311	175,470	178,835	178,835	179,444	180,941
(2) Ending Read	175,470	178,835	181,277	179,444	180,941	182,495
Total Units (Gallons x1000)	3,159,000	3,365,000	2,442,000	609,000	1,497,000	1,554,000
Total Acre Feet	9.70	10.33	7.50	1.87	4.61	4.77
AMOUNT DUE:	$5,839.40	$6,218.66	$4,515.00	$1,125.74	$2,775.22	$2,871.54

OCWD/Anaheim Distribution & Sale of GWRS Water Supplied

TO Anaheim Public Utilities Dept.
Attn: Al Shaikh
201 S. Anaheim Blvd. Suite #601
Anaheim, CA 92805

CUSTOMER ID:	20250
RATE:	$689 / AF
ACCOUNT:	1001.41500
AGMT NO:	6075

METER ID:	21024735
UNIT:	GALLONS
MULTIPLIER:	X1000
FISCAL YEAR:	2020-2021
READ DATE:	12/31/2020

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	JULY 2020	AUGUST 2020	SEPT 2020	OCT 2020	NOV 2020	DEC 2020
(1) Beginning Read	182,495	184,549	187,998	190,542	192,539	193,254
(2) Ending Read	184,549	187,998	190,542	192,539	193,254	194,216
Total Units (Gallons x1000)	2,054,000	3,449,000	2,544,000	1,997,000	715,000	962,000
Total Acre Feet	6.31	10.59	7.81	6.13	2.20	2.95
Old Rate $602/AF:	$3,798.62	$6,375.18	$0.00			
New Rate $689/AF:	$4,347.59	$7,296.51	$5,381.09	$4,223.57	$1,515.80	$2,032.55
Difference:	$548.97	$921.33	$5,381.09			

LOCATION:	CANYON POWER PLANT (CPP)					
MONTH:	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUNE 2021
(1) Beginning Read						
(2) Ending Read						
Total Units (Gallons x1000)						
Total Acre Feet						
AMOUNT DUE:						

Wastewater Flow Meter Calibration Report

Flowtrace
A Division of The Conservtech Group

5875 Rickenbacker Road
Commerce, CA 90040
323-867-9044
fax: 323-867-9045

January 22, 2021

Ms. Bertha A. Hernandez
Environmental Services Specialist
3071 E. Miraloma Ave.
Anaheim, CA 92806

Subject: Effluent Flow Meter Hydraulic Calibration Report
(Ref: Job # F17M1652)

Facility: City of Anaheim
Canyon Power Plant
3071 E. Miraloma Ave.
Anaheim, CA 92806
I.W. Permit No. 1-600296

Dear Ms. Hernandez,

Enclosed are two copies of your wastewater flow meter calibration report for the hydraulic test conducted on January 20, 2021. Please sign the original report on the last page where indicated and mail it to the Orange County Sanitation District with the cover letter addressed to Mila Kleinbergs. An envelope with a mailing label is also enclosed for your convenience.

We will contact you in advance of the next scheduled calibration. Once again, let me thank you for entrusting The Conservtech Group and its Flowtrace Division with your environmental needs. If you have any questions about this report or any of the environmental engineering services that we provide, I hope that you will not hesitate to contact me. I can be reached via e-mail at bob@conservtechgroup.com or by phone at 323-867-9044.

Best regards,

Robert J. MacDonald, P.E., CPP
President & Principal Engineer

enclosures

Flowtrace
A Division of The Conservtech Group

5875 Rickenbacker Road
Commerce, CA 90040
323-867-9044
fax: 323-867-9045

January 22, 2021

Ms. Mila Kleinbergs
Source Control Program
Orange County Sanitation Districts
10844 Ellis Avenue
Fountain Valley, CA 92708

Subject: Effluent Flow Meter Hydraulic Calibration Report

Facility: City of Anaheim
Canyon Power Plant
3071 E. Miraloma Ave.
Anaheim, CA 92806
I.W. Permit No. 1-600296

Dear Ms. Kleinbergs,

Enclosed is our report on the effluent flow meter hydraulic calibration completed at the subject facility on January 20, 2021. The calibration was conducted in accordance with requirements of the Orange County Sanitation District, and the meter was determined to be operating within ± 5% accuracy limits for the entire range tested.

If you have any questions regarding this calibration report, please contact me directly, or Bertha A. Hernandez, Environmental Services Specialist.

Sincerely,

Robert J. MacDonald, P.E., CPP
President & Principal Engineer

Enclosures

cc: Bertha A. Hernandez, Environmental Services Specialist

WASTEWATER FLOW METER
HYDRAULIC CALIBRATION

PREPARED BY

Flowtrace
A Division of The Conservtech Group

FOR

City of Anaheim
Canyon Power Plant
3071 E. Miraloma Ave.
Anaheim, CA 92806

I.W. Permit No. 1-600296

January 20, 2021

The Conservtech Group / Flowtrace Division | 5875 Rickenbacker Road | Commerce | California | 90040
phone: 323-867-9044 | fax: 323-867-9045

EFFLUENT FLOW METER CALIBRATION REPORT

Company Name: City of Anaheim Permit No.: 1-600296

Discharge Address: 3071 E. Miraloma Ave. Anaheim, CA 92806

Mailing Address: 201 S. Anaheim Blvd. Suite 1101 Anaheim, CA 92805

Meter Location *[Use Meter Location Form (page 3) to identify location]*

☐ a ☐ b ☐ c ☐ d ☒ Other: (Attach sketch)

Effluent Meter Description

Open Channel

A. Flume:
- ☐ Parshall Flume
- ☐ Palmer-Bowlus Flume
- ☐ Trapezoidal
- ☐ Other, Specify:

B. Weir.
- ☐ V-notch
- ☐ Rectangular
- ☐ Trapezoidal
- ☐ Other, Specify:

C. Other
Description:

In-line
- ☒ Magnetic
- ☐ Propeller
- ☐ Ultrasonic
- ☐ Other, Specify:

Effluent Meter Description

Primary Element

Size: 4"

Manufacturer: Badger

Meter Series 2000

Secondary Element

Manufacturer: N/A

Recorder's 100% span = N/A GPM

Totalizer Units: = 1 Gallons per Count

Sampling Signal Contact Closure Frequency: 1 closure per N/A gallons discharged.

Current Facility Wastewater Discharge Rate to Sewer Determined by Calibration Engineer

Average 200 GPM

Peak 300 GPM

EFFLUENT FLOW METER CALIBRATION REPORT

5. Calibration Results

Type of Calibration: [X] Hydraulic [ ] Instrument

Calibration System		Existing Meter				Error (%)	
Flow Rate GPM	Total Discharge Gallons	Primary Element's Head	Flow Rate, GPM Indicator	Recorder	Total Discharge Gallons	Recorder	Totalizer
287	890	--	290	--	902	--	1.3%
249	767	--	252	--	780	--	1.7%
199	611	--	203	--	622	--	1.8%
150	468	--	152	--	476	--	1.7%
103	316	--	105	--	323	--	2.2%

A copy of all data collected and of any calculations performed must be attached to this form.

6. Method of Calibration Results *(attach additional sheets if necessary)*

Hydraulic: (For in line flow meters describe calibration/simulator system)

Various flow rates were achieved using 150' of 2.5" fire hose from a local hydrant to the test meter. A 2" Halliburton turbine was used to measure the water flow. At each rate tested, the meter totalizer was timed using an electronic stopwatch for a number of counts. The accumulated volume was then compared to the actual volume to determine the totalizer accuracy.

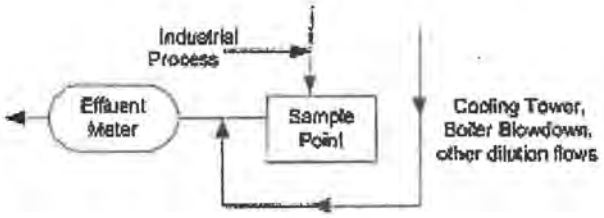
Instrument:

7. Corrective Measures *(describe condition of flow meter prior to calibration and state if any adjustments were made):*

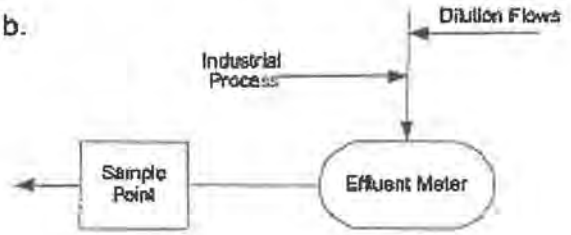
No corrective measures were required.

EFFLUENT FLOW METER LOCATION FORM

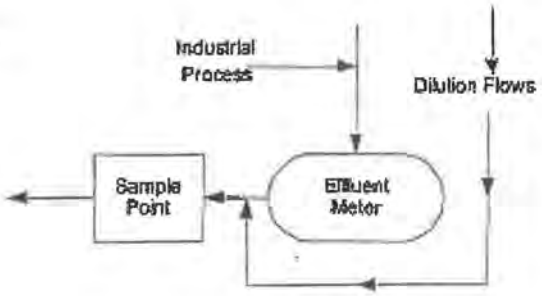
☐ a.



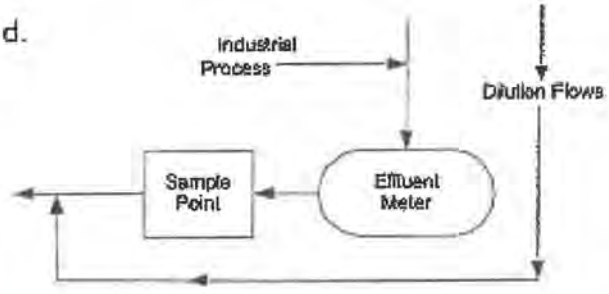
☐ b.



☐ c.



☐ d.

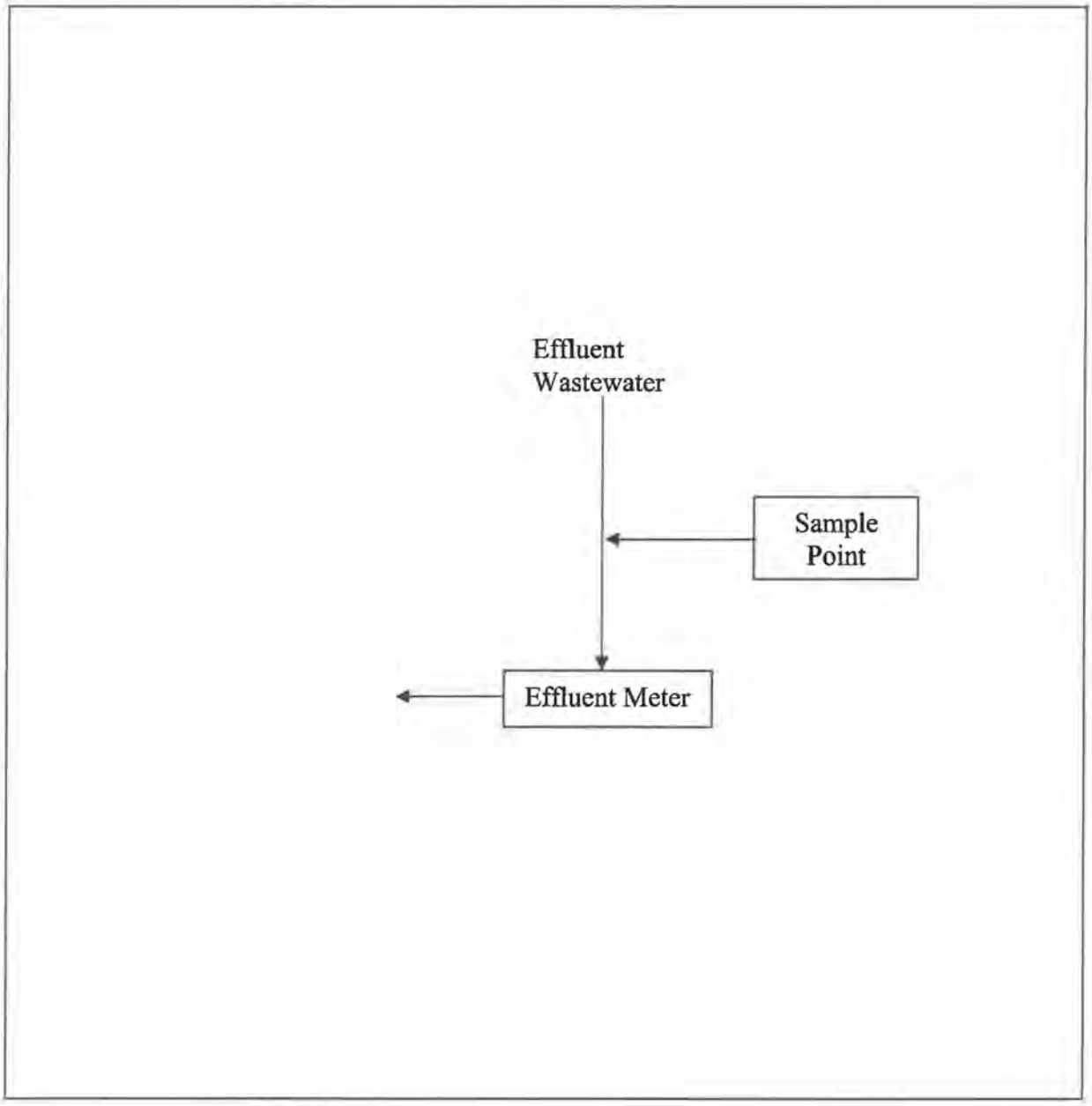


☒ Other

Please provide a schematic of the location of the effluent flow meter

Attachment:

Effluent Flow Meter Location



EFFLUENT FLOW METER MAINTENANCE RECORDS

Company Name: City of Anaheim Permit No.: 1-600296

Discharge Address: 3071 E. Miraloma Ave., Anaheim, CA 92806

Mailing Address: 201 S. Anaheim Blvd., Suite 1101, Anaheim, CA 92805

Name of Responsible Person : Bertha A Hernandez Telephone No. 714-765-4536

Recorder's 100% span = N/A GPM Totalizer: 1 Gallons per Count

Type of Flow Meter: 4" Badger Meter Series 2000

Recorder Chart Change Frequency: ☐ Daily ☐ Weekly ☐ Monthly *(not applicable)*

REGULAR CLEANING MAINTENANCE				
Primary Element Cleaned	Level Measuring Equipment Cleaned	Other (describe)	Date	By
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	02/11/15	Yip / Paz
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	02/11/16	Yip / Paz
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	02/09/17	Yip / Paz
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/10/18	Yip / Vitug
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/10/19	Paz / Gomez
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/10/20	Yip / Gomez
N/A	N/A	Hydraulic Calibration by Flowtrace Division of The Conservtech Group	01/20/21	Yip / Gomez

CERTIFICATION OF CALIBRATION CHECK

(Certification of Test Results by a California Registered Professional Engineer)

I hereby certify that I am knowledgeable in the field of wastewater flow measurement and that I have supervised the calibration of the flow monitoring system as described on the previous page, and also have reviewed and approved all details of the method of calibration. I consider the calibration method and procedures used to be technically sound, and assume professional responsibility for the validity and accuracy of the results reported.

(Signature)

REGISTERED PROFESSIONAL ENGINEER ROBERT J. MACDONALD M 29874 Exp 6/30/22 MECHANICAL STATE OF CALIFORNIA

Robert J. MacDonald, P.E.
(Full Name – Please Print or Type)

M29874 Expires 6/30/22	**Mechanical**	1/22/2021
(California Professional Engineering Certification No.)	(Engineering Discipline)	(Date)

CERTIFICATION OF TEST RESULTS BY AN ADMINISTRATIVE OFFICIAL OF THE COMPANY

City of Anaheim	**1-600296**
(Company Name)	(Permit No.)

I hereby certify that the flow monitoring system certified as properly calibrated above is so arranged and operated, so as to accurately measure and record the industrial wastewater flow to the sewer system.

(Signature)

RON HOFFARD
(Full Name – Please Print or Type)

GENERATION PLANT MGR.	1/25/2021
(Administrative Position in Company)	(Date)

Appendix:

Calculations Sheet
Field Calibration Data
Calibration Certificate

DICK MUNNS COMPANY

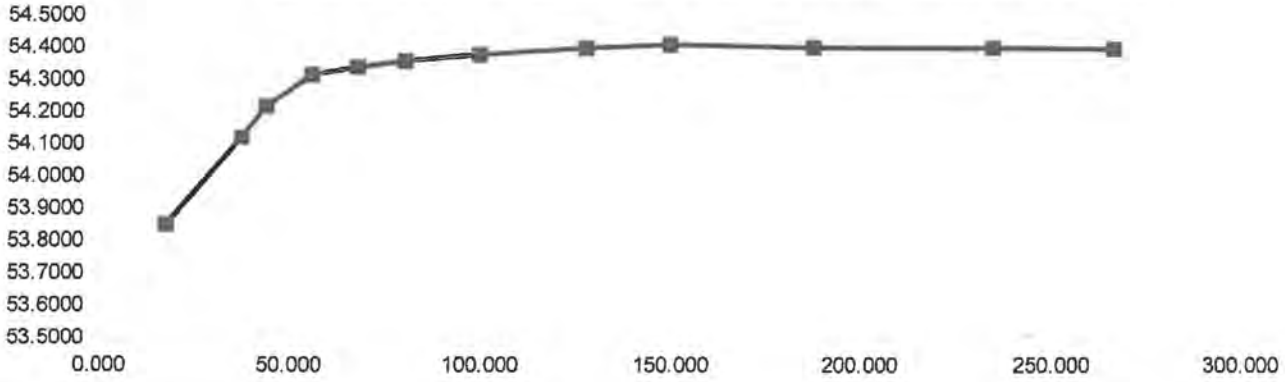
ISO 17025 ACCREDITED CL-122

CERTIFICATE OF CALIBRATION

CUSTOMER:	**CONSERVTECH COMMERCE,CA**	**CALIBRATION DATE:**	08/20/20
PO NUMBER:	9354	**CALIBRATION DUE:**	08/20/21
INST. MANUFACTURER:	HALLIBURTON	**PROCEDURE:**	NAVAIR17-20MG,NIST250
INST. DESCRIPTION:	TURBINE METER	**CALIBRATION FLUID:**	H2O @ 70F
MODEL NUMBER:	458.99101 (2")	**STANDARD(S) USED:**	A710,A14 DUE 4-2021
SERIAL NUMBER:	2SBF3677	**NIST TRACE #' S:**	1446135470,1453296155
RATED UNCERTAINTY:	+/- 0.5% RD	**AMBIENT CONDITIONS:**	763mm HGA 44 % RH 74°F
UNCERTAINTY GIVEN:	TOTAL measurement uncertainty +/- .186% RD K=2	**CERTIFICATE FILE #:**	420148.3677.20

NOTES: AS RECEIVED / AS LEFT WITHIN SPECS. **CALIBRATED WITH DMC SENSOR COIL **

TEST POINT NUMBER	UUT INDICATED FREQ(HZ)	ACTUAL DM STD GPM	ACTUAL K.FACTOR PUL/GAL.	ACTUAL DM STD GPM	ACTUAL K.FACTOR PUL/GAL.
1	17.664	19.684	53.8438	20.080	53.9087
2	37.518	41.599	54.1137	37.480	54.1025
3	43.914	48.603	54.2113	47.590	54.2087
4	55.842	61.694	54.3089	58.080	54.3012
5	67.726	74.792	54.3317	70.223	54.3287
6	80.312	88.661	54.3501	90.057	54.3568
7	99.708	110.034	54.3694	114.308	54.3807
8	127.511	140.661	54.3906	145.547	54.4001
9	149.595	164.991	54.4013	177.547	54.3958
10	187.451	206.776	54.3924	213.308	54.3887
11	234.478	258.663	54.3899	248.958	54.3879
12	266.238	293.714	54.3872	291.110	54.3868



All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) used and the unit under test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed per the shown procedure number, in accordance with ISO 10012:2003, ISO 17025:2005, ANSI/NCSL-Z-540.3, and/or MIL-STD-45662A. Test methods: API2530-92 & ASME MFC-3M-1989.

Dick Munns Company • 11133 Winners Circle • Los Alamitos, CA 90720
Phone (714) 827-1215 • Fax (714) 827-0823

Date: 8/20/2020

Approved By:

Calibration Technician: EA

Recorder:

MAX = -- GPM

AVG = 200

PK = 300

Sampler:

Contact Closure = N/A gallons/pulse

Totalizer:

Finish: 96899119

Start: 96893222

Diff: 5897

MULT: 1

Total: 5897 gallons

Client: City of Anaheim - Canyon Power Plant

Date: 1/20/21 IW#: 1-600296

Element: 4" Pipe

Instrument: 4" Badger Meter M2000

Recorder: —

Calibrated Flows and Data									Meter		Recorder			Totalizer	
Turbine		Manometer - inches					Duration	Total	W.C.	Flow	Reading		Error	Total	Error
cycles	gpm	+	-	Δ	w.c.	gpm	min	gal	in.	gpm	%	gpm	%	gal	%
	287						3.10	890		290				902	1.3
	249						3.08	767		252				780	1.7
	199						3.07	611		203				622	1.8
	150						3.12	468		152				476	1.7
	103						3.07	316		105				323	2.2

Calibration Type

____ Instrumentation

X Hydraulic

Hydraulic Meter Used:

____ Turbine Meter, 1", Haliburton, Threaded

____ Turbine Meter, 1.5", XO Technologies, 150# Flange

X Turbine Meter, 2", Haliburton, flanged

____ Turbine Meter, 4", XO Technologies, 150# Flange

____ Turbine Meter, 4", Haliburton, flanged

____ Other: ____

K: 4.86

Notes:

① 95610 − 94708 = 902 @ 3:06

② 96883 − 96103 = 780 @ 3:05

③ 97786 − 97164 = 622 @ 3:04

④ 98512 − 98036 = 476 @ 3:07

⑤ 99026 − 98703 = 323 @ 3:04

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 13

SOIL & WATER REPORTS-8

OCSD Wastewater Quality Semi-Annual Monitoring Reports

04/22/2020 13:52
Serial No. A7PY011022705
TC: 45610

Addressee	Start Time	Time	Prints	Result	Note
OCSD	04-22 13:45	00:06:38	008/008	OK	

Note TMR:Timer TX, POL:Polling, ORG:Original Size Setting, FME:Frame Erase TX, PDG:Page Separation TX, MIX:Mixed Original TX, CALL:Manual TX, CSRC:CSRC, FWD:Forward, PC:PC-FAX, BND:Double-Sided Binding Direction, SP:Special Original, FCODE:F-Code, RTX:Re-TX, RLY:Relay, MBX:Confidential, BUL:Bulletin, SIP:SIP Fax, IPADR:IP Address Fax, I-FAX:Internet Fax

Result OK: Communication OK, S-OK: Stop Communication, PW-OFF: Power Switch OFF, TEL: RX from TEL, NG: Other Error, Cont: Continue, No Ans: No Answer, Refuse: Receipt Refused, Busy: Busy, M-Full:Memory Full, LOVR:Receiving length Over, POVR:Receiving page Over, FIL:File Error, DC:Decode Error, MDN:MDN Response Error, DSN:DSN Response Error, PRINT:Compulsory Memory Document Print, DEL:Compulsory Memory Document Delete, SEND:Compulsory Memory Document Send.

CITY OF ANAHEIM

PULIC UTILITIES DEPARTMENT

Environmental Services

Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	04/22/2020
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
		Subject:	Semi-Annual Self-Monitoring

We are sending you:

Copy of Original	Description
1	Completed Semi-Annual Form OCSD Self-Monitoring Form for City of Anaheim Canyon Power Plant (Permit No. 1-600296).

These are transmitted:

- [1] As requested
- [ ] For approval
- [ ] For your action
- [ ] For your review
- [ ] For your files
- [ ] For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 593-7799 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

CITY OF ANAHEIM
PULIC UTILITIES DEPARTMENT
Environmental Services
Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	04/22/2020
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
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[ ]	For approval	[ ]	For your review	[ ]	For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 593-7799 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

March 15, 2020

Ronald Hoffard, GENERATION PLANT MANAGER
City of Anaheim, Canyon Power Plant
3071 E Miraloma Ave.
Anaheim, CA 92806

Subject: **REMINDER TO CONDUCT SELF-MONITORING**
Permit No. 1-600296

Please be reminded that Self-Monitoring must be conducted between **April 01, 2020 -- April 16, 2020** in accordance with your company's permit requirements. Self-Monitoring must be conducted during a production day in accordance with the guidelines detailed in your company's permit.

It is your responsibility to comply with the requirements set forth in your company's permit. Failure to comply with all the directives, conditions, and requirements of the permit may result in enforcement action against your company.

If your company's permit shows a self-monitoring requirement for total toxic organics (TTOs) and your company has received a waiver from this self-monitoring, you are now required to submit a signed TTOs SMR form to us to comply with the TTO waiver requirements of the U.S. Environmental Protection Agency. Please indicate in the "Sample Comments" that you have received a TTOs self-monitoring waiver from us.

For permittees that have monthly as well as quarterly and/or semi-annual self-monitoring requirements, the forms may list more than the SMR constituents required for the monthly self-monitoring. We ask that you adhere to your permit's self-monitoring requirements and sample only for the constituent(s) required on a monthly basis, except when the quarterly and semi-annual self-monitoring are also required in the same month, in which case all constituents listed on the form must be analyzed for as specified in your permit.

Finally, for those who are required to submit meter readings, a list of the meter readings submitted within the last year is attached to the SMR form for your reference and comparison to current readings.

Thank you for your patience and cooperation. If you have any questions, please contact Mila Kleinbergs at 714-593-7408.

Mila Kleinbergs
Senior Engineer

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145452
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sampling Dates: **04/01/2020 to 04/16/2020** Submit By Date: **04/30/2020**
Sample Start Date: 04/08/2020 Sample End Date: 04/09/2020
Sample Start Time: 1300 PM Sample End Time: 1300 PM
Sampling Point Location: Sampling Structure located in the center of the site

Contact Person: RONALD HOFFARD Contact Phone: 714-765-4536
Contact Email: RHOFFARD@ANAHEIM.NET

☐ **No Discharge**

Water Meter Readings: *(If this is a batch discharge, enter volume only)*

Location	Meter Type	Meter ID	Stop Reading	Start Reading	Volume	Units	Digits	Int
Center of site adjacent to the final clarifier/vault	Effluent Flow Meter	EM-1-600296	91636048	91616086	19962	G	9	

Composite

Sample Results: *(If constituent is not detected or is less than detection limit, enter as reported in the lab results.)*

Constituent	Result	Units	EPA Method
BOD T	11.0	mg/L	SM 5210B
TSS	N.D	mg/L	SM 2540D

Sample Comments:

To Submit Data - Fax: (714) 593-7799 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

☐ Ronald Hoffard, please initial each page and submit all pages

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145452
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

This form must be completely filled out and Laboratory Analysis Report and Chain of Custody must be attached.

Please check if composite sample was obtained using an automatic sampling device: ( ) Yes ( ) No

In accordance with 40 CFR 403.12, the results presented herein must be verified and signed under penalty of perjury by: (i) a responsible corporate officer; (ii) general partner or proprietor; or (iii) a representative who has responsibility for the overall operation of the permitted facility, who has been authorized by the corporate officer, general partner or proprietor to sign such reports, and such authorization has been made in writing and submitted to the District.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.[40 C.F.R. § 403.6(a)(2)(ii) (2005)]

Signature (Ronald Hoffard)	Title (GENERATION PLANT MANAGER)	Date
		4/22/20

RONALD HOFFARD
Print Name

To Submit Data - Fax: (714) 593-7799 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

Ronald Hoffard, please initial each page and submit all pages

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145452
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sample Location: Compliance Equipment

Meter Type	Name	Event ID	Start - End Date	Reading End	Reading Start	Vol	
EFFLUENT	EM-1-600296	145451	10/7/2019 - 10/8/2019	82189068 Gallon	82165784 Gallon	23284	GPD
EFFLUENT	EM-1-600296	145450	4/8/2019 - 4/9/2019	76362506 Gallon	76322767 Gallon	38928	GPD

To Submit Data - Fax: (714) 593-7799 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

Ronald Hoffard, please initial each page and submit all pages

TRUESDAIL LABORATORIES, INC.

ALS - Truesdail Laboratories
3337 Michelson Drive, Suite CN750
Irvine, CA 92612
T +1 714 730 6239

Report

Client: City of Anaheim - Canyon Water Power Plant
3071 E Miraloma Ave
Anaheim, CA 92806

Attention: Bertha Hernandez
Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
P.O. Number: MA-106-491110 (exp 8/31/18)

Work Order No.: 20D0072
Printed: 04/21/2020

CASE NARRATIVE

Date & Time Installed: 04/08/2020; 13:00 PM
Date & Time Removed: 04/09/2020; 13:00 PM

Flow Start Number: 91616086 GAL
Flow Stop Number: 91636048 GAL
Total Flow, GPD: 19962

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
52-2-758 Composite	20D0072-01	Wastewater	Composite	04/09/2020 13:00	04/09/2020 14:00

DEFINITIONS

Symbol	Definition
C	GGA recovery was below the method acceptance limit.
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady

Shelly Brady
Customer Service Manager

Client: City of Anaheim - Canyon Water Power Pl

Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
Printed: 04/21/2020

52-2-758 Composite

20D0072-01 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
			ALS Truesdail						
Field Measurements									
pH	**6.97**	0.01	N/A	1	2004462	04/09/2020 13:00	SMB	EPA 150.2	
Temperature (Celsius)	**22.2**		°C	1	2004462	04/09/2020 13:00	SMB	Field	
Wet Chemistry									
Total Dissolved Solids	**70.0**	12.5	mg/L	1	2004330	04/17/2020 16:25	SMC	SM 2540 C	
Total Suspended Solids	ND	2.50	mg/L	1	2004326	04/17/2020 10:30	SMC	SM 2540 D	
General Chemistry									
Biochemical Oxygen Demand	**11.0**	2.00	mg/L	1	2004238	04/16/2020 16:58	SMC	SM 5210B - 5 Day	C

CHAIN OF CUSTODY

TRUESDAIL LABORATORIES, INC.
3337 Michelson Drive, Suite CN750, Irvine, CA 92612
(714) 730-6239 - FAX (714) 730-6462

2000072

X TURNAROUND TIME: Normal TAT
DATE: 4/8 - 4/9/20 PAGE: 1 OF 1

METHODS

COMPANY: City of Anaheim, Canyon Power Plant
CONTACT: Victor Carnaggio/Ronald Hoffard
PHONE: (714) 765-4260/**4536** FAX: (714) 666-2410
ADDRESS: 3071 E. Miraloma Ave.
Anaheim, CA 92806
Bill/Ship To: Southern California Public Power Authority
SAMPLES (SIGNATURE):

SAMPLE I.D.	DATE	TIME	DESCRIPTION	TDS	TSS	BOD	NUMBER OF CONTAINERS	COMMENTS
52-2-758	4-9-20	1300	COMP	X	X	X		PO# Ronald Hoffard Semi-Annually pH - 6.97 Temp - 22.2°

Chain of Custody Signature Record

1.	Relinquished Signature	Company/ Agency	Date/ Time: 4-9-20 1400
2.	Received Signature	Company/ Agency: PAS	Date/ Time: 4/9/2020 14:00
3.	Relinquished Signature	Company/ Agency	Date/ Time
4.	Received Signature	Company/ Agency	Date/ Time
	Relinquished Signature	Company/ Agency	Date/ Time
	Received Signature	Company/ Agency	Date/ Time

LABORATORY SAMPLE LOG-IN
(Enter following line items on invoice):

TOTAL NUMBER OF CONTAINERS

SAMPLE CONDITIONS:

RECEIVED
Cool ✓ Warm
1.6 | 0.7
1.9 | 1.0 B

Yes No

SPECIAL REQUIREMENTS:

Page 3 of 3

Page 1 of 1

TX Result Report

P 1
10/28/2020 09:51
Serial No. A7PY011022705
TC: 50717

Addressee	Start Time	Time	Prints	Result	Note
917143781277	10-28 09:50	00:01:21	008/008	OK	

Note TMR:Timer TX, POL:Polling, ORG:Original Size Setting, FME:Frame Erase TX, DPS:Page Separation TX, MIX:Mixed Original TX, CALL:Manual TX, CSAC:CSAC, FWD:Forward, PC:PC-FAX, BND:Double-Sided Binding Direction, SP:Special Original, FCODE:F-code, ATX:Re-TX, RLY:Relay, MBX:Confidential, BUL:Bulletin, SIP:SIP Fax, IPADR:IP Address Fax, I-FAX:Internet Fax

Result OK: Communication OK, S-OK: Stop Communication, PW-OFF: Power Switch OFF, TEL: RX from TEL, NG: Other Error, Cont: Continue, No Ans: No Answer, Refuse: Receipt Refused, Busy: Busy, M-Full:Memory Full, LOVR:Receiving length Over, POVR:Receiving page Over, FIL:File Error, DC:Decode Error, MDN:MDN Response Error, DSN:DSN Response Error, PRINT:Compulsory Memory Document Print, DEL:Compulsory Memory Document Delete, SEND:Compulsory Memory Document Send.

CITY OF ANAHEIM

PULIC UTILITIES DEPARTMENT
Environmental Services
Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	10/28/2020
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
		Subject:	Semi-Annual Self-Monitoring

We are sending you:

Copy of Original	Description
1	Completed Semi-Annual Form OCSD Self-Monitoring Form for City of Anaheim Canyon Power Plant (Permit No. 1-600296).

These are transmitted:

[1] As requested [ ] For your action [ ] For your files
[ ] For approval [ ] For your review [ ] For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 593-7799 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

CITY OF ANAHEIM
PULIC UTILITIES DEPARTMENT
Environmental Services
Letter of Transmittal

To:	Ms. Mila Kleinbergs Orange County Sanitation District Resource Protection Division 10844 Ellis Avenue Fountain Valley, CA 92708-7018	Date:	10/28/2020
		Project	Canyon Power Plant 3071 E. Miraloma Ave. Anaheim, CA 92806
		Subject:	Semi-Annual Self-Monitoring

We are sending you:

Copy of Original	Description
1	Completed Semi-Annual Form OCSD Self-Monitoring Form for City of Anaheim Canyon Power Plant (Permit No. 1-600296).

These are transmitted:

[1]	As requested	[ ]	For your action	[ ]	For your files
[ ]	For approval	[ ]	For your review	[ ]	For your information

Via: [ ] US Mail [X] FAX # 8 of pgs. (714) 593-7799 [ ] Hand Delivery

Remarks: Please contact me at (714) 765-7481 or bhernandez@anaheim.net if you have any questions regarding this submittal.

By: Bertha A Hernandez, Environmental Services Specialist

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

September 15, 2020

Ronald Hoffard, GENERATION PLANT MANAGER
City of Anaheim, Canyon Power Plant
3071 E Miraloma Ave.
Anaheim, CA 92806

Subject: **REMINDER TO CONDUCT SELF-MONITORING**
Permit No. 1-600296

Please be reminded that Self-Monitoring must be conducted between **October 01, 2020 -- October 16, 2020** in accordance with your company's permit requirements. Self-Monitoring must be conducted during a production day in accordance with the guidelines detailed in your company's permit.

It is your responsibility to comply with the requirements set forth in your company's permit. Failure to comply with all the directives, conditions, and requirements of the permit may result in enforcement action against your company.

If your company's permit shows a self-monitoring requirement for total toxic organics (TTOs) and your company has received a waiver from this self-monitoring, you are now required to submit a signed TTOs SMR form to us to comply with the TTO waiver requirements of the U.S. Environmental Protection Agency. Please indicate in the "Sample Comments" that you have received a TTOs self-monitoring waiver from us.

For permittees that have monthly as well as quarterly and/or semi-annual self-monitoring requirements, the forms may list more than the SMR constituents required for the monthly self-monitoring. We ask that you adhere to your permit's self-monitoring requirements and sample only for the constituent(s) required on a monthly basis except when the quarterly and semi-annual self-monitoring are also required in the same month, in which case all constituents listed on the form must be analyzed for as specified in your permit.

Finally, for those who are required to submit meter readings, a list of the meter readings submitted within the last year is attached to the SMR form for your reference and comparison to current readings.

Thank you for your patience and cooperation. If you have any questions, please contact Mila Kleinbergs at 714-593-7408.

Mila Kleinbergs
Senior Engineer

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145453
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sampling Dates: **10/01/2020 to 10/16/2020** Submit By Date: **10/31/2020**
Sample Start Date: 10/12/2020 Sample End Date: 10/13/2020
Sample Start Time: 11:10 AM Sample End Time: 11:30 AM
Sampling Point Location: Sampling Structure located in the center of the site

Contact Person: RONALD HOFFARD Contact Phone: 714 765-4536
Contact Email: RHOFFARD@ANAHEIM.NET

☐ **No Discharge**

Water Meter Readings: *(If this is a batch discharge, enter volume only)*

Location	Meter Type	Meter ID	Stop Reading	Start Reading	Volume	Units	Digits	Int
Center of site adjacent to the final clarifier/vault	Effluent Flow Meter	EM-1-600296	95804724	95766786	37938	G	9	

Composite

Sample Results: *(If constituent is not detected or is less than detection limit, enter as reported in the lab results.)*

Constituent	Result	Units	EPA Method
BOD T	ND	mg/L	SM 5210B
TSS	ND	mg/L	SM 2540D

Sample Comments:

Please note that OCSD's fax number has changed. Please use the new fax number (714) 378-1277 effective immediately if submitting completed form by fax.

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145453
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

This form must be completely filled out and Laboratory Analysis Report and Chain of Custody must be attached.

Please check if composite sample was obtained using an automatic sampling device: ( ) Yes ( ) No

In accordance with 40 CFR 403.12, the results presented herein must be verified and signed under penalty of perjury by: (i) a responsible corporate officer; (ii) general partner or proprietor; or (iii) a representative who has responsibility for the overall operation of the permitted facility, who has been authorized by the corporate officer, general partner or proprietor to sign such reports, and such authorization has been made in writing and submitted to the District.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.[40 C.F.R. § 403.6(a)(2)(ii) (2005)]

R Hoffard — 10/28/20

Signature (Ronald Hoffard) **Title (GENERATION PLANT MANAGER)** **Date**

RONALD HOFFARD

Print Name

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

IM PB

ORANGE COUNTY SANITATION DISTRICT
SELF-MONITORING FORM

SMR No.: S-145453
SMR Type: Standard
City of Anaheim, Canyon Power Plant
General Pretreatment Regulations For Existing And New Sources Of Pollution

Permit No. 1-600296

Sample Location: Compliance Equipment

Meter Type	Name	Event ID	Start - End Date	Reading End	Reading Start	Vol	
EFFLUENT	EM-1-600296	145452	4/8/2020 - 4/9/2020	91636048 Gallon	91616086 Gallon	19962	GPD
EFFLUENT	EM-1-600296	145451	10/7/2019 - 10/8/2019	82189068 Gallon	82165784 Gallon	23284	GPD

To Submit Data - Fax: (714) 378-1277 or
Mail: Orange County Sanitation District, Resource Protection Division, 10844 Ellis Avenue, Fountain Valley, CA, 92708-7018

Questions: Contact Isabel Melendez at 714-593-7313

RH Ronald Hoffard, please initial each page and submit all pages

TRUESDAIL LABORATORIES, INC.

ALS - Truesdail Laboratories
3337 Michelson Drive, Suite CN750
Irvine, CA 92612
T +1 714 730 6239

Report

Client: **Canyon Power Plant**
3071 E Miraloma Ave
Anaheim, CA 92806

Attention: Bertha Hernandez
Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
P.O. Number: MA-106-491110 (exp 8/31/18)

Work Order No.: 20J0154
Printed: 10/22/2020

CASE NARRATIVE

Date & Time Installed: 10/12/2020; 11:10 AM
Date & Time Removed: 10/13/2020; 11:30 AM

Flow Start Number: 95766786 GAL
Flow Stop Number: 95804724 GAL
Total Flow, GPD: 37938

SAMPLE RECEIPT SUMMARY

Sample ID	Laboratory ID	Matrix	Type	Date Sampled	Date Received
Semi-Annually Composite	20J0154-01	Wastewater	Composite	10/13/2020 11:30	10/13/2020 15:57

DEFINITIONS

Symbol	Definition
C	GGA (BS1) recovery was below the method acceptance limit.
DF	Dilution Factor
MDL	Method Detection Limit
ND	Not Detected
RL	Reporting Limit

Respectfully yours,

Shelly Brady

Shelly Brady
Customer Service Manager

TRUESDAIL LABORATORIES, INC.

Client: Canyon Power Plant

Project Name: Canyon Power Plant Semi-Annually Wastewater
Project Number: Canyon Power Plant
Printed: 10/22/2020

Semi-Annually Composite
20J0154-01 (Wastewater)

Analyte	Result	RL	Units	DF	Batch	Analyzed	Analyst	Method	Notes
			ALS Truesdail						
Wet Chemistry									
Total Dissolved Solids	**224**	50.0	mg/L	1	2010279	10/15/2020 17:45	SMC	SM 2540 C	
Total Suspended Solids	ND	2.78	mg/L	1	2010303	10/16/2020 11:55	HHT	SM 2540 D	
General Chemistry									
Biochemical Oxygen Demand	ND	2.00	mg/L	1	2010289	10/19/2020 17:01	SMC	SM 5210B - 5 Day	C

CHAIN OF CUSTODY

TRUESDAIL LABORATORIES, INC.
3337 Michelson Drive, Suite CN750, Irvine, CA 92612
(714) 730-6239 - FAX (714) 730-6462

20J0154

METHODS

[X] TURNAROUND TIME Normal TAT
DATE: 10/12 - 10/13/20 PAGE: 1 OF 1

COMPANY City of Anaheim, Canyon Power Plant
CONTACT Victor Carnaggio/Ronald Hoffard
PHONE (714) 765-4260/4536 FAX (714) 666-2410
ADDRESS 3071 E. Miraloma Ave.
Anaheim, CA 92806
Bill/Ship To: Southern California Public Power Authority
SAMPLES (SIGNATURE)

SAMPLE I.D.	DATE	TIME	DESCRIPTION	TDS	TSS	BOD	NUMBER OF CONTAINERS	COMMENTS
52-2-758	10-13-20	1130	COMP	X	X	X	3	PO# Ronald Hoffard Semi-Annually pH - 7.24 Temp. 22.4

Chain of Custody Signature Record

1.	Relinquished Signature	Company/ Agency	Date/ Time
2:	Received Signature	Company/ Agency	Date/ Time
3.	Relinquished Signature	Company/ Agency	Date/ Time
4.	Received Signature	Company/ Agency	Date/ Time
5.	Relinquished Signature	Company/ Agency	Date/ Time
6.	Received Signature	Company/ Agency	Date/ Time

1. ACS 10-13-20 1530
2: ACS 10/13/2020 15:30

LABORATORY SAMPLE LOG-IN
(Enter following line items on invoice):

3 **TOTAL NUMBER OF CONTAINERS**

SAMPLE CONDITIONS:

RECEIVED

Cool [✓] Warm [ ]
~~1.8~~ 2.6/1.7
1.8/0.9

Yes [ ] No [ ]

SPECIAL REQUIREMENTS:

OC Sanitation District
No Violations or Corrective Actions to report for CY 2020

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 14

VIS-4

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-4: Surface Treatment of Project Structures and Buildings

Condition of Certification VIS-4 requires a status report of the surface treatment maintenance for the structures and buildings in the Annual Compliance Report. The report shall specify the following:

1. **The condition of surfaces of all structures and buildings at the end of the reporting year 2018:**
    a. Butler Building (Administrative and Warehouse)
    b. Main Electrical Enclosure (MEE)
    c. Balance of Plan (BOPEE)
    d. Substation Building
    e. Chiller
    f. RO Skid (open wall with roof sheet metal covering)
        i. The exterior building material is fabricated sheet metal. The colors and finishes do not create excessive glare and consistent with local policies and ordinances. All structure and buildings visual inspection showed no trouble items and all are in good working order.
    g. Gas Turbines (4 identical units)
2. **Maintenance activities that occurred in CY 2020:**
    a. May Planned Outage
        i. Semi-annual maintenance performed
    b. December Planned Outage
        i. Semi-annual maintenance performed
3. **Schedule maintenance activities for CY 2021:**
    a. May 2021 Planned Outage
        i. Semi-annual maintenance
    b. December 2021 Planned Outage
        i. Semi-annual maintenance

Status report regarding condition of Structures and Buildings

The photographs below shows the surface treatment of project structures and buildings. All buildings comply with condition VIS-4.

Warehouse Building (02/03/21)

Administrative Building (02/03/21)

Main Electrical Enclosure Building (02/03/21)

Substation Building (02/03/21)

Chiller Building (02/03/21)

RO Skid Structure (02/03/21)

Balance of Plant Building (02/03/21)

LM 6000 Turbines (02/03/21)

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 15

LANDSCAPE SCREENING

VIS-5: Landscape Screening

Condition of Certification VIS-5 requires a status report in the Annual Compliance Report regarding landscape maintenance activities. At the Canyon Power Plant the landscape maintenance activities were performed according to the contract and consistent with policies and requirements of the City of Anaheim plan and zoning ordinance.

The contracted company performed the following landscape maintenance activities:

Contracted Landscape Services – Landscape West Mgmt. Service, Inc. (Period: Jan 1, through December 31, 2020).

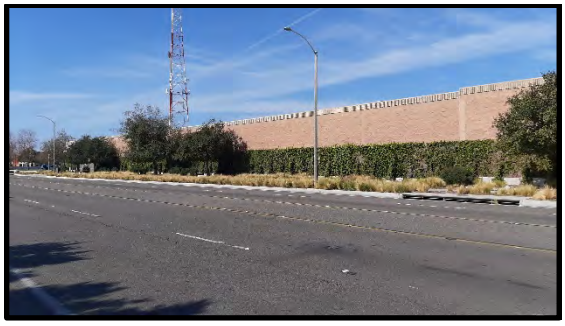
Activity Type	Frequency
Weed Control	2x/wk.
Landscape areas	
Hardscape areas	
Gravel areas	1x/Mo
Fertilization	2x/year
Shrubs	
Ground cover	
Trees	
Pest Control	As needed
Rodents	
Irrigation Maintenance	As needed
Inspect all Sprinklers/Systems	
Trees	As needed
Canopy Trees	
Maintenance/Clean-Up	2x/wk.
Ground Cover and Shrubs	
Trash & Litter at Landscape area	
Trash & Litter at enclosed gravel areas	
Monthly Inspection	

The photographs below taken by staff on 2/02/2021 of the landscape maintenance demonstrating compliance pursuant VIS-5 condition:

Landscaping - Exterior Plants

Miraloma Avenue, south wall

Miraloma Avenue, south wall

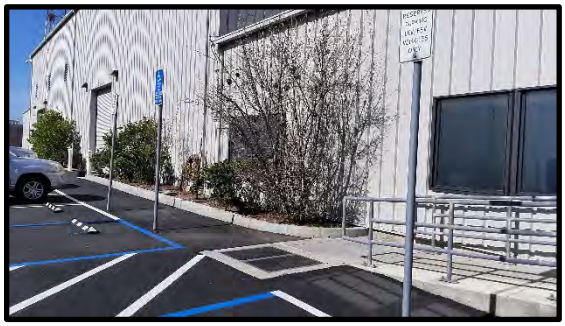


Miraloma Avenue, south wall

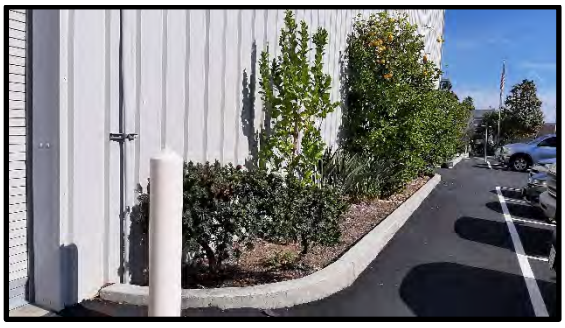
East-wall ivy

Landscaping - Interior Plant

Administration Building Planter



Admin and Warehouse Building Planter



Warehouse Building Planter

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 16

AQ-9
NH3 SLIP TESTING

TEST REPORT FOR
3Q20 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 1
FACILITY ID: 153992, DEVICE ID: D1

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Avenue
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 282-8240

Sean Donovan

Test Date: **July 21, 2020**
Production Date: **August 18, 2020**
Report Number: **W002AS-682102-RT-1480**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.

REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 8/18/2020

Name: Sean Donovan Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 8/18/2020

Name: Mike Chowsanitphon Title: Reporting Manager

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 1 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on July 21, 2020. The test was performed by Sean Donovan, Danny Avila, Rik Dupont, and Robert Howard of MAQS. Sean Donovan was the on-site Qualified Individual for MAQS. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 49 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS SUMMARY
CANYON POWER PLANT UNIT 1
JULY 21, 2020

Parameter/Units	Result(1)	Limit
NH_3		
ppm	1.6	--
ppmc	1.5	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1

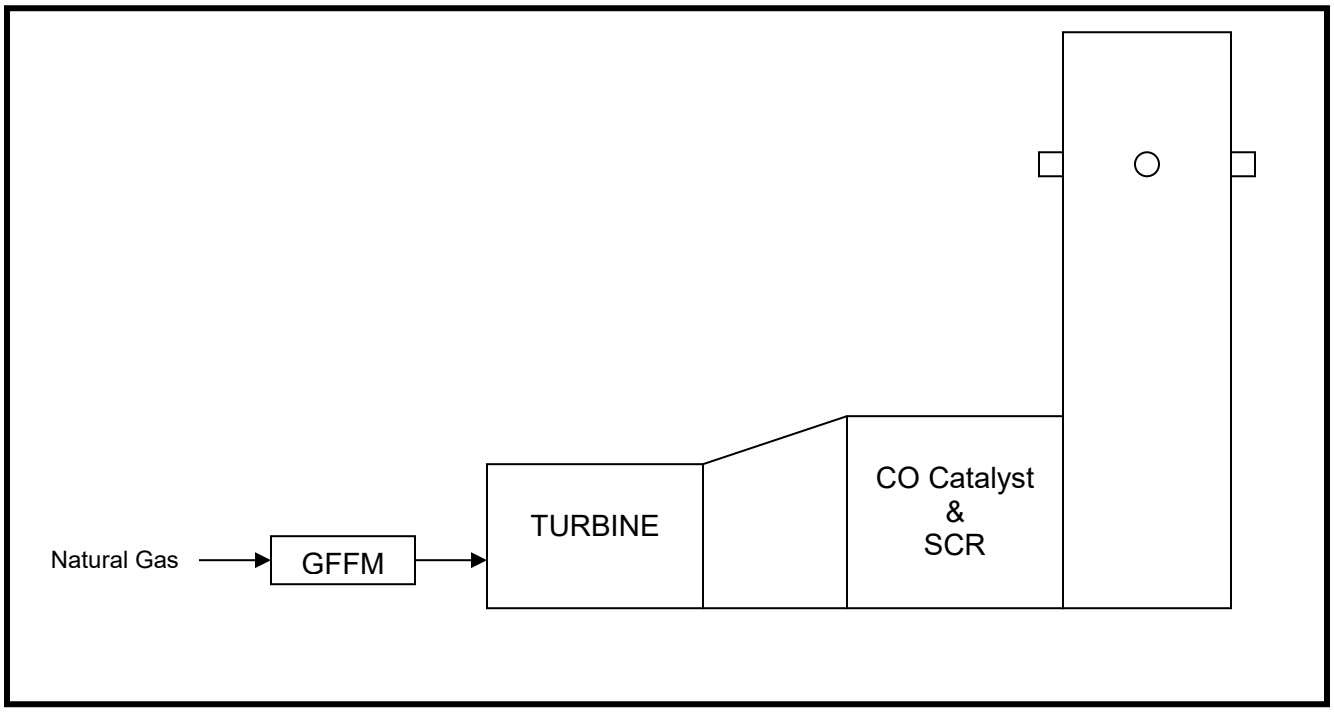
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT AND CEMS DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 49 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

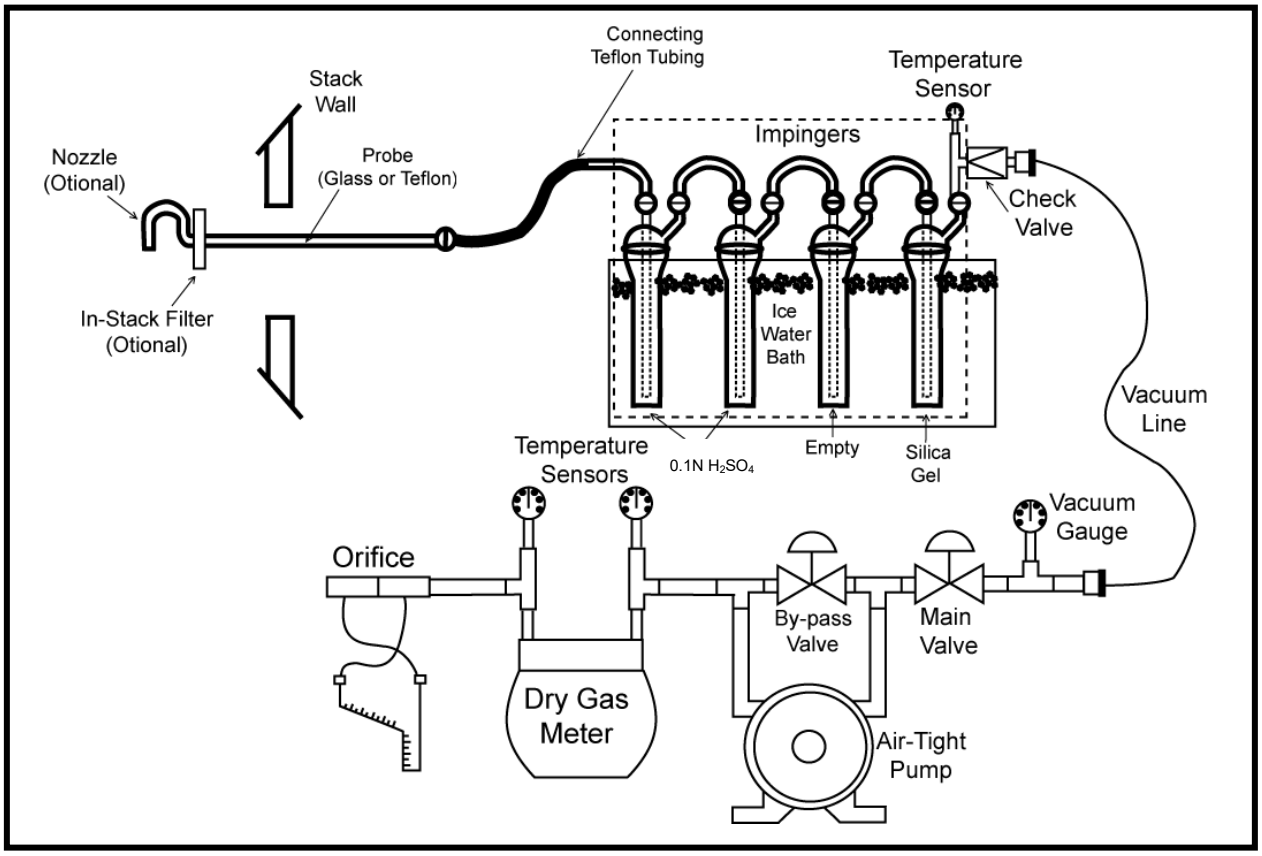
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a glass probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sampling equipment.

Stack O_2 and NO_x concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLE EQUIPMENT



4.0 TEST RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the ammonia slip was 1.5 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT UNIT 1
JULY 21, 2020

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U1	2-NH_3-U1			--
Date	7/21/2020	7/21/2020			--
Time	2041/2144	2205/2308			--
O_2, %(2)	14.45	14.47	14.46	--	--
Stack Flow, dscfm @ T_{ref}(2)	233,902	234,000	233,951	--	--
NO_x, ppmc(2)	2.2	2.2	2.2	--	2.5
NH_3					
ppm	1.6	1.5	1.5	1.6	--
ppmc	1.5	1.4	1.4	1.5	5
lb/hr	1.0	0.9	1.0	1.0	--
lb/MMBtu	0.002	0.002	0.002	0.002	--
lb/MMSCF	2.1	1.9	2	2.1	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

4.2 TEST OVERVIEW

The test program was successful in meeting the program objectives. The sample train was leak checked before and after the test and all QA/QC requirements of SCAQMD Method 207.1 were satisfied.

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: City of Anaheim
LOCATION: Canyon 1
DATE: 7/21/20
RUN NO: FB-NH3-01
OPERATOR: RH
METER BOX NO: 35-WCS
METER Yd: .986

CEMS Heated Line Temp: NA
CEMS Knock Out Temp: NA
CHECK WEIGHT: 499.8/560.6

AMBIENT TEMPERATURE: 70°
BAROMETRIC PRESSURE: 29.58
ASSUMED MOISTURE : NA
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 8
PRE-TEST LEAK RATE : <0.005 CFM@ 18 in. Hg
POST-TEST LEAK RATE : ____ CFM@ ____ in. Hg

PITOT LEAK CHECK - PRE: NA POST: NA

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	789.3	689.5	
2	H_2SO_4	609.4	609.4	
3	MT	632.1	632.2	
4	SG	936.7	936.7	
Total:	LR	Ø	100	

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	Pstatic in. H_2O
Average:												

FIELD BLANK NH3

Comments: _____

MONTROSE AIR QUALITY SERVICES

Date of last revision 2/14/2017

D834055
Master Document Storage\Forms\Datasheets\Field Datasheets

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: City of Anaheim
LOCATION: Canyon 1
DATE: 7/21/20
RUN NO: 1-NH3-1
OPERATOR: RH
METER BOX NO: 38-WCS
METER ΔH@: 1.730 Qi = 0.572
METER Yd: 0.980
STACK AREA, FT²: 106.90
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= NA X ΔP:
Probe Condition, pre/post test: ✓/✓
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 499.8/500.0

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 29.54
ASSUMED MOISTURE: ~12%
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / T1
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : <0.005 CFM@ 14 in. Hg.
POST-TEST LEAK RATE: : <0.005 CFM@ 14 in. Hg.
PITOT LEAK CHECK - PRE: NA POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER RH
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	916.8	702.1	
2	H_2SO_4	610.6	606.6	
3	MT	630.6	629.9	
4	SG	956.0	943.0	
LR		Ø	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	2041	623.100	NA	2.0	NA	NA	NA	56	74	72	6		NA
2	2046	—						—	—	—	—		
1	2051	—						—	—	—	—		
PL	2056	635.276						—	—	—	—		
—	—	—						—	—	—	—	—	
3	2057	635.276						52	75	72	6		
2	2102	—						—	—	—	—		
1	2107	—						—	—	—	—		
PL	2112	647.433						—	—	—	—		
—	—	—						—	—	—	—		
3	2113	647.433						53	77	73	6		
2	2118	—						—	—	—	—		
1	2123	—						—	—	—	—		
PL	2128	659.545						—	—	—	—		
—	—	—						—	—	—	—		
3	2129	659.545						54	76	73	6		
2	2134	—						—	—	—	—		
1	2139	—						—	—	—	—		
END	2144	672.090						—	—	—	—		
Average:													

Comments:

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: City of Anaheim
LOCATION: Canyon 1
DATE: 7/21/20
RUN NO: 2 of 3
OPERATOR: RH
METER BOX NO: 38-WCS
METER ΔH@: 1.720 @1=0.572
METER Yd: 0.986
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= NA X ΔP:
Probe Condition, pre/post test: ✓/✓
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 499.8/5000.0

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 29.58
ASSUMED MOISTURE: 11.5
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: T-7
PROBE LENGTH: 8'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: NA
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : <0.005 CFM@ 18 in. Hg.
POST-TEST LEAK RATE: : 0.005 CFM@ 19 in. Hg.
PITOT LEAK CHECK - PRE: NA POST: NA
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JB
SAMPLER RH
SAMPLE CUSTODIAN JB

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	845.7	675.4	
2	H_2SO_4	731.8	685.4	
3	MT	630.5	628.5	
4	SG	999.2	927.1	
CP		Ø	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
3	2005	673.400	NA	2.0	NA	NA	NA	56	74	72	7		NA
2	2010	—						—	—	—	—		
1	2015	—						—	—	—	—		
PC	2020	685.357						—	—	—	—		
—	—	—						—	—	—	—		
3	2021	685.357						53	75	73	7		
2	2026	—						—	—	—	—		
1	2031	—						—	—	—	—		
PC	2036	697.416						—	—	—	—		
—	—	—						—	—	—	—		
3	2037	697.416						52	75	73	7		
2	2042	—						—	—	—	—		
1	2047	—						—	—	—	—		
PC	2052	709.484						—	—	—	—		
—	—	—						—	—	—	—		
3	2053	709.484						53	75	72	7		
2	2058	—						—	—	—	—		
1	2103	—						—	—	—	—		
END	2108	~~721.481~~ 721.481 RH 7-21-2020						—	—	—	—		
Average:													(✓)

Comments:

Appendix A.2
Laboratory Data

MONTROSE AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: W02AS-682102 District Method: SCAQMD 207.1 Sample Date: 7/21/2020

Client/Location: SCPPA - Canyon Power Calibration Date: 7/27/2020 Analysis Date: 7/27/2020

Sample Location: Stack U1 Calibration Curve: y = -54.2597x + 79.3597 Analyst's Initials: LM

Test #'s: 1-2-NH3 R^2: 0.9999 Room Temperature (°C): 22.0

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml	—	1.6	27.108	27.166	—	22.6	Y	—	-2.979
		1.5	27.224			22.6	Y		
1-NH_3	580.3	61.5	2.134	2.152	1518.040	22.5	Y	<2	—
		61.1	2.170			22.5	Y		
2-NH_3	614.1	65.0	1.839	1.855	1384.730	22.5	Y	<2	—
		64.6	1.871			22.5	Y		
Spike: 1-NH_3 +2ml 1000ppm NH_3	—	8.5	20.227	20.313	—	22.5	Y	—	94.65
		8.3	20.400			22.5	Y		
Standard Check: 28 µg NH3/ml	—	0.9	27.926	27.985	—	22.6	Y	—	-0.054
		0.8	28.044			22.6	Y		
Reagent Blank 0.1N H_2SO_4	—	141.6	0.071	0.071	—	23.3	Y	—	—
		141.6	0.071			23.3	Y		
DI H_2O Blank	—	144.4	0.063	0.063	—	23.3	Y	—	—
		144.5	0.063			23.3	Y		
Field Blank	435.1	119.4	0.183	0.181	95.685	22.5	Y	<2	—
		119.9	0.179			22.5	Y		
Standard Check: 28 µg NH3/ml	—	1.3	27.456	27.750	—	22.6	Y	—	-0.893
		0.8	28.044			22.6	Y		

Notes: Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)
Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2
µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV
mg / sample = µg /sample ÷ 1000
ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Project Number:	002AS-682102
Client/ Location:	SCPPA-Canyon Power Plant
Sample Location:	Stack U1
District Method:	SCAQMD 207.1
Sample Date:	7/21/2020
Analysis Date:	7/27/2020
Analyst's Initials:	LM
Calibration Curve Slope	-54.2597
Y-intercept	79.3597
R^2	0.9999

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	1.6	27.108				
Repeat 28 ug NH_3/ml as N	1.5	27.224	27.166	NA	33.022	NA
1-NH_3	61.5	2.134				
Repeat 1- NH_3	61.1	2.170	2.152	580.3	2.616	1518.040
2-NH3	65.0	1.839				
Repeat 2- NH3	64.6	1.871	1.855	614.1	2.255	1384.730
spike 1-NH_3	8.5	20.227				
Repeat 1-NH3 spike	8.3	20.400	20.313	NA	24.692	NA
28 NH_3/ml as N	0.9	27.926				
Repeat 28 ug NH_3/ml as N	0.8	28.044	27.985	NA	34.017	NA
Reagent Blank	141.6	0.071				
Repeat Reagent Blank	141.6	0.071	0.071	NA	0.087	NA
Field Blank	119.4	0.183				
Repeat Field Blank	119.9	0.179	0.181	435.1	0.220	95.685
DI H2O Blank	144.4	0.063				
Repeat DI H2O Blank	144.5	0.063	0.063	NA	0.077	NA
28 NH_3/ml as N	1.3	27.456				
Repeat 28 ug NH_3/ml as N	0.8	28.044	27.750	NA	33.732	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Project Number: 002AS-682102
Client/ Location: SCPPA-Canyon Power Plant
Sample Location: Stack U1
District Method: SCAQMD 207.1
Sample Date: 7/21/2020
Analysis Date: 7/27/2020
Analyst's Initials: LM

Sample	% recovery	RPD %	RPA %
28 ug NH3 / ml as N epeat 28 ug NH3/ml as	NA	-0.42	-2.979
1-NH3 Repeat 1- NH3	NA	-1.70	NA
2-NH3 Repeat 2- NH3	NA	-1.70	NA
spike 1-NH3 Repeat 1-NH3 spike	94.65	-0.85	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	-0.42	-0.054
Reagent Blank Repeat Reagent Blank	NA	0.00	NA
Field Blank Repeat Field Blank	NA	2.12	NA
DI H2O Blank Repeat DI H2O Blank	NA	0.42	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	-2.12	-0.893

Notes:

spike: 100 ml sample + 2 ml (1000 μg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (μg NH_3/ ml as N)

Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

MONTROSE
AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 7/27/2020

Calibration Curve: y = -54.2597x + 79.3597

R^2 0.9999

Analyst's Initials: LM

Thermometer #: 1

ISE Electrode #: B

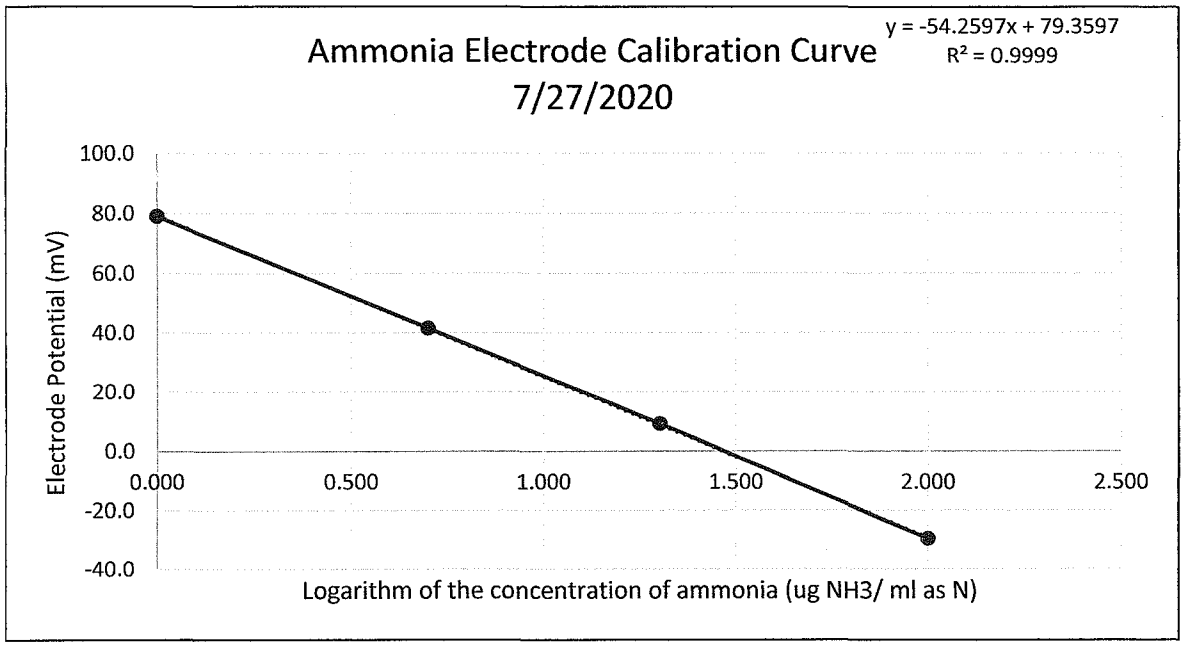
Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	79.1	22.6	22.0
5	41.6	22.6	22.0
20	9.2	22.6	22.0
100	-29.5	22.6	22.0

Notes:

Total volume of samples and standards used: 100ml
Volume of pH adjusting ISA used in ml: 2ml
Absorbing solution: 0.04 N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	79.1	22.6	22
5	0.699	41.6	22.6	22
20	1.301	9.2	22.6	22
100	2.000	-29.5	22.6	22



slope	-54.2597
y-intercept	79.3597

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	1.0111	0.0111	1.1083
5	4.9649	-0.0351	-0.7028
20	19.6352	-0.3648	-1.8241
100	101.4545	1.4545	1.4545

Calculation:

Regression Line: $P=M*\log(\mu g \text{ of } NH_3/ \text{ ml as N})+B$

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

CHAIN OF CUSTODY

CLIENT: SCPPA - Canyon Power Plant PROJECT #: W002AS-682102 TEST DATE(S): 7/21/2020

LOCATION: U1 SAMPLER(S): RH/DA/RD

SAMPLE LOCATION: Stack PROJECT MANAGER: SD

TEST METHOD(S): SCAQMD 207.1 DATE DUE: 7/28/2020

OUTSIDE LAB REQUIRED?: No COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
7/21/2020	2041/2144	1-NH3-U1	Probe, Line, Impingers	1	RH/DA/RD	
7/21/2020	2205/2308	2-NH3-U1	Probe, Line, Impingers	1	RH/DA/RD	
7/21/2020		Reagent Blank	0.1 N H_2SO_4	1	SD	
7/21/2020		Reagent Blank	DI H2O	1	SD	
7/21/2020		FB-NH3-U1	Probe, Line, Impingers	1	RH/DA/RD	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
R Howard/LAB	7-24-2020/ 2243		7/27/20 0838

ANALYSIS REQUIRED: NH_3 by SCAQMD 207.1 (ISE)

Appendix A.3
QA/QC Data

SCAQMD METHOD 207.1 - AMMONIA
DETERMINATION OF SAMPLE TIME

Source: Canyon U1
Date: 7/21/2020
Performed by: SD

Constants:

	1,000	mg/gram
	454	grams/lb
	35.315	SCF/SCM
	379.5	SCF/lb-mole
	1,000,000	parts/million parts
MW_{NH3}	17.03	lb/lb-mole
MW_{N2}	14.01	lb/lb-mole

Variables:

Target concentration	5	ppm @ O_2 correction factor
O_2 correction factor	15	% O_2
Expected Flue Gas O_2	14.5	% O_2
F	2	Safety Factor
P	128.5	electrode potential corresponding to minimum value on calibration curve (mV)
B	128.83	y-intercept
M	-58.676	slope
V_r	0.5	Assumed liquid volume of probe rinse and first impinger (L)
Q @ dH = 1	0.55	cfm

Calculated Values:

Target concentration	5.4	ppm - raw
Target concentration	3.90	mg/dscm
C_1	1.013	Lowest concentration on a calibration curve (mg NH3-N/L)
RL	0.616	analytical mass reporting limit, mg
PSV	0.316	Planned sample volume, cubic meters
PSV	11.144	Planned sample volume, cubic feet
VSR	33.0	achievable volumetric sampling rate (dscf/hr)
PST	**20.3**	**Planned sample time, minutes (minimum)**

Notes:
1) A minimum of 1 hour sample time is required for any mass per hour limits.
2) Facility Permit or Rule may specify sample time

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\38-wcs\2020\[semi annual cal 38wcs 2-27-20.xlsx]W(
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: c-5000
Date: 38-wcs
Bar. Pressure: 2/27/2020
Performed By: 30.17 (in. Hg)
Meter Serial #: R. Howard

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	463.700	469.149	5.449	69.0	66.0	71.0	68.0	33	0.1551	18.0	64.0	64.0	64.0
0.13	26.00	469.149	474.592	5.443	71.0	68.0	72.0	69.0	33	0.1551	18.0	64.0	64.0	64.0
0.13	26.00	474.592	480.032	5.440	72.0	69.0	72.0	70.0	33	0.1551	18.0	64.0	64.0	64.0
0.59	12.00	447.400	452.664	5.264	66.0	65.0	66.0	64.0	48	0.3345	16.0	62.0	62.0	62.0
0.59	12.00	452.664	457.895	5.231	66.0	64.0	68.0	65.0	48	0.3345	16.0	62.0	62.0	62.0
0.59	12.00	457.895	463.127	5.232	68.0	65.0	69.0	65.0	48	0.3345	16.0	62.0	62.0	62.0
1.80	7.00	482.500	488.027	5.527	72.0	70.0	73.0	70.0	63	0.5915	14.0	65.0	65.0	65.0
1.80	7.00	488.027	493.551	5.524	73.0	70.0	74.0	70.0	63	0.5915	14.0	65.0	65.0	65.0
1.80	7.00	493.551	499.086	5.535	74.0	70.0	74.0	71.0	63	0.5915	14.0	65.0	65.0	65.0
3.10	5.00	499.900	504.949	5.049	75.0	71.0	76.0	72.0	73	0.7678	11.0	66.0	66.0	66.0
3.10	5.00	504.949	509.993	5.044	76.0	72.0	76.0	71.0	73	0.7678	11.0	66.0	66.0	66.0
3.10	5.00	509.993	515.044	5.051	76.0	71.0	76.0	71.0	73	0.7678	11.0	66.0	66.0	66.0

)RY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR				
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	Individual Run 0.95 < Y < 1.05?	Individual Orifice Ymax - Ymin < 0.010?	Orifice Average 0.98 < Y/Yd < 1.02?	Orifice Average dH@ - dH@ av < 0.155?
5.489	155.4	5.315	150.5	5.233	0.968	1.768	**Pass**			
5.467	154.8	5.315	150.5	5.233	0.972	1.763	**Pass**			
5.457	154.5	5.315	150.5	5.233	0.974	1.759	**Pass**			
				Average	**0.971**	**1.763**		**Pass**	**Pass**	**Pass**
5.341	151.3	5.300	150.1	5.198	0.992	1.727	**Pass**			
5.303	150.2	5.300	150.1	5.198	0.999	1.727	**Pass**			
5.294	149.9	5.300	150.1	5.198	1.001	1.725	**Pass**			
				Average	**0.998**	**1.726**		**Pass**	**Pass**	**Pass**
5.561	157.5	5.452	154.4	5.379	0.980	1.676	**Pass**			
5.553	157.3	5.452	154.4	5.379	0.982	1.676	**Pass**			
5.559	157.4	5.452	154.4	5.379	0.981	1.675	**Pass**			
				Average	**0.981**	**1.676**		**Pass**	**Pass**	**Pass**
5.075	143.7	5.050	143.0	4.992	0.995	1.712	**Pass**			
5.067	143.5	5.050	143.0	4.992	0.997	1.712	**Pass**			
5.077	143.8	5.050	143.0	4.992	0.995	1.714	**Pass**			
				Average	**0.996**	**1.713**		**Pass**	**Pass**	**Pass**

Average Yd: **0.986** **dH@:** **1.720**

Q @ dH = 1: **0.572**

SIGNED: Signature on File Date: 2/27/2020

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 38-wcs
Readout Description: Control Box
Date: 7/2/2020
Performed By: JG/DH/LO/DA

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 492956
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D. **TC-CAL**	Readout I.D.	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	Reference Thermometer °F Reading 1	Reading 2	Reading 3	Average	Difference °F	Difference %, (°R)	
T3 (OIL)	38-wcs	349	349	349	349	350	350	350	350	1.0	0.1%	Pass
T2 (Boiling H_2O)	38-wcs	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	38-wcs	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F Reading 1	Reading 2	Reading 3	Average	T/C Source °F Reading 1	Reading 2	Reading 3	Average	Difference °F	Difference %, (°R)	
T4 (~650 F)	S/N 106970	651	651	651	651	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	S/N 106970	368	368	368	368	365	365	365	365	3.0	0.4%	Pass
T2 (~212 F)	S/N 106970	213	212	213	213	212	212	212	212	0.7	0.1%	Pass
T1 (~32 F)	S/N 106970	35	35	35	35	32	32	32	32	3.0	0.6%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

APPENDIX B
FACILITY CEMS DATA

CEMTEK KVB-Enertec NetDAHS©

1-NH3-U1

Version 47.0

Average Values Report
Generated: 7/21/2020 22:05

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 1

Period Start: 7/21/2020 20:42
Period End: 7/21/2020 21:44
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/21/2020 20:42	14.45	2.49	2.28	4.05	0.008	481.7	49.55	237.9	3.52	3.22	3.64
07/21/2020 20:43	14.45	2.48	2.27	4.05	0.008	481.6	49.46	237.9	3.52	3.22	3.64
07/21/2020 20:44	14.45	2.48	2.27	4.04	0.008	481.3	49.47	237.7	3.51	3.21	3.64
07/21/2020 20:45	14.45	2.47	2.26	4.05	0.008	481.6	49.48	237.9	3.50	3.20	3.64
07/21/2020 20:46	14.45	2.47	2.26	4.04	0.008	481.4	49.49	237.8	3.51	3.21	3.64
07/21/2020 20:47	14.45	2.47	2.26	4.04	0.008	481.3	49.45	237.7	3.53	3.23	3.64
07/21/2020 20:48	14.45	2.47	2.26	4.04	0.008	480.7	49.39	237.4	3.51	3.21	3.63
07/21/2020 20:49	14.45	2.46	2.25	4.04	0.008	481.2	49.44	237.7	3.50	3.20	3.64
07/21/2020 20:50	14.45	2.46	2.25	4.05	0.008	481.7	49.56	237.9	3.47	3.17	3.59
07/21/2020 20:51	14.45	2.47	2.26	4.04	0.008	481.2	49.48	237.7	3.50	3.20	3.64
07/21/2020 20:52	14.45	2.47	2.26	4.04	0.008	481.3	49.45	237.7	3.51	3.21	3.64
07/21/2020 20:53	14.45	2.47	2.26	4.04	0.008	481.4	49.47	237.8	3.50	3.20	3.64
07/21/2020 20:54	14.45	2.47	2.26	4.04	0.008	481.1	49.42	237.6	3.48	3.18	3.59
07/21/2020 20:55	14.45	2.48	2.27	4.05	0.008	481.6	49.50	237.9	3.47	3.17	3.59
07/21/2020 20:56	14.45	2.49	2.28	4.05	0.008	481.8	49.54	238.0	3.46	3.16	3.59
07/21/2020 20:57	14.45	2.50	2.29	4.03	0.008	480.2	49.32	237.2	3.47	3.17	3.58
07/21/2020 20:58	14.45	2.49	2.28	4.04	0.008	481.4	49.47	237.8	3.47	3.17	3.59
07/21/2020 20:59	14.45	2.48	2.27	4.03	0.008	479.4	49.20	236.8	3.47	3.17	3.57
07/21/2020 21:00	14.45	2.47	2.26	4.03	0.008	479.8	49.24	237.0	3.45	3.16	3.58
07/21/2020 21:01	14.45	2.46	2.25	4.04	0.008	480.5	49.37	237.3	3.44	3.15	3.58
07/21/2020 21:02	14.45	2.46	2.25	4.04	0.008	480.4	49.30	237.3	3.40	3.11	3.53
07/21/2020 21:03	14.45	2.47	2.26	4.03	0.008	479.4	49.23	236.8	3.38	3.09	3.47
07/21/2020 21:04	14.45	2.48	2.27	4.03	0.008	480.2	49.30	237.2	3.39	3.10	3.53
07/21/2020 21:05	14.44	2.46	2.25	4.04	0.008	480.7	49.37	237.0	3.43	3.13	3.53
07/21/2020 21:06	14.45	2.47	2.26	4.02	0.008	479.0	49.12	236.6	3.45	3.16	3.57
07/21/2020 21:07	14.45	2.49	2.28	4.01	0.008	477.7	48.91	235.9	3.44	3.15	3.56
07/21/2020 21:08	14.45	2.44	2.23	4.03	0.008	479.8	49.23	237.0	3.39	3.10	3.53
07/21/2020 21:09	14.44	2.39	2.18	4.02	0.008	478.6	49.03	236.0	3.38	3.09	3.47
07/21/2020 21:10	14.45	2.40	2.20	4.02	0.008	478.6	49.11	236.4	3.41	3.12	3.52
07/21/2020 21:11	14.45	2.39	2.19	4.04	0.008	480.5	49.31	237.3	3.43	3.14	3.53
07/21/2020 21:12	14.45	2.39	2.19	4.04	0.008	480.9	49.39	237.5	3.45	3.16	3.58
07/21/2020 21:13	14.44	2.43	2.22	4.04	0.008	481.0	49.36	237.2	3.50	3.20	3.64
07/21/2020 21:14	14.44	2.44	2.23	4.04	0.008	481.4	49.45	237.4	3.50	3.20	3.64
07/21/2020 21:15	14.44	2.43	2.22	4.05	0.008	481.6	49.43	237.5	3.52	3.21	3.64
07/21/2020 21:16	14.44	2.43	2.22	4.04	0.008	481.3	49.41	237.4	3.54	3.23	3.69
07/21/2020 21:17	14.44	2.43	2.22	4.05	0.008	481.8	49.43	237.6	3.58	3.27	3.69
07/21/2020 21:18	14.44	2.42	2.21	4.04	0.008	481.5	49.43	237.5	3.58	3.27	3.69
07/21/2020 21:19	14.44	2.42	2.21	4.05	0.008	481.9	49.43	237.6	3.59	3.28	3.74
07/21/2020 21:20	14.44	2.42	2.21	4.05	0.008	481.6	49.43	237.5	3.58	3.27	3.69
07/21/2020 21:21	14.44	2.42	2.21	4.05	0.008	481.7	49.42	237.6	3.56	3.25	3.69
07/21/2020 21:22	14.45	2.42	2.21	4.04	0.008	481.3	49.39	237.7	3.57	3.27	3.69
07/21/2020 21:23	14.44	2.41	2.20	4.04	0.008	481.4	49.41	237.4	3.62	3.31	3.74
07/21/2020 21:24	14.45	2.40	2.20	4.04	0.008	481.3	49.42	237.7	3.61	3.30	3.74
07/21/2020 21:25	14.45	2.40	2.20	4.04	0.008	481.5	49.41	237.8	3.61	3.30	3.74
07/21/2020 21:26	14.45	2.40	2.20	4.04	0.008	481.3	49.39	237.7	3.63	3.32	3.74
07/21/2020 21:27	14.45	2.40	2.20	4.04	0.008	481.2	49.37	237.7	3.67	3.36	3.79
07/21/2020 21:28	14.45	2.40	2.20	4.05	0.008	481.6	49.41	237.9	3.66	3.35	3.79
07/21/2020 21:29	14.45	2.41	2.20	4.04	0.008	481.4	49.41	237.8	3.64	3.33	3.79
07/21/2020 21:30	14.45	2.41	2.20	4.04	0.008	481.1	49.36	237.6	3.62	3.31	3.74

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/21/2020 21:31	14.45	2.42	2.21	4.04	0.008	481.4	49.36	237.8	3.60	3.29	3.74
07/21/2020 21:32	14.45	2.41	2.20	4.04	0.008	481.3	49.36	237.7	3.60	3.29	3.74
07/21/2020 21:33	14.45	2.40	2.20	4.04	0.008	481.1	49.37	237.6	3.60	3.29	3.74
07/21/2020 21:34	14.45	2.41	2.20	4.04	0.008	481.1	49.35	237.6	3.57	3.27	3.69
07/21/2020 21:35	14.45	2.42	2.21	4.04	0.008	481.2	49.37	237.7	3.54	3.24	3.69
07/21/2020 21:36	14.45	2.42	2.21	4.04	0.008	481.3	49.39	237.7	3.54	3.24	3.69
07/21/2020 21:37	14.45	2.42	2.21	4.04	0.008	481.1	49.38	237.6	3.55	3.25	3.69
07/21/2020 21:38	14.45	2.41	2.20	4.04	0.008	481.1	49.38	237.6	3.54	3.24	3.69
07/21/2020 21:39	14.45	2.42	2.21	4.04	0.008	481.4	49.40	237.8	3.54	3.24	3.69
07/21/2020 21:40	14.45	2.44	2.23	4.04	0.008	481.2	49.40	237.7	3.57	3.27	3.69
07/21/2020 21:41	14.45	2.45	2.24	4.04	0.008	480.9	49.40	237.5	3.61	3.30	3.74
07/21/2020 21:42	14.45	2.44	2.23	4.04	0.008	481.3	49.39	237.7	3.59	3.28	3.74
07/21/2020 21:43	14.45	2.45	2.24	4.04	0.008	481.3	49.41	237.7	3.56	3.26	3.69
07/21/2020 21:44	14.45	2.44	2.23	4.04	0.008	481.2	49.40	237.7	3.54	3.24	3.69
Daily Average*	**14.45**	**2.44**	**2.23**	**4.04**	**0.008**	**481.0**	**49.38**	**237.5**	**3.52**	**3.22**	**3.65**
Maximum*	**14.45**	**2.50**	**2.29**	**4.05**	**0.008**	**481.9**	**49.56**	**238.0**	**3.67**	**3.36**	**3.79**
	07/21/2020 21:44	07/21/2020 20:57	07/21/2020 20:57	07/21/2020 21:28	07/21/2020 21:44	07/21/2020 21:19	07/21/2020 20:50	07/21/2020 20:56	07/21/2020 21:27	07/21/2020 21:27	07/21/2020 21:29
Minimum*	**14.44**	**2.39**	**2.18**	**4.01**	**0.008**	**477.7**	**48.91**	**235.9**	**3.38**	**3.09**	**3.47**
	07/21/2020 21:23	07/21/2020 21:12	07/21/2020 21:09	07/21/2020 21:07	07/21/2020 21:44	07/21/2020 21:07	07/21/2020 21:07	07/21/2020 21:07	07/21/2020 21:09	07/21/2020 21:09	07/21/2020 21:09

* Does not include Invalid Averaging Periods ("N/A")

CEMTEK KVB-Enertec NetDAHS©

~~2-NH3-U2~~

2-NH3-U1

Version 47.0

Average Values Report
Generated: 7/21/2020 23:19

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 1

Period Start: 7/21/2020 22:06
Period End: 7/21/2020 23:08
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/21/2020 22:06	14.45	2.36	2.16	4.05	0.008	481.9	49.40	238.0	3.70	3.38	3.85
07/21/2020 22:07	14.45	2.36	2.16	4.05	0.008	482.1	49.40	238.1	3.71	3.39	3.85
07/21/2020 22:08	14.45	2.36	2.16	4.05	0.008	482.1	49.44	238.1	3.72	3.40	3.85
07/21/2020 22:09	14.45	2.37	2.17	4.05	0.008	482.1	49.42	238.1	3.70	3.38	3.85
07/21/2020 22:10	14.45	2.38	2.18	4.05	0.008	482.0	49.42	238.1	3.70	3.38	3.85
07/21/2020 22:11	14.44	2.39	2.18	4.05	0.008	481.7	49.42	237.6	3.69	3.37	3.84
07/21/2020 22:12	14.45	2.39	2.19	4.05	0.008	481.7	49.40	237.9	3.65	3.34	3.79
07/21/2020 22:13	14.45	2.40	2.20	4.05	0.008	481.9	49.44	238.0	3.61	3.30	3.74
07/21/2020 22:14	14.45	2.41	2.20	4.04	0.008	481.5	49.39	237.8	3.57	3.27	3.69
07/21/2020 22:15	14.45	2.40	2.20	4.05	0.008	481.9	49.44	238.0	3.61	3.30	3.74
07/21/2020 22:16	14.45	2.40	2.20	4.05	0.008	482.0	49.43	238.1	3.64	3.33	3.80
07/21/2020 22:17	14.45	2.40	2.20	4.05	0.008	481.8	49.40	238.0	3.65	3.34	3.79
07/21/2020 22:18	14.45	2.40	2.20	4.05	0.008	481.9	49.38	238.0	3.62	3.31	3.74
07/21/2020 22:19	14.45	2.40	2.20	4.05	0.008	481.9	49.40	238.0	3.61	3.30	3.74
07/21/2020 22:20	14.45	2.38	2.18	4.05	0.008	481.7	49.40	237.9	3.63	3.32	3.74
07/21/2020 22:21	14.45	2.38	2.18	4.05	0.008	482.0	49.40	238.1	3.65	3.34	3.80
07/21/2020 22:22	14.45	2.39	2.19	4.04	0.008	481.4	49.40	237.8	3.66	3.35	3.79
07/21/2020 22:23	14.45	2.39	2.19	4.05	0.008	481.9	49.42	238.0	3.64	3.33	3.80
07/21/2020 22:24	14.45	2.40	2.20	4.04	0.008	481.5	49.39	237.8	3.64	3.33	3.79
07/21/2020 22:25	14.45	2.40	2.20	4.04	0.008	481.4	49.40	237.8	3.64	3.33	3.79
07/21/2020 22:26	14.45	2.41	2.20	4.05	0.008	481.8	49.41	238.0	3.63	3.32	3.74
07/21/2020 22:27	14.45	2.41	2.20	4.04	0.008	481.5	49.38	237.8	3.62	3.31	3.74
07/21/2020 22:28	14.45	2.41	2.20	4.04	0.008	481.5	49.40	237.8	3.62	3.31	3.74
07/21/2020 22:29	14.45	2.40	2.20	4.05	0.008	482.0	49.39	238.1	3.64	3.33	3.80
07/21/2020 22:30	14.45	2.40	2.20	4.05	0.008	481.8	49.42	238.0	3.65	3.34	3.79
07/21/2020 22:31	14.45	2.40	2.20	4.05	0.008	482.2	49.43	238.2	3.66	3.35	3.80
07/21/2020 22:32	14.45	2.41	2.20	4.05	0.008	482.2	49.43	238.2	3.64	3.33	3.80
07/21/2020 22:33	14.45	2.42	2.21	4.05	0.008	481.8	49.40	238.0	3.65	3.34	3.79
07/21/2020 22:34	14.45	2.42	2.21	4.05	0.008	482.0	49.41	238.1	3.64	3.33	3.80
07/21/2020 22:35	14.45	2.40	2.20	4.05	0.008	482.0	49.41	238.1	3.66	3.35	3.80
07/21/2020 22:36	14.45	2.40	2.20	4.05	0.008	481.8	49.43	238.0	3.69	3.38	3.84
07/21/2020 22:37	14.45	2.40	2.20	4.05	0.008	482.2	49.40	238.2	3.71	3.39	3.85
07/21/2020 22:38	14.45	2.40	2.20	4.05	0.008	482.0	49.39	238.1	3.68	3.37	3.85
07/21/2020 22:39	14.45	2.40	2.20	4.05	0.008	482.2	49.40	238.2	3.67	3.36	3.80
07/21/2020 22:40	14.45	2.40	2.20	4.05	0.008	482.0	49.40	238.1	3.65	3.34	3.80
07/21/2020 22:41	14.45	2.40	2.20	4.05	0.008	481.8	49.35	238.0	3.64	3.33	3.79
07/21/2020 22:42	14.49	2.41	2.22	4.00	0.008	475.8	48.62	236.5	3.63	3.34	3.75
07/21/2020 22:43	14.50	2.34	2.16	4.00	0.008	476.8	48.74	237.3	3.79	3.49	3.90
07/21/2020 22:44	14.49	2.20	2.02	3.50	0.007	476.8	48.72	236.9	3.86	3.55	4.00
07/21/2020 22:45	14.51	2.17	2.00	3.50	0.007	476.0	48.64	237.3	3.87	3.57	4.00
07/21/2020 22:46	14.51	2.16	1.99	3.50	0.007	475.8	48.64	237.2	3.88	3.58	4.00
07/21/2020 22:47	14.51	2.09	1.93	3.50	0.007	476.4	48.68	237.5	4.00	3.69	4.15
07/21/2020 22:48	14.51	2.06	1.90	3.51	0.007	477.0	48.79	237.8	4.05	3.74	4.21
07/21/2020 22:49	14.49	2.08	1.91	3.51	0.007	477.3	48.82	237.2	4.00	3.68	4.16
07/21/2020 22:50	14.50	2.20	2.03	3.51	0.007	477.0	48.77	237.5	3.81	3.51	3.96
07/21/2020 22:51	14.48	2.50	2.30	4.00	0.008	476.7	48.74	236.5	3.62	3.33	3.75
07/21/2020 22:52	14.51	2.69	2.48	4.50	0.009	476.1	48.70	237.4	3.57	3.30	3.70
07/21/2020 22:53	14.50	2.72	2.51	4.51	0.009	477.0	48.76	237.5	3.70	3.41	3.86
07/21/2020 22:54	14.48	2.59	2.38	4.51	0.009	477.0	48.78	236.7	3.83	3.52	3.96

2-NH3-U1

CEMTEK KVB-Enertec NetDAHS©

Version 47.0

Period Start:	Average 1_O2 %	Average 1_NOXPPM ppm	Average 1_NOX_CORR ppm	Average 1_NOX_LBHR #/hr	Average 1_NOX_LBMM #/MBTU	Average 1_GasFlow kscfh	Average 1_LOAD MW	Average 1_STACKFLW kscfm	Average 1_COPPM ppm	Average 1_CO_CORR ppm	Average 1_CO_LBHR #/hr
07/21/2020 22:55	14.50	2.56	2.36	4.51	0.009	477.5	48.85	237.7	3.86	3.56	4.01
07/21/2020 22:56	14.48	2.60	2.39	4.51	0.009	477.6	48.85	237.0	3.82	3.51	3.96
07/21/2020 22:57	14.47	2.61	2.39	4.51	0.009	477.1	48.80	236.4	3.79	3.48	3.91
07/21/2020 22:58	14.49	2.66	2.45	4.50	0.009	476.2	48.73	236.7	3.72	3.42	3.85
07/21/2020 22:59	14.53	2.66	2.46	4.49	0.009	475.3	48.64	237.7	3.75	3.47	3.89
07/21/2020 23:00	14.50	2.50	2.30	4.00	0.008	476.3	48.72	237.1	3.98	3.67	4.10
07/21/2020 23:01	14.46	2.34	2.14	4.01	0.008	477.4	48.85	236.2	3.95	3.62	4.06
07/21/2020 23:02	14.49	2.42	2.23	4.00	0.008	476.7	48.81	236.9	3.73	3.43	3.85
07/21/2020 23:03	14.50	2.48	2.29	4.00	0.008	476.0	48.69	236.9	3.63	3.35	3.75
07/21/2020 23:04	14.53	2.43	2.25	3.99	0.008	475.1	48.63	237.6	3.75	3.47	3.89
07/21/2020 23:05	14.54	2.31	2.14	3.98	0.008	474.4	48.52	237.6	4.03	3.74	4.18
07/21/2020 23:06	14.49	2.24	2.06	3.97	0.008	472.8	48.32	235.0	4.11	3.78	4.22
07/21/2020 23:07	14.49	2.36	2.17	4.00	0.008	476.5	48.79	236.8	3.86	3.55	4.00
07/21/2020 23:08	14.52	2.56	2.37	4.49	0.009	474.9	48.57	237.1	3.48	3.22	3.59
Daily Average*	**14.47**	**2.40**	**2.20**	**4.04**	**0.008**	**479.5**	**49.11**	**237.6**	**3.72**	**3.42**	**3.86**
Maximum*	**14.54**	**2.72**	**2.51**	**4.51**	**0.009**	**482.2**	**49.44**	**238.2**	**4.11**	**3.78**	**4.22**
	07/21/2020 23:05	07/21/2020 22:53	07/21/2020 22:53	07/21/2020 22:57	07/21/2020 23:08	07/21/2020 22:39	07/21/2020 22:15	07/21/2020 22:39	07/21/2020 23:06	07/21/2020 23:06	07/21/2020 23:06
Minimum*	**14.44**	**2.06**	**1.90**	**3.50**	**0.007**	**472.8**	**48.32**	**235.0**	**3.48**	**3.22**	**3.59**
	07/21/2020 22:11	07/21/2020 22:48	07/21/2020 22:48	07/21/2020 22:47	07/21/2020 22:50	07/21/2020 23:06	07/21/2020 23:06	07/21/2020 23:06	07/21/2020 23:08	07/21/2020 23:08	07/21/2020 23:08

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSION CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \%CO_2 + 0.32 * \%O_2 + 0.28 * \%N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$Ps = Pbar + \frac{Psg}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * (P_{bar} + \frac{\Delta H}{13.6}) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{lc} * \frac{T_{ref}}{528\ ^\circ R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack gas volumetric flow rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 \text{ x } T_s \text{ } (V_m std)}{(1\text{-}Bwo) \text{ } 0 \text{ x } Vs \text{ x } Ps \text{ x } Dn2} \text{ x } \frac{520°R}{T_{ref}}$$

VII. Particulate emissions

(a) Grain loading, gr/dscf
$C = 0.01543 \ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C \ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
M = C x Qsd x (60 min/hr)/(7000 gr/lb)

(d) Particulate emission factor

$$lb/10^6 \text{ Btu} = Cx \frac{1 \text{ lb}}{7000 \text{ gr}} \text{ x F x } \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	= stack area, ft^2
B_{wo}	= flue gas moisture content, dimensionless
$C_{12\%CO2}$	= particulate grain loading, gr/dscf corrected to 12% CO_2
C	= particulate grain loading, gr/dscf
C_p	= pitot calibration factor, dimensionless
Dn	= nozzle diameter, in.
F	= fuel F-Factor, dscf/MMBtu @ 0% O_2
H	= orifice differential pressure, iwg
I	= % isokinetics
M_n	= mass of collected particulate, mg
M_i	= mass emission rate of specie i, lb/hr
MW	= molecular weight of flue gas, lb/lb-mole
M_{wi}	= molecular weight of specie i: SO_2: 64 NO_x: 46 CO: 28 HC: 16
0	= sample time, min.
ΔP	= average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	= barometric pressure, inches Hg
P_s	= stack absolute pressure, inches Hg
P_{sg}	= stack static pressure, iwb
Q	= wet stack flow rate at actual conditions, wacfm
Q_{sd}	= dry standard stack flow rate, dscfm
SV	= specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	= meter temperature, °R
T_{ref}	= reference temperature, °R
T_s	= stack temperature, °R
V_s	= stack gas velocity, ft/sec
V_{lc}	= volume of liquid collected in impingers, ml
V_m	= uncorrected dry meter volume, dcf
V_{mstd}	= dry meter volume at standard conditions, dscf
V_{wstd}	= volume of water vapor at standard conditions, scf
Y_d	= meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

MONTROSE AIR QUALITY SERVICES

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U1**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**SD**
Test Number	1-NH3-U1	2-NH3-U1	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	7/21/2020	7/21/2020			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	38-WCS	38-WCS			
Meter Calibration Factor	0.986	0.986			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.58	29.58			
Start/Stop Time	2041/2144	2205/2308			
Meter Volume (acf)	48.990	48.081			
Meter Temperature (°F)	74.0	73.6			
Meter Pressure (iwg)	2.0	2.0			
Liquid Volume (ml)	132.1	130.8			
Stack O_2 (%)	14.45	14.47	14.46	(from facility CEMS)	
Unit Load (MW)	49	49	49.2		
Standard Sample Volume (SCF)	46.731	45.898			
Moisture Fraction	0.116	0.117			
Stack Flow Rate (dscfm, 68 °F)	237,500	237,600	237,550	(from facility CEMS)	
Stack Flow Rate (@ Tref)	233,902	234,000	233,951		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	1,518	1,385			
Mass NH_3 (lb)	3.35E-06	3.05E-06			
NH_3 (ppmv, flue gas)	1.6	1.5	1.5	1.6	
NH_3 (ppmv @ O_2 Correction Factor)	1.5	1.4	1.4	1.5	5
NH_3 (lb/hr)	1.0	0.9	1.0	1.0	
NH_3 (lb/MMBtu)	0.002	0.002	0.002	0.002	
NH_3 (lb/MMSCF)	2.1	1.9	2.0	2.1	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

MONTROSE AIR QUALITY SERVICES

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U1

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	0.986
D	Barometric Pressure	" Hg	--	29.58
E	Meter Volume	acf	--	48.990
F	Meter Temperature	F	--	74.0
G	Meter Temperature	R	F + 460	534.0
H	Delta H	" H_2O	--	2.0
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	46.731
J	Liquid Collected	grams	--	132.1
K	Water vapor volume	scf	0.0472 * J * B/528	6.141
L	Moisture Content	--	K/(K + I)	0.116
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	237,500
T	Stack Flow Rate @ Tref	dscfm	S * B/528	233,902
U	Mass NH_3	ug	--	1,518
V	Mass NH_3	lb	U * Q	3.35E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^6)/(I * W)$	1.6
Y	Flue Gas O_2	%	--	14.45
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.5
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^6)$	1.0
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^6) * 20.9/(20.9 - Y)$	0.002
AC	NH_3	lb/MMSCF	AB * P	2.1

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements will be used.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 6, 2019

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2019, and ending September 30, 2020 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling	

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

190906 LapRenewalRev.doc

STAC
STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual QI Certificate

CERTIFICATE OF COMPLETION

Sean Donovan

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2016-06

Tate Strickler, Accreditation Director

DATE OF ISSUE: 11/30/16

DATE OF EXPIRATION: 11/30/21

MONTROSE ENVIRONMENTAL

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 1, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555828 GENERATOR, 50.95 MW	D1	C3	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.1, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section E and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 1, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476654	C3	D1 C4			
SELECTIVE CATALYTIC REDUCTION, NO. 1, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476654 AMMONIA INJECTION	C4	C3 S6		**NH3**: 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.4, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 1, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555828	S6	C4			

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[**RULE 1110.2, 2-1-2008;** RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013**]

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

If the turbine is not in operation during one calendar year, then no testing is required during that calendar year.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the District within 60 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1, D7, D13, D19]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Sampling Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.1	4 hours	Outlet of the SCR serving this equipment

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If you have any questions, please contact one of the following individuals by email or phone.

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Region: West
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TEST REPORT FOR
3Q20 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 2
FACILITY ID: 153992, DEVICE ID: D7

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Avenue
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 282-8240

Sean Donovan

Test Date: **July 23, 2020**
Production Date: **August 18, 2020**
Report Number: **W002AS-682102-RT-1481**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

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REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 8/18/2020

Name: Sean Donovan Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 8/18/2020

Name: Mike Chowsanitphon Title: Reporting Manager

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS), was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 2 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on July 23, 2020. The test was performed by Sean Donovan, Danny Avila, Rik Dupont, and Robert Howard. Sean Donovan was the on-site Qualified Individual for MAQS. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 50 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS SUMMARY
CANYON POWER PLANT UNIT 2
JULY 23, 2020

Parameter	Result(1)	Limit
NH_3		
ppm	2.4	--
ppmc	2.3	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1

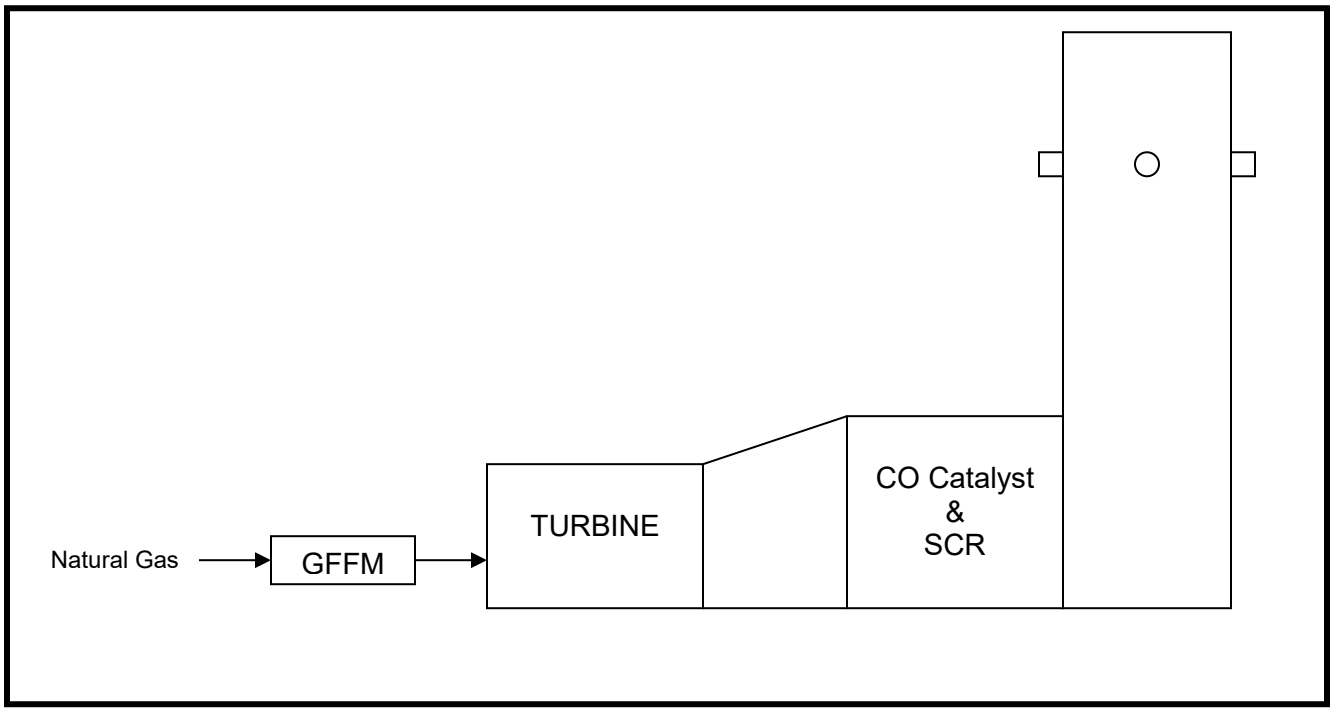
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT AND CEMS DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 50 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

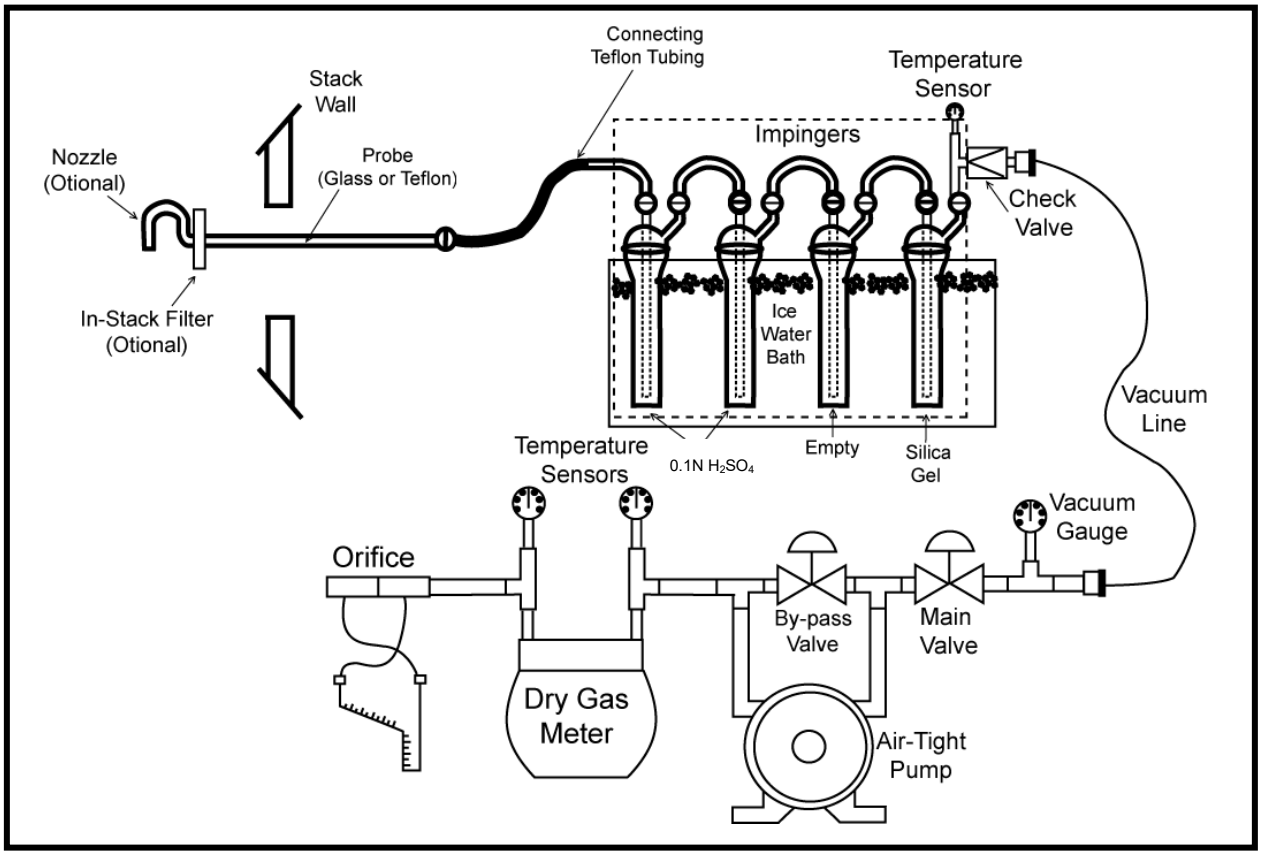
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a glass probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sampling equipment.

Stack O_2 and NO_x concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLE EQUIPMENT



4.0 TEST RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the ammonia slip was 2.3 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT UNIT 2
JULY 23, 2020

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U2	2-NH_3-U2			--
Date	7/23/2020	7/23/2020			--
Time	2010/2118	2141/2244			--
O_2, %(2)	14.65	14.61	14.63	--	--
Stack Flow, dscfm @ T_{ref}(2)	236,265	235,576	235,920	--	--
NO_x, ppmc(2)	2.2	2.2	2.2	--	2.5
NH_3					
ppm	2.4	1.7	2.1	2.4	--
ppmc	2.3	1.6	1.9	2.3	5
lb/hr	1.5	1.1	1.3	1.5	--
lb/MMBtu	0.003	0.002	0.003	0.003	--
lb/MMSCF	3.3	2.3	2.8	3.3	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

4.2 TEST OVERVIEW

The test program was successful in meeting the program objectives. The sample train was leak checked before and after the test and all QA/QC requirements of SCAQMD Method 207.1 were satisfied.

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 2
DATE: 7/23/20
RUN NO: FB-NH3
OPERATOR: RH
METER BOX NO: 38WCS
METER Yd: 0.980

CEMS Heated Line Temp: NA
CEMS Knock Out Temp: NA
CHECK WEIGHT: ~~499.8~~ JG 7/23/20 499.8/500.0

AMBIENT TEMPERATURE: 70°
BAROMETRIC PRESSURE: 29.64
ASSUMED MOISTURE : NA
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Ti
PROBE LENGTH: 8'
PRE-TEST LEAK RATE 0.005 CFM@ 15 in. Hg
POST-TEST LEAK RATE : ____ CFM@ ____ in. Hg

PITOT LEAK CHECK - PRE: ____ POST: ____

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	764.0	664.2	
2	H_2SO_4	683.3	683.3	
3	MT	630.4	630.4	
4	SG	990.4	990.3	
Total:	LR		100	

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	Pstatic in. H_2O
Average:												

FIELD BLANK NH3

Comments: _____

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 2
DATE: 7/23/20
RUN NO: 2-NH3-2
OPERATOR: RH
METER BOX NO: 38-WCS
METER Yd: 0.980

CEMS Heated Line Temp: 281
CEMS Knock Out Temp: 00.2
CHECK WEIGHT: 499.8/500.0

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 29.61
ASSUMED MOISTURE : ~12%
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL: NA/Ti
PROBE LENGTH: 8'
PRE-TEST LEAK RATE : 0.005 CFM@ 18 in. Hg
POST-TEST LEAK RATE : 0.005 CFM@ 18 in. Hg

PITOT LEAK CHECK - PRE: NA POST: NA

Imp. #	Contents	Post-Test - Pre-Test = Difference
1	H_2SO_4	939.8 723.8
2	~~H_2SO_4~~	716.0 712.7
3	MT	670.6 669.5
4	SG	890.2 886.0
Total:	LR	Ø 10e

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	Pstatic in. H_2O
3	2141	919.200	NA	2.0	NA	NA	NA	54	74	72	5	
2	2146	—						—	—	—	—	
1	2151	—						—	—	—	—	
PL	2156	930.857						—	—	—	—	
—	—	—						—	—	—	—	
3	2157	930.857						52	75	72	5	
2	2202	—						—	—	—	—	
1	2207	—						—	—	—	—	
PL	~~2212~~	942.524						—	—	—	—	
—	2213 7/23/20	—						—	—	—	—	
3	2213	942.524						50	73	71	5	
2	2218	—						—	—	—	—	
1	2223	—						—	—	—	—	
PL	2228	954.570						—	—	—	—	
—	—	—						—	—	—	—	
3	2229	954.570						52	74	72	5	
2	2234	—						—	—	—	—	
1	2239	—						—	—	—	—	
END	2244	967.117						—	—	—	—	
Average:												

Comments: _____

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: City of Anaheim
LOCATION: Canyon 2
DATE: 7/28/20
RUN NO: 1 – NH_3 - U-2
OPERATOR: RH ~~[illegible]~~ RH 7-23-2020
METER BOX NO: [illegible]-WCS
METER Yd: 0.986

CEMS Heated Line Temp: 270
CEMS Knock Out Temp: 00.3
CHECK WEIGHT: 499.8/500.0

AMBIENT TEMPERATURE: 70
BAROMETRIC PRESSURE: 29.64
ASSUMED MOISTURE: ~12%
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: Ti
PROBE LENGTH: 10'
PRE-TEST LEAK RATE: <0.005 CFM@ 18 in. Hg
POST-TEST LEAK RATE: <0.005 CFM@ 19 in. Hg

PITOT LEAK CHECK - PRE: NA POST: NA

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	H_2SO_4	879.9	669.7	
2	H_2SO_4	682.2	681.3	
3	MT	631.5	630.8	
4	SG	1004.9	~~939.2~~ 990.3	
Total:	LR	Ø	100	

JG 7/21/20

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	Pstatic in. H_2O
3	2010	869.200	N/A	2.0	N/A	N/A	N/A	56	75	74	7	
2	2015	—						—	—	—	—	
1	2020	—						—	—	—	—	
PC	2025	881.303						—	—	—	—	
—	—	—						—	—	—	—	
3	2026	881.303						55	76	74	7	
2	2031	—						—	—	—	—	
1	2036	—						—	—	—	—	
PC	2041	893.664						—	—	—	—	
—	—							—	—	—	—	
3	2044	893.664						53	75	71	7	
2	2049	—						—	—	—	—	
1	2054	—						—	—	—	—	
PC	2059	905.763						—	—	—	—	
—	—	—						—	—	—	—	
3	2103	905.763						54	75	71	7	
2	2108	-						—	—	—	—	
1	2112	-						—	—	—	—	
END	2118	917.797						—	—	—	—	
Average:												

Comments:

Appendix A.2
Laboratory Data

MONTROSE

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: W02AS-682102 | District Method: SCAQMD 207.1 | Sample Date: 7/23/2020
Client/Location: SCPPA Compressor | Calibration Date: 7/27/2020 | Analysis Date: 7/27/2020
Sample Location: Stack U2 | Calibration Curve: y = 54.2597x + 79.3597 | Analyst's Initials: LM
Test #'s: 1-2-NH3 | R^2: 0.9999 | Room Temperature (°C): 22.0

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml	—	~~27.456~~ 1.3	27.456	27.750	—	22.6	Y	—	-0.893
		0.8	28.044			22.6	Y		
1-NH_3	526.8	49.3	3.581	3.566	2283.390	22.5	Y	CZ	—
		49.5	3.551			22.5	Y		
2-NH_3	501.2	59.5	2.323	2.308	1574.529	22.5	Y	CZ	—
		59.8	2.293			22.5	Y		
Spike: 1-NH_3 +2ml 1000ppm NH_3	—	7.1	21.465	21.420	—	22.5	Y	—	93.20
		7.2	21.374			22.5	Y		
Standard Check: 28 µg NH3/ml	—	1.0	27.807	27.807	—	22.6	Y	—	-0.688
		1.0	27.807			22.6	Y		
Reagent Blank 0.1N H_2SO_4	—	141.6	0.071	0.071	—	23.0	Y	—	—
		141.6	0.071			23.0	Y		
DI H_2O Blank	—	144.5	0.063	0.063	—	23.0	Y	—	—
		144.4	0.063			23.0	Y		
Field Blank	428.3	120.4	0.175	0.174	90.657	23.0	Y	CZ	—
		120.7	0.173			23.0	Y		
Standard Check: 28 µg NH3/ml	—	0.8	28.044	28.164	—	22.6	Y	←	0.595
		0.6	28.283			22.6	Y		

* LM 7/27/20

Notes: Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.1N H_2SO_4

Calculations:
Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)
Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2
µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV
mg / sample = µg /sample ÷ 1000
ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Project Number:	002AS-682102
Client/ Location:	SCPPA-Canyon Power Plant
Sample Location:	Stack U2
District Method:	SCAQMD 207.1
Sample Date:	7/23/2020
Analysis Date:	7/27/2020
Analyst's Initials:	LM
Calibration Curve Slope	-54.2597
Y-intercept	79.3597
R^2	0.9999

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	1.3	27.456				
Repeat 28 ug NH_3/ml as N	0.8	28.044	27.750	NA	33.732	NA
1-NH_3	49.3	3.581				
Repeat 1- NH_3	49.5	3.551	3.566	526.8	4.334	2283.390
2-NH3	59.5	2.323				
Repeat 2- NH3	59.8	2.293	2.308	561.2	2.806	1574.529
spike 1-NH_3	7.1	21.465				
Repeat 1-NH3 spike	7.2	21.374	21.420	NA	26.037	NA
28 NH_3/ml as N	1.0	27.807				
Repeat 28 ug NH_3/ml as N	1.0	27.807	27.807	NA	33.802	NA
Reagent Blank	141.6	0.071				
Repeat Reagent Blank	141.6	0.071	0.071	NA	0.087	NA
Field Blank	120.4	0.175				
Repeat Field Blank	120.7	0.173	0.174	428.3	0.212	90.657
DI H2O Blank	144.4	0.063				
Repeat DI H2O Blank	144.5	0.063	0.063	NA	0.077	NA
28 NH_3/ml as N	0.8	28.044				
Repeat 28 ug NH_3/ml as N	0.6	28.283	28.164	NA	34.235	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Project Number: 002AS-682102
Client/ Location: SCPPA-Canyon Power Plant
Sample Location: Stack U2
District Method: SCAQMD 207.1
Sample Date: 7/23/2020
Analysis Date: 7/27/2020
Analyst's Initials: LM

Sample	% recovery	RPD %	RPA %
28 ug NH3 / ml as N epeat 28 ug NH3/ml as	NA	-2.12	-0.893
1-NH3 Repeat 1- NH3	NA	0.85	NA
2-NH3 Repeat 2- NH3	NA	1.27	NA
spike 1-NH3 Repeat 1-NH3 spike	93.20	0.42	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	0.00	-0.688
Reagent Blank Repeat Reagent Blank	NA	0.00	NA
Field Blank Repeat Field Blank	NA	1.27	NA
DI H2O Blank Repeat DI H2O Blank	NA	0.42	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	-0.85	0.585

Notes:

spike: 100 ml sample + 2 ml (1000 μg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (μg NH_3/ ml as N)

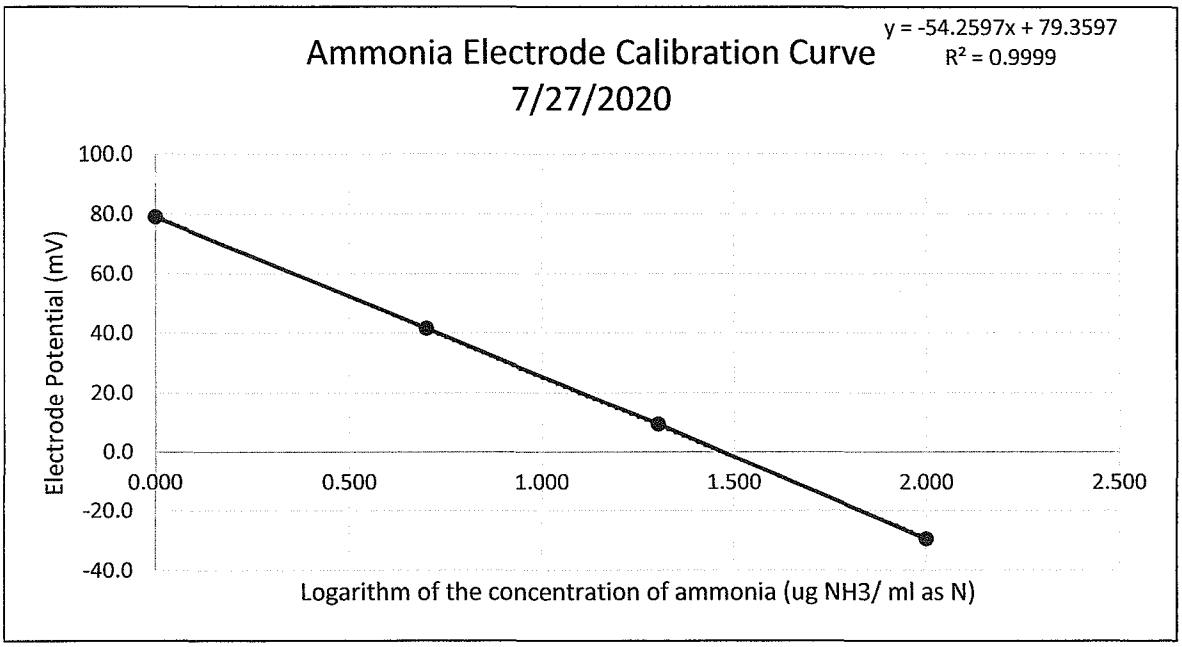
Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	79.1	22	22
5	0.699	41.6	22	22
20	1.301	9.2	22	22
100	2.000	-29.5	22	22



slope	-54.2597
y-intercept	79.3597

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	1.0111	0.0111	1.1083
5	4.9649	-0.0351	-0.7028
20	19.6352	-0.3648	-1.8241
100	101.4545	1.4545	1.4545

Calculation:

Regression Line: $P=M*\log(\mu g \text{ of } NH_3/ \text{ ml as N})+B$

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

MONTROSE
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AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 7/27/2020

Calibration Curve: y = -54.2597x + 79.3597

R^2 0.9999

Analyst's Initials: LM

Thermometer #: 1

ISE Electrode #: B

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	79.1	22.6	22.0
5	41.6	22.6	22.0
20	9.2	22.6	22.0
100	-29.5	22.6	22.0

Notes:

Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.04 N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

CHAIN OF CUSTODY

CLIENT: SCPPA - Canyon Power Plant PROJECT #: W002AS-682102 TEST DATE(S): 7/23/2020

LOCATION: U2 SAMPLER(S): RH/DA/RD

SAMPLE LOCATION: Stack PROJECT MANAGER: SD

TEST METHOD(S): SCAQMD 207.1 DATE DUE: 7/30/2020

OUTSIDE LAB REQUIRED?: No COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
7/23/2020	2010/2118	1-NH3-U2	Probe, Line, Impingers	1	RH/DA/RD	
7/23/2020	2141/2244	2-NH3-U2	Probe, Line, Impingers	1	RH/DA/RD	
7/23/2020		FB-NH3-U2	Probe, Line, Impingers	1	RH/DA/RD	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
R. Howard / LAB	7-24-2020 / 2244		7/27/20 0857

ANALYSIS REQUIRED: NH_3 by SCAQMD 207.1 (ISE)

Appendix A.3
QA/QC Data

SCAQMD METHOD 207.1 - AMMONIA
DETERMINATION OF SAMPLE TIME

Source: Canyon U2
Date: 7/23/2020
Performed by: SD

Constants:

	1,000	mg/gram
	454	grams/lb
	35.315	SCF/SCM
	379.5	SCF/lb-mole
	1,000,000	parts/million parts
MW_{NH3}	17.03	lb/lb-mole
MW_{N2}	14.01	lb/lb-mole

Variables:

Target concentration	5	ppm @ O_2 correction factor
O_2 correction factor	15	% O_2
Expected Flue Gas O_2	14.5	% O_2
F	2	Safety Factor
P	128.5	electrode potential corresponding to minimum value on calibration curve (mV)
B	128.83	y-intercept
M	-58.676	slope
V_r	0.5	Assumed liquid volume of probe rinse and first impinger (L)
Q @ dH = 1	0.55	cfm

Calculated Values:

Target concentration	5.4	ppm - raw
Target concentration	3.90	mg/dscm
C_1	1.013	Lowest concentration on a calibration curve (mg NH3-N/L)
RL	0.616	analytical mass reporting limit, mg
PSV	0.316	Planned sample volume, cubic meters
PSV	11.144	Planned sample volume, cubic feet
VSR	33.0	achievable volumetric sampling rate (dscf/hr)
PST	**20.3**	**Planned sample time, minutes (minimum)**

Notes:
1) A minimum of 1 hour sample time is required for any mass per hour limits.
2) Facility Permit or Rule may specify sample time

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\38-wcs\2020\[semi annual cal 38wcs 2-27-20.xlsx]W(
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: c-5000
38-wcs
Date: 2/27/2020
Bar. Pressure: 30.17 (in. Hg)
Performed By: R. Howard
Meter Serial #:

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	463.700	469.149	5.449	69.0	66.0	71.0	68.0	33	0.1551	18.0	64.0	64.0	64.0
0.13	26.00	469.149	474.592	5.443	71.0	68.0	72.0	69.0	33	0.1551	18.0	64.0	64.0	64.0
0.13	26.00	474.592	480.032	5.440	72.0	69.0	72.0	70.0	33	0.1551	18.0	64.0	64.0	64.0
0.59	12.00	447.400	452.664	5.264	66.0	65.0	66.0	64.0	48	0.3345	16.0	62.0	62.0	62.0
0.59	12.00	452.664	457.895	5.231	66.0	64.0	68.0	65.0	48	0.3345	16.0	62.0	62.0	62.0
0.59	12.00	457.895	463.127	5.232	68.0	65.0	69.0	65.0	48	0.3345	16.0	62.0	62.0	62.0
1.80	7.00	482.500	488.027	5.527	72.0	70.0	73.0	70.0	63	0.5915	14.0	65.0	65.0	65.0
1.80	7.00	488.027	493.551	5.524	73.0	70.0	74.0	70.0	63	0.5915	14.0	65.0	65.0	65.0
1.80	7.00	493.551	499.086	5.535	74.0	70.0	74.0	71.0	63	0.5915	14.0	65.0	65.0	65.0
3.10	5.00	499.900	504.949	5.049	75.0	71.0	76.0	72.0	73	0.7678	11.0	66.0	66.0	66.0
3.10	5.00	504.949	509.993	5.044	76.0	72.0	76.0	71.0	73	0.7678	11.0	66.0	66.0	66.0
3.10	5.00	509.993	515.044	5.051	76.0	71.0	76.0	71.0	73	0.7678	11.0	66.0	66.0	66.0

)RY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR				
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	Individual Run 0.95 < Y < 1.05?	Individual Orifice Ymax - Ymin < 0.010?	Orifice Average 0.98 < Y/Yd < 1.02?	Orifice Average dH@ - dH@ av < 0.155?
5.489	155.4	5.315	150.5	5.233	0.968	1.768	**Pass**			
5.467	154.8	5.315	150.5	5.233	0.972	1.763	**Pass**			
5.457	154.5	5.315	150.5	5.233	0.974	1.759	**Pass**			
				Average	**0.971**	**1.763**		**Pass**	**Pass**	**Pass**
5.341	151.3	5.300	150.1	5.198	0.992	1.727	**Pass**			
5.303	150.2	5.300	150.1	5.198	0.999	1.727	**Pass**			
5.294	149.9	5.300	150.1	5.198	1.001	1.725	**Pass**			
				Average	**0.998**	**1.726**		**Pass**	**Pass**	**Pass**
5.561	157.5	5.452	154.4	5.379	0.980	1.676	**Pass**			
5.553	157.3	5.452	154.4	5.379	0.982	1.676	**Pass**			
5.559	157.4	5.452	154.4	5.379	0.981	1.675	**Pass**			
				Average	**0.981**	**1.676**		**Pass**	**Pass**	**Pass**
5.075	143.7	5.050	143.0	4.992	0.995	1.712	**Pass**			
5.067	143.5	5.050	143.0	4.992	0.997	1.712	**Pass**			
5.077	143.8	5.050	143.0	4.992	0.995	1.714	**Pass**			
				Average	**0.996**	**1.713**		**Pass**	**Pass**	**Pass**

Average Yd: **0.986** **dH@:** **1.720**

Q @ dH = 1: **0.572**

SIGNED: Signature on File Date: 2/27/2020

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 38-wcs
Readout Description: Control Box
Date: 7/2/2020
Performed By: JG/DH/LO/DA

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 492956
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D. **TC-CAL**	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	38-wcs	349	349	349	349	350	350	350	350	1.0	0.1%	Pass
T2 (Boiling H_2O)	38-wcs	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	38-wcs	34	34	34	34	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	S/N 106970	651	651	651	651	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	S/N 106970	368	368	368	368	365	365	365	365	3.0	0.4%	Pass
T2 (~212 F)	S/N 106970	213	212	213	213	212	212	212	212	0.7	0.1%	Pass
T1 (~32 F)	S/N 106970	35	35	35	35	32	32	32	32	3.0	0.6%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

APPENDIX B
FACILITY CEMS DATA

CEMTEK KVB-Enertec NetDAHS©

Version 47.0

1-NH3-2

Average Values Report
Generated: 7/23/2020 21:46

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 2

Period Start: 7/23/2020 20:11
Period End: 7/23/2020 21:18
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/23/2020 20:11	14.62	2.47	2.32	4.42	0.009	467.9	49.62	237.4	3.30	3.10	3.44
07/23/2020 20:12	14.66	2.49	2.35	4.42	0.009	467.9	49.78	238.9	3.29	3.11	3.44
07/23/2020 20:13	14.66	2.40	2.27	3.92	0.008	467.2	49.82	238.5	3.35	3.17	3.48
07/23/2020 20:14	14.65	2.36	2.23	3.93	0.008	467.4	49.78	238.3	3.40	3.21	3.53
07/23/2020 20:15	14.64	2.42	2.28	3.94	0.008	468.7	49.75	238.5	3.32	3.13	3.44
07/23/2020 20:16	14.64	2.48	2.34	4.42	0.009	467.6	49.63	238.0	3.29	3.10	3.44
07/23/2020 20:17	14.66	2.47	2.34	4.43	0.009	468.6	49.82	239.2	3.28	3.10	3.44
07/23/2020 20:18	14.65	2.47	2.33	4.43	0.009	469.2	49.72	239.2	3.35	3.16	3.50
07/23/2020 20:19	14.65	2.42	2.28	3.94	0.008	469.2	49.71	239.2	3.39	3.20	3.55
07/23/2020 20:20	14.65	2.38	2.25	3.94	0.008	468.7	49.60	238.9	3.43	3.24	3.59
07/23/2020 20:21	14.65	2.43	2.29	3.94	0.008	469.4	49.76	239.3	3.38	3.19	3.55
07/23/2020 20:22	14.64	2.40	2.26	3.94	0.008	469.5	50.02	238.9	3.42	3.22	3.55
07/23/2020 20:23	14.64	2.35	2.21	3.95	0.008	470.4	49.96	239.4	3.49	3.29	3.65
07/23/2020 20:24	14.65	2.40	2.27	3.94	0.008	469.2	49.70	239.2	3.51	3.31	3.65
07/23/2020 20:25	14.64	2.39	2.25	3.95	0.008	470.2	49.96	239.3	3.53	3.33	3.70
07/23/2020 20:26	14.66	2.38	2.25	3.94	0.008	469.5	49.81	239.7	3.56	3.37	3.75
07/23/2020 20:27	14.64	2.36	2.22	3.95	0.008	470.0	49.76	239.2	3.59	3.38	3.75
07/23/2020 20:28	14.65	2.31	2.18	3.95	0.008	470.2	49.90	239.7	3.60	3.40	3.75
07/23/2020 20:29	14.63	2.34	2.20	3.95	0.008	470.5	49.88	239.0	3.57	3.36	3.71
07/23/2020 20:30	14.64	2.36	2.22	3.96	0.008	472.0	49.92	240.2	3.52	3.32	3.67
07/23/2020 20:31	14.63	2.37	2.23	3.96	0.008	471.7	49.67	239.7	3.57	3.36	3.71
07/23/2020 20:32	14.65	2.30	2.17	3.96	0.008	471.7	49.76	240.4	3.67	3.46	3.86
07/23/2020 20:33	14.67	2.24	2.12	3.96	0.008	471.2	49.83	241.0	3.83	3.63	4.01
07/23/2020 20:34	14.67	2.23	2.11	3.95	0.008	470.6	49.77	240.6	3.91	3.70	4.10
07/23/2020 20:35	14.65	2.23	2.11	3.97	0.008	472.4	49.74	240.8	3.89	3.67	4.07
07/23/2020 20:36	14.65	2.27	2.14	3.96	0.008	471.3	49.58	240.2	3.82	3.61	4.01
07/23/2020 20:37	14.66	2.26	2.14	3.97	0.008	472.4	49.60	241.2	3.78	3.57	3.97
07/23/2020 20:38	14.65	2.27	2.14	3.96	0.008	471.6	49.81	240.4	3.79	3.58	3.96
07/23/2020 20:39	14.66	2.26	2.14	3.96	0.008	471.7	49.98	240.8	3.84	3.63	4.01
07/23/2020 20:40	14.67	2.20	2.08	3.96	0.008	471.3	49.62	241.0	3.91	3.70	4.11
07/23/2020 20:41	14.65	2.25	2.12	3.97	0.008	472.7	49.98	240.9	3.86	3.64	4.07
07/23/2020 20:42	14.65	2.28	2.15	3.96	0.008	471.8	49.76	240.5	3.83	3.62	4.01
07/23/2020 20:43	14.65	2.24	2.11	3.97	0.008	472.7	49.71	240.9	3.83	3.62	4.02
07/23/2020 20:44	14.64	2.28	2.15	3.97	0.008	472.9	49.82	240.6	3.83	3.61	4.02
07/23/2020 20:45	14.66	2.27	2.15	3.96	0.008	472.0	49.41	241.0	3.87	3.66	4.06
07/23/2020 20:46	14.65	2.19	2.07	3.96	0.008	471.4	49.74	240.3	3.97	3.75	4.16
07/23/2020 20:47	14.65	2.21	2.09	3.97	0.008	472.6	49.73	240.9	3.88	3.66	4.07
07/23/2020 20:48	14.65	2.26	2.13	3.96	0.008	472.0	49.73	240.6	3.85	3.63	4.06
07/23/2020 20:49	14.67	2.22	2.10	3.96	0.008	471.1	49.41	240.9	3.89	3.68	4.11
07/23/2020 20:50	14.67	2.19	2.07	3.93	0.008	468.3	49.27	239.5	3.96	3.75	4.13
07/23/2020 20:51	14.63	2.26	2.13	3.94	0.008	469.5	49.59	238.6	3.79	3.57	3.94
07/23/2020 20:52	14.61	2.32	2.18	3.97	0.008	472.9	49.64	239.5	3.59	3.37	3.77
07/23/2020 20:53	14.63	2.34	2.20	3.97	0.008	472.7	49.54	240.2	3.56	3.35	3.72
07/23/2020 20:54	14.67	2.27	2.15	3.97	0.008	472.6	50.12	241.6	3.77	3.57	3.97
07/23/2020 20:55	14.67	2.18	2.06	3.96	0.008	471.9	49.51	241.3	3.97	3.76	4.16
07/23/2020 20:56	14.68	2.16	2.05	3.96	0.008	472.0	49.80	241.7	4.07	3.86	4.31
07/23/2020 20:57	14.67	2.15	2.04	3.96	0.008	472.0	49.71	241.4	4.12	3.90	4.36

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/23/2020 20:58	14.65	2.13	2.01	3.47	0.007	472.4	49.98	240.8	4.14	3.91	4.36
07/23/2020 20:59	14.64	2.16	2.04	3.97	0.008	472.3	49.94	240.3	4.04	3.81	4.22
07/23/2020 21:00	14.63	2.20	2.07	3.96	0.008	471.0	49.49	239.3	3.89	3.66	4.06
07/23/2020 21:01	14.64	2.30	2.17	3.96	0.008	471.2	49.65	239.8	3.71	3.50	3.86
07/23/2020 21:02	14.65	2.36	2.23	3.95	0.008	470.4	49.83	239.8	3.66	3.46	3.85
07/23/2020 21:03	14.65	2.34	2.21	3.95	0.008	470.6	49.68	239.9	3.68	3.47	3.85
07/23/2020 21:04	14.65	2.32	2.19	3.95	0.008	470.3	49.62	239.7	3.70	3.49	3.85
07/23/2020 21:05	14.66	2.37	2.24	3.95	0.008	470.2	49.77	240.0	3.60	3.40	3.75
07/23/2020 21:06	14.67	2.38	2.25	3.95	0.008	469.9	49.79	240.3	3.63	3.44	3.80
07/23/2020 21:07	14.65	2.30	2.17	3.95	0.008	470.2	49.88	239.7	3.68	3.47	3.85
07/23/2020 21:08	14.67	2.29	2.17	3.95	0.008	470.0	49.80	240.3	3.68	3.49	3.85
07/23/2020 21:09	14.65	2.36	2.23	3.95	0.008	470.8	49.77	240.0	3.62	3.42	3.81
07/23/2020 21:10	14.65	2.33	2.20	3.95	0.008	470.1	49.84	239.6	3.63	3.43	3.80
07/23/2020 21:11	14.67	2.36	2.23	3.95	0.008	470.5	49.68	240.6	3.63	3.44	3.80
07/23/2020 21:12	14.63	2.39	2.25	3.95	0.008	470.4	49.95	239.0	3.61	3.40	3.75
07/23/2020 21:13	14.68	2.32	2.20	3.95	0.008	470.0	49.69	240.7	3.63	3.44	3.80
07/23/2020 21:14	14.64	2.34	2.21	3.95	0.008	470.7	49.79	239.5	3.62	3.41	3.81
07/23/2020 21:15	14.65	2.39	2.26	3.96	0.008	470.9	49.60	240.0	3.56	3.36	3.71
07/23/2020 21:16	14.66	2.35	2.22	3.96	0.008	470.9	49.73	240.4	3.65	3.45	3.81
07/23/2020 21:17	14.69	2.28	2.17	3.96	0.008	470.9	49.89	241.5	3.74	3.55	3.96
07/23/2020 21:18	14.64	2.24	2.11	3.94	0.008	469.5	49.61	238.9	3.86	3.64	4.04
Daily Average*	**14.65**	**2.31**	**2.18**	**3.98**	**0.008**	**470.6**	**49.75**	**239.9**	**3.68**	**3.47**	**3.85**
Maximum*	**14.69**	**2.49**	**2.35**	**4.43**	**0.009**	**472.9**	**50.12**	**241.7**	**4.14**	**3.91**	**4.36**
	07/23/2020 21:17	07/23/2020 20:12	07/23/2020 20:12	07/23/2020 20:18	07/23/2020 20:18	07/23/2020 20:52	07/23/2020 20:54	07/23/2020 20:56	07/23/2020 20:58	07/23/2020 20:58	07/23/2020 20:58
Minimum*	**14.61**	**2.13**	**2.01**	**3.47**	**0.007**	**467.2**	**49.27**	**237.4**	**3.28**	**3.10**	**3.44**
	07/23/2020 20:52	07/23/2020 20:58	07/23/2020 20:58	07/23/2020 20:58	07/23/2020 20:58	07/23/2020 20:13	07/23/2020 20:50	07/23/2020 20:11	07/23/2020 20:17	07/23/2020 20:17	07/23/2020 20:17

* Does not include Invalid Averaging Periods ("N/A")

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Average Values Report
Generated: 7/23/2020 23:17

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 2

Period Start: 7/23/2020 21:42
Period End: 7/23/2020 22:44
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/23/2020 21:42	14.64	2.29	2.16	3.94	0.008	469.0	49.81	238.7	3.46	3.26	3.60
07/23/2020 21:43	14.66	2.27	2.15	3.94	0.008	468.8	49.69	239.3	3.58	3.38	3.74
07/23/2020 21:44	14.67	2.30	2.18	3.94	0.008	468.8	49.88	239.7	3.65	3.46	3.84
07/23/2020 21:45	14.65	2.32	2.19	3.93	0.008	468.3	49.73	238.7	3.74	3.53	3.88
07/23/2020 21:46	14.63	2.33	2.19	3.94	0.008	469.3	49.68	238.5	3.69	3.47	3.84
07/23/2020 21:47	14.63	2.42	2.28	3.94	0.008	468.6	49.66	238.1	3.54	3.33	3.69
07/23/2020 21:48	14.70	2.42	2.30	3.92	0.008	466.1	49.39	239.5	3.57	3.40	3.72
07/23/2020 21:49	14.67	2.28	2.16	3.92	0.008	466.5	49.41	238.5	3.82	3.62	3.97
07/23/2020 21:50	14.60	2.28	2.14	3.94	0.008	469.5	49.61	237.4	3.77	3.53	3.89
07/23/2020 21:51	14.57	2.40	2.24	3.96	0.008	471.3	49.74	237.2	3.52	3.28	3.66
07/23/2020 21:52	14.57	2.42	2.26	3.96	0.008	471.4	49.83	237.3	3.38	3.15	3.51
07/23/2020 21:53	14.57	2.37	2.21	3.97	0.008	472.2	49.79	237.6	3.46	3.22	3.57
07/23/2020 21:54	14.56	2.34	2.18	3.95	0.008	470.3	49.50	236.3	3.53	3.29	3.65
07/23/2020 21:55	14.56	2.35	2.19	3.96	0.008	471.3	49.68	236.8	3.53	3.29	3.66
07/23/2020 21:56	14.55	2.36	2.19	3.97	0.008	473.0	49.79	237.3	3.49	3.24	3.63
07/23/2020 21:57	14.56	2.36	2.20	3.97	0.008	473.1	49.69	237.7	3.49	3.25	3.63
07/23/2020 21:58	14.59	2.30	2.15	3.96	0.008	471.9	49.78	238.2	3.64	3.40	3.77
07/23/2020 21:59	14.61	2.28	2.14	3.96	0.008	471.7	49.62	238.9	3.74	3.51	3.91
07/23/2020 22:00	14.62	2.32	2.18	3.96	0.008	471.7	49.71	239.3	3.81	3.58	3.96
07/23/2020 22:01	14.62	2.31	2.17	3.96	0.008	471.8	49.67	239.3	3.83	3.60	4.01
07/23/2020 22:02	14.64	2.28	2.15	3.96	0.008	471.6	49.84	240.0	3.88	3.66	4.06
07/23/2020 22:03	14.63	2.28	2.15	3.96	0.008	472.0	49.74	239.8	3.91	3.68	4.11
07/23/2020 22:04	14.65	2.29	2.16	3.96	0.008	472.0	49.75	240.6	3.94	3.72	4.11
07/23/2020 22:05	14.64	2.28	2.15	3.96	0.008	471.3	49.70	239.9	4.01	3.78	4.21
07/23/2020 22:06	14.64	2.25	2.12	3.96	0.008	471.6	49.78	240.0	4.06	3.83	4.26
07/23/2020 22:07	14.63	2.22	2.09	3.96	0.008	471.9	49.65	239.8	4.03	3.79	4.21
07/23/2020 22:08	14.62	2.23	2.10	3.97	0.008	472.4	49.90	239.6	3.94	3.70	4.12
07/23/2020 22:09	14.61	2.26	2.12	3.98	0.008	473.4	49.67	239.8	3.87	3.63	4.03
07/23/2020 22:10	14.61	2.28	2.14	3.96	0.008	471.9	49.61	239.0	3.82	3.58	3.96
07/23/2020 22:11	14.61	2.28	2.14	3.96	0.008	471.7	49.80	238.9	3.85	3.61	4.01
07/23/2020 22:12	14.61	2.27	2.13	3.97	0.008	472.7	49.81	239.4	3.86	3.62	4.02
07/23/2020 22:13	14.62	2.24	2.10	3.96	0.008	471.4	49.40	239.1	3.89	3.65	4.06
07/23/2020 22:14	14.64	2.24	2.11	3.96	0.008	471.4	49.70	239.9	3.90	3.68	4.06
07/23/2020 22:15	14.62	2.25	2.11	3.97	0.008	472.9	49.72	239.9	3.93	3.69	4.12
07/23/2020 22:16	14.58	2.23	2.08	3.97	0.008	472.7	49.70	238.3	3.92	3.66	4.07
07/23/2020 22:17	14.59	2.26	2.11	3.96	0.008	471.8	49.65	238.2	3.83	3.58	3.96
07/23/2020 22:18	14.60	2.36	2.21	3.96	0.008	471.4	49.53	238.4	3.69	3.46	3.86
07/23/2020 22:19	14.56	2.43	2.26	3.96	0.008	471.2	49.57	236.8	3.59	3.34	3.71
07/23/2020 22:20	14.55	2.42	2.25	3.96	0.008	471.9	49.44	236.7	3.50	3.25	3.62
07/23/2020 22:21	14.55	2.39	2.22	3.98	0.008	473.7	49.82	237.7	3.44	3.20	3.58
07/23/2020 22:22	14.55	2.33	2.16	3.98	0.008	473.8	49.84	237.7	3.48	3.23	3.63
07/23/2020 22:23	14.57	2.31	2.15	3.98	0.008	473.2	49.74	238.2	3.59	3.35	3.73
07/23/2020 22:24	14.58	2.30	2.15	3.97	0.008	472.3	49.86	238.1	3.69	3.44	3.82
07/23/2020 22:25	14.60	2.33	2.18	3.96	0.008	471.9	49.84	238.6	3.72	3.48	3.86
07/23/2020 22:26	14.60	2.34	2.19	3.97	0.008	472.5	49.70	238.9	3.76	3.52	3.92
07/23/2020 22:27	14.59	2.31	2.16	3.97	0.008	472.3	49.74	238.4	3.76	3.52	3.92
07/23/2020 22:28	14.61	2.37	2.22	3.96	0.008	471.4	49.69	238.8	3.71	3.48	3.86

2-NH3-2

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Version 47.0

Period Start:	Average 2_O2 %	Average 2_NOXPPM ppm	Average 2_NOX_CORR ppm	Average 2_NOX_LBHR #/hr	Average 2_NOX_LBMM #/MBTU	Average 2_GasFlow kscfh	Average 2_LOAD MW	Average 2_STACKFLW kscfm	Average 2_COPPM ppm	Average 2_CO_CORR ppm	Average 2_CO_LBHR #/hr
07/23/2020 22:29	14.62	2.35	2.21	3.96	0.008	471.7	49.68	239.3	3.75	3.52	3.91
07/23/2020 22:30	14.63	2.27	2.14	3.97	0.008	472.3	49.93	240.0	3.88	3.65	4.07
07/23/2020 22:31	14.64	2.23	2.10	3.98	0.008	473.5	49.75	241.0	4.03	3.80	4.23
07/23/2020 22:32	14.63	2.18	2.05	3.98	0.008	473.6	49.73	240.6	4.19	3.94	4.38
07/23/2020 22:33	14.64	2.10	1.98	3.48	0.007	473.6	49.89	241.0	4.38	4.13	4.62
07/23/2020 22:34	14.64	2.06	1.94	3.48	0.007	474.1	49.85	241.3	4.47	4.21	4.73
07/23/2020 22:35	14.63	2.08	1.96	3.49	0.007	474.2	49.81	240.9	4.43	4.17	4.68
07/23/2020 22:36	14.64	2.12	2.00	3.49	0.007	474.4	49.58	241.4	4.38	4.13	4.63
07/23/2020 22:37	14.65	2.18	2.06	3.98	0.008	473.8	49.90	241.5	4.25	4.01	4.48
07/23/2020 22:38	14.64	2.37	2.23	3.99	0.008	474.6	49.58	241.5	4.02	3.79	4.24
07/23/2020 22:39	14.62	2.48	2.33	4.48	0.009	474.6	49.74	240.7	3.76	3.53	3.94
07/23/2020 22:40	14.63	2.53	2.38	4.48	0.009	473.8	49.54	240.7	3.66	3.44	3.83
07/23/2020 22:41	14.63	2.59	2.44	4.49	0.009	474.7	49.76	241.2	3.62	3.41	3.79
07/23/2020 22:42	14.63	2.52	2.37	4.49	0.009	474.8	50.10	241.2	3.63	3.42	3.84
07/23/2020 22:43	14.63	2.34	2.20	3.99	0.008	475.4	49.64	241.6	3.78	3.56	3.99
07/23/2020 22:44	14.63	2.21	2.08	3.99	0.008	474.5	49.72	241.1	3.90	3.67	4.09
Daily Average*	**14.61**	**2.31**	**2.17**	**3.96**	**0.008**	**472.0**	**49.72**	**239.2**	**3.79**	**3.56**	**3.96**
Maximum*	**14.70**	**2.59**	**2.44**	**4.49**	**0.009**	**475.4**	**50.10**	**241.6**	**4.47**	**4.21**	**4.73**
	07/23/2020 21:48	07/23/2020 22:41	07/23/2020 22:41	07/23/2020 22:42	07/23/2020 22:42	07/23/2020 22:43	07/23/2020 22:42	07/23/2020 22:43	07/23/2020 22:34	07/23/2020 22:34	07/23/2020 22:34
Minimum*	**14.55**	**2.06**	**1.94**	**3.48**	**0.007**	**466.1**	**49.39**	**236.3**	**3.38**	**3.15**	**3.51**
	07/23/2020 22:22	07/23/2020 22:34	07/23/2020 22:34	07/23/2020 22:34	07/23/2020 22:36	07/23/2020 21:48	07/23/2020 21:48	07/23/2020 21:54	07/23/2020 21:52	07/23/2020 21:52	07/23/2020 21:52

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSION CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \%CO_2 + 0.32 * \%O_2 + 0.28 * \%N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$Ps = Pbar + \frac{Psg}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * (P_{bar} + \frac{\Delta H}{13.6}) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{lc} * \frac{T_{ref}}{528\ ^\circ R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack gas volumetric flow rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 \times T_s\ (V_m std)}{(1\text{-}Bwo)\ 0 \times Vs \times Ps \times Dn2} \times \frac{520°R}{T_{ref}}$$

VII. Particulate emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C \times Qsd \times (60\ min/hr)/(7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx \frac{1\ lb}{7000\ gr} \times F \times \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	= stack area, ft^2
B_{wo}	= flue gas moisture content, dimensionless
$C_{12\%CO2}$	= particulate grain loading, gr/dscf corrected to 12% CO_2
C	= particulate grain loading, gr/dscf
C_p	= pitot calibration factor, dimensionless
Dn	= nozzle diameter, in.
F	= fuel F-Factor, dscf/MMBtu @ 0% O_2
H	= orifice differential pressure, iwg
I	= % isokinetics
M_n	= mass of collected particulate, mg
M_i	= mass emission rate of specie i, lb/hr
MW	= molecular weight of flue gas, lb/lb-mole
M_{wi}	= molecular weight of specie i: SO_2: 64 NO_x: 46 CO: 28 HC: 16
0	= sample time, min.
ΔP	= average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	= barometric pressure, inches Hg
P_s	= stack absolute pressure, inches Hg
P_{sg}	= stack static pressure, iwb
Q	= wet stack flow rate at actual conditions, wacfm
Q_{sd}	= dry standard stack flow rate, dscfm
SV	= specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	= meter temperature, °R
T_{ref}	= reference temperature, °R
T_s	= stack temperature, °R
V_s	= stack gas velocity, ft/sec
V_{lc}	= volume of liquid collected in impingers, ml
V_m	= uncorrected dry meter volume, dcf
V_{mstd}	= dry meter volume at standard conditions, dscf
V_{wstd}	= volume of water vapor at standard conditions, scf
Y_d	= meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

MONTROSE AIR QUALITY SERVICES

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U2**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**SD**
Test Number	1-NH3-U2	2-NH3-U2	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	7/23/2020	7/23/2020			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	38-WCS	38-WCS			
Meter Calibration Factor	0.986	0.986			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.64	29.64			
Start/Stop Time	2010/2118	2141/2244			
Meter Volume (acf)	48.597	47.917			
Meter Temperature (°F)	73.9	72.9			
Meter Pressure (iwg)	2.0	2.0			
Liquid Volume (ml)	126.4	129.6			
Stack O_2 (%)	14.65	14.61	14.63	(from facility CEMS)	
Unit Load (MW)	50	50	49.7		
Standard Sample Volume (SCF)	46.458	45.894			
Moisture Fraction	0.112	0.116			
Stack Flow Rate (dscfm, 68 °F)	239,900	239,200	239,550	(from facility CEMS)	
Stack Flow Rate (@ Tref)	236,265	235,576	235,920		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	2,283	1,575			
Mass NH_3 (lb)	5.03E-06	3.47E-06			
NH_3 (ppmv, flue gas)	2.4	1.7	2.1	2.4	
NH_3 (ppmv @ O_2 Correction Factor)	2.3	1.6	1.9	2.3	5
NH_3 (lb/hr)	1.5	1.1	1.3	1.5	
NH_3 (lb/MMBtu)	0.003	0.002	0.003	0.003	
NH_3 (lb/MMSCF)	3.3	2.3	2.8	3.3	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

MONTROSE AIR QUALITY SERVICES

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U2

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	0.986
D	Barometric Pressure	" Hg	--	29.64
E	Meter Volume	acf	--	48.597
F	Meter Temperature	F	--	73.9
G	Meter Temperature	R	F + 460	533.9
H	Delta H	" H_2O	--	2.0
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	46.458
J	Liquid Collected	grams	--	126.4
K	Water vapor volume	scf	0.0472 * J * B/528	5.876
L	Moisture Content	--	K/(K + I)	0.112
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	239,900
T	Stack Flow Rate @ Tref	dscfm	S * B/528	236,265
U	Mass NH_3	ug	--	2,283
V	Mass NH_3	lb	U * Q	5.03E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^6)/(I * W)$	2.4
Y	Flue Gas O_2	%	--	14.65
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	2.3
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^6)$	1.5
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^6) * 20.9/(20.9 - Y)$	0.003
AC	NH_3	lb/MMSCF	AB * P	3.3

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements will be used.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 6, 2019

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2019, and ending September 30, 2020 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling	

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

190906 LapRenewalRev.doc

STAC
STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual Qi Certificate

CERTIFICATE OF COMPLETION

Sean Donovan

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2016-06

Tate Strickler, Accreditation Director

DATE OF ISSUE: 11/30/16

DATE OF EXPIRATION: 11/30/21

MONTROSE ENVIRONMENTAL

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 2, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555829 GENERATOR, 50.95 MW	D7	C9	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.2, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 2, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476657	C9	D7 C10			
SELECTIVE CATALYTIC REDUCTION, NO. 2, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476657 AMMONIA INJECTION	C10	C9 S12		**NH3**: 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.5, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 2, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555829	S12	C10			

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[**RULE 1110.2, 2-1-2008;** RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013**]

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

If the turbine is not in operation during one calendar year, then no testing is required during that calendar year.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the District within 60 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1, D7, D13, D19]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Sampling Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.1	4 hours	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. Sean Donovan
Title: Client Project Manager
Region: West
Email: SDonovan@montrose-env.com
Phone: (714) 279-6777

Name: Mr. Matt McCune
Title: Regional Vice President
Region: West
Email: MMccune@montrose-env.com
Phone: (714) 279-6777

TEST REPORT FOR
AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 3
FACILITY ID: 153992, DEVICE ID: D13

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Avenue
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 282-8240

John Groenenboom

Test Date: **October 13, 2020**
Production Date: **December 1, 2020**
Report Number: **W002AS-004299-RT-1759**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.

REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 12/1/2020

Name: John Groenenboom Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 12/1/2020

Name: Marshall Clark Title: Reporting/QC Specialist

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted the Canyon Power Plant to perform an ammonia slip test at Unit 3 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on October 13, 2020. The test was performed by John Groenenboom, Bryce Quinney, and David Hoang. John Groenenboom was the on-site Qualified Individual for MAQS. Ms. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 50 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS SUMMARY
CANYON POWER PLANT UNIT 3
OCTOBER 13, 2020

Parameter/Units	Result(1)	Limit
NH_3		
ppm	1.7	--
ppm @ 15% O_2	1.5	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1.

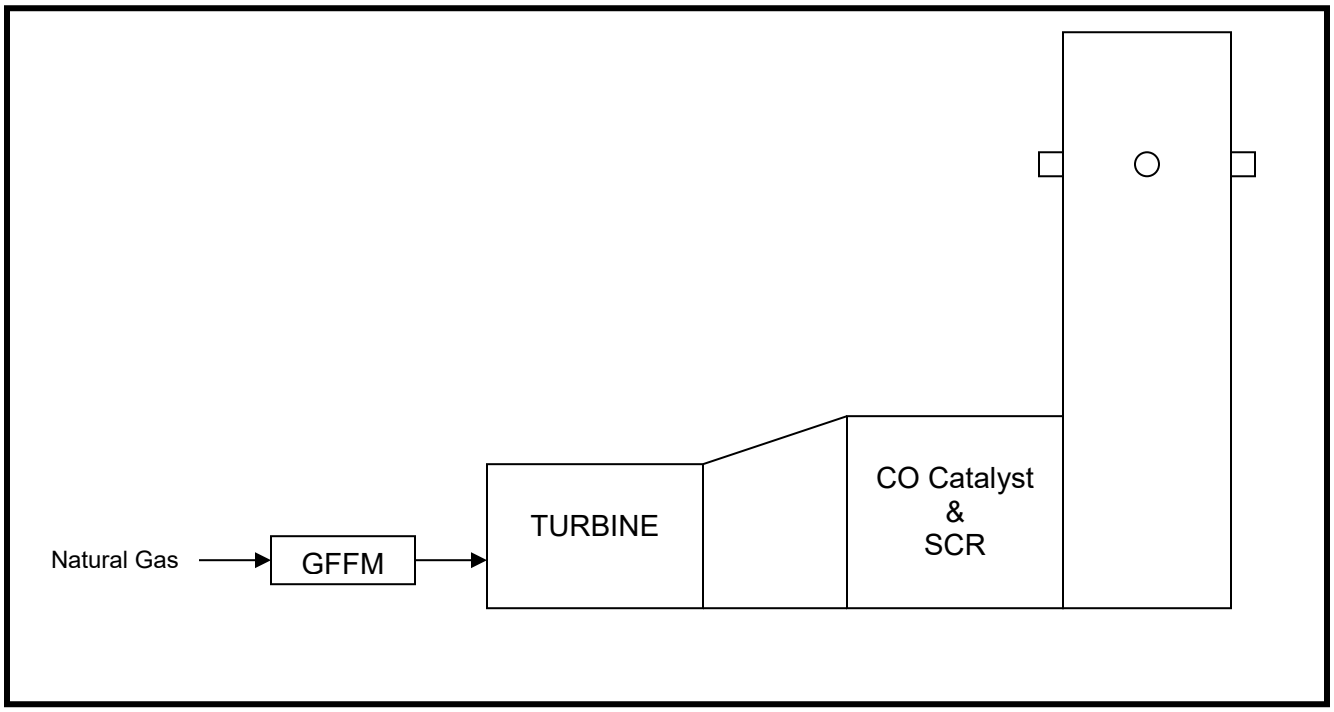
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT AND CEMS DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 50 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

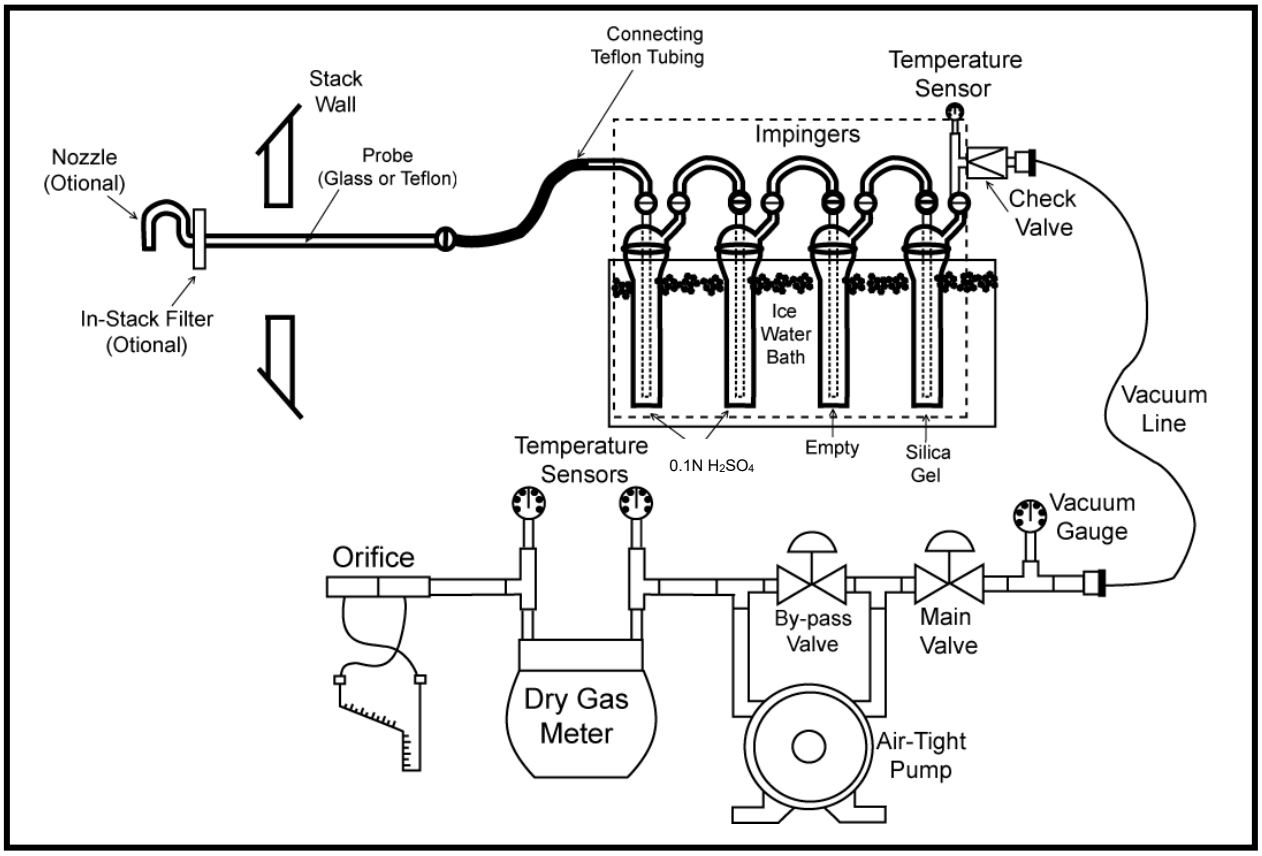
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a glass probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sample train.

Stack NO_x and O_2 concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLE TRAIN



4.0 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the maximum ammonia slip was 1.5 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT UNIT 3
OCTOBER 13, 2020

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U3	2-NH_3-U3			--
Date	10/13/2020	10/13/2020			--
Time	1813/1916	1947/2050			--
O_2, %(2)	14.54	14.51	14.53	--	--
Stack Flow, dscfm @ T_{ref}(2)	239,417	239,909	239,663	--	--
NO_x, ppmc(2)	2.4	2.3	2.3	--	2.5
NH_3					
ppm	1.7	1.6	1.6	1.7	--
ppm @ 15% O_2	1.5	1.5	1.5	1.5	5
lb/hr	1.1	1.0	1.1	1.1	--
lb/MMBtu	0.002	0.002	0.002	0.002	--
lb/MMSCF	2.2	2.1	2.2	2.2	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE AIR QUALITY

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 3
DATE: 10/13/2020
RUN NO: 1-N/H3-3
OPERATOR: BQ
METER BOX NO: 10-Pism
METER ΔH@: 1.699
METER Yd: 1.001
STACK AREA, FT²: 106.90
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= N/A X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: NO
Filter Condition after Test: N/A
Check Weight: 500.1 / 500.0

AMBIENT TEMPERATURE: 90°
BAROMETRIC PRESSURE: 29.68
ASSUMED MOISTURE: 10 %
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL: N/A / Glass
PROBE LENGTH: ~~BQ N/A~~ 6'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : <0.005 CFM@ 12 in. Hg.
POST-TEST LEAK RATE: : <0.005 CFM@ 12 in. Hg.
PITOT LEAK CHECK - PRE: N/A POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN FT
SAMPLER BQ
SAMPLE CUSTODIAN TT

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	919.7	716.7	
2	H_2SO_4	725.6	723.8	
3	MT	590.1	588.8	
4	SG	939.6	925.9	
—	LR	~~0~~	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	1813	976.200	N/A	1.5	N/A	N/A	N/A	50	90	86	5	14.8	N/A
2	18												
1	23												
E	1828	986.985		—				—	—	—	—		
3	1829	986.985		1.5				52	89	84	5		
2	34												
1	39												
E	1844	998.060		—				—	—	—	—		
3	1845	998.060		1.5				54	87	85	5		
2	50												
1	55												
E	1900	1008.985		—				—	—	—	—		
3	1901	1008.985		1.5				56	85	82	5		
2	06												
1	11												
E	1916	1019.858	↓	—	↓	↓	↓	—	—	—	—	↓	↓
Average:													

Comments:

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 3
DATE: 10-13-2020
RUN NO: 2-NH3-3
OPERATOR: BQ
METER BOX NO: 10 P&M
METER ΔH@: 1.699
METER Yd: 1.001
STACK AREA, FT²: 106.90
TRAVERSE POINTS, MIN/POINT: 5/12
ΔH= ✓ X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: NO
Filter Condition after Test: N/A
Check Weight: 500.1 / 500.0

AMBIENT TEMPERATURE: 75
BAROMETRIC PRESSURE: 29.68
ASSUMED MOISTURE: 10%
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL: N/A / Glass
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL: N/A
NOZZLE DIAMETER: N/A
FILTER NO/TYPE: N/A
PRE-TEST LEAK RATE: : ~~0.005~~ CFM@ 10 in. Hg.
POST-TEST LEAK RATE: ~~0.005~~ CFM@ 12 in. Hg.
PITOT LEAK CHECK - PRE: N/A POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN TT
SAMPLER BQ
SAMPLE CUSTODIAN TT

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H2SO4	933.1	731.4	
2	H2SO4	725.0	721.7	
3	MT	622.3	621.2	
4	SG	917.9	907.3	
	LR.	0	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
3	1947	20.850	N/A	1.5	N/A	N/A	N/A	50	81	76	6	14.8%	N/A
2	52												
1	57												
E	2002	31.570		–				–	–	–	–		
				~~1.5~~ BQ				~~52~~ BQ	~~80~~ BQ	~~75~~ BQ	~~6~~ BQ		
3	2003	31.570		1.5				52	80	75	6		
2	08												
1	13												
E	2018	42.475		–				–	–	–	–		
3	2019	42.475		1.5				53	78	74	6		
2	24												
1	29												
E	2034	53.275		–				–	–	–	–		
3	2035	53.275		1.5				54	77	73	7		
2	40												
1	45												
E	2050	63.915		–				–	–	–	–		
Average:													

Comments:

DS834048
Date of last revision 2/14/2017
Master Document Storage\Forms\Datasheets\Field Datasheets

1-NH3-U3

Point	Meter Volume	Delta H	Tm In	Tm Out
6	976.200	1.5	90	86
5			89	84
4			87	85
3			85	82
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	1019.858			
Result	**43.658**	**1.5**		**86.0**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	919.7	716.7	203.0
2	725.6	723.8	1.8
3	590.1	588.8	1.3
4	939.6	925.9	13.7
Line Rinse	0.0	100.0	-100.0
			119.8

2-NH3-U3

Point	Meter Volume	Delta H	Tm In	Tm Out
6	20.850	1.5	81	76
5			80	75
4			78	74
3			77	73
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	63.915			
Result	**43.065**	**1.5**		**76.8**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	933.1	731.4	201.7
2	725.0	721.7	3.3
3	622.3	621.2	1.1
4	917.9	907.3	10.6
Line Rinse	0.0	100.0	-100.0
			116.7

Appendix A.2
Laboratory Data

MONTROSE
AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: 002AS-080102 District Method: SCAQMD 207.1 Sample Date: 10/13/2020
Client/Location: SCPPA Calibration Date: 10/16/2020 Analysis Date: 10/16/2020
Sample Location: U3 Calibration Curve: y = -58.0294x + 104.0544 Analyst's Initials: HS
Test #'s: NH_3-U3 R^2: 1.0000 Room Temperature (C°): 20

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (C°)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml		19.0	29.222	28.992		19.2	Y		104.1
		19.4	28.762			19.2	Y		
1-NH_3-U3	637.4	89.0	1.817	1.810	1402.476	19.0	Y	<2	
		89.2	1.803			19.2	Y		
2-NH_3-U3	619.4	88.9	1.825	1.817	1368.289	19.1	Y	<2	
		89.1	1.810			19.2	Y		
Spike: 2-NH_3 +2ml 1000ppm NH_3		27.0	21.274	21.274		19.0	Y		101.1
		27.0	21.274			19.3	Y		
Standard Check: 28 µg NH3/ml		20.6	27.425	27.589		19.0	Y		99.1
		20.3	27.753			19.0	Y		
Reagent Blank 0.1N H2SO4		191.1	0.032	0.032		19.1	Y		
		191.5	0.031			19.3	Y		
DI H2O Blank		197.4	0.025	0.025		19.2	Y		
		197.7	0.024			19.4	Y		
Field Blank	426.4	187.8	0.036	0.036		19.1	Y		
		188.1	0.036			19.0	Y		
Standard Check: 28 µg NH3/ml		20.5	27.534	27.317		19.2	Y		98%
		20.9	27.100			19.0	Y		

Notes: Total volume of samples and standards used: 100ml
Volume of pH adjusting ISA used in ml: 2ml
Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)
Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2
µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV
mg / sample = µg /sample ÷ 1000
ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Client/ Location:	SCPPA
Sample Location:	U3
District Method:	SCAQMD 207.1
Sample Date:	10/13/2020
Analysis Date:	10/16/2020
Analyst's Initials:	HS
Calibration Curve Slope	-58.0294
Y-intercept	104.0544
R^2	

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	19.0	29.222				
repeat 28 ug NH_3/ml as N	19.4	28.762	28.992	NA	35.242	NA
1-NH3	89.0	1.817				
repeat 1- NH_3	89.2	1.803	1.810	637.4	2.200	1402.476
2-NH_3	88.9	1.825				
repeat 2- NH_3	89.1	1.810	1.817	619.4	2.209	1368.289
spike 2-NH_3	27.0	21.274				
repeat spike	27.0	21.274	21.274	NA	25.860	NA
28 NH_3/ml as N	20.6	27.425				
repeat 28 ug NH_3/ml as N	20.3	27.753	27.589	NA	33.536	NA
Field Blank	187.8	0.036				
repeat Field Blank	188.1	0.036	0.036	426.4	0.044	NA
Reagent Blank	191.1	0.032				
repeat Reagent Blank	191.5	0.031	0.032	NA	0.039	NA
DI H2O Blank	197.4	0.025				
Repeat DI H2O Blank	197.7	0.024	0.025	NA	0.030	NA
28 NH_3/ml as N	20.5	27.534				
repeat 28 ug NH_3/ml as N	20.9	27.100	27.317	NA	33.205	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Client/ Location: SCPPA
Sample Location: U3
District Method: SCAQMD 207.1
Sample Date: 10/13/2020
Analysis Date: 10/16/2020
Analyst's Initials: HS

Sample	% recovery	RPD %	RPA %
28 ug NH_3 / ml as N repeat 28 ug NH_3/ml as N	NA	1.59	3.543
1-NH3 repeat 1- NH3	NA	0.79	NA
2-NH3 repeat 2- NH3	NA	0.79	NA
spike 2-NH3 repeat spike	101.36	0.00	NA
28 NH_3/ml as N repeat 28 ug NH_3/ml as N	NA	-1.19	-1.469
Field Blank repeat Field Blank	NA	1.19	NA
Reagent Blank repeat Reagent Blank	NA	1.56	NA
DI H2O Blank Repeat DI H2O Blank	NA	1.17	NA
28 NH_3/ml as N repeat 28 ug NH_3/ml as N	NA	1.59	-2.440

Notes:

spike: 100 ml sample + 2 ml (1000 µg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (µg NH_3/ ml as N)

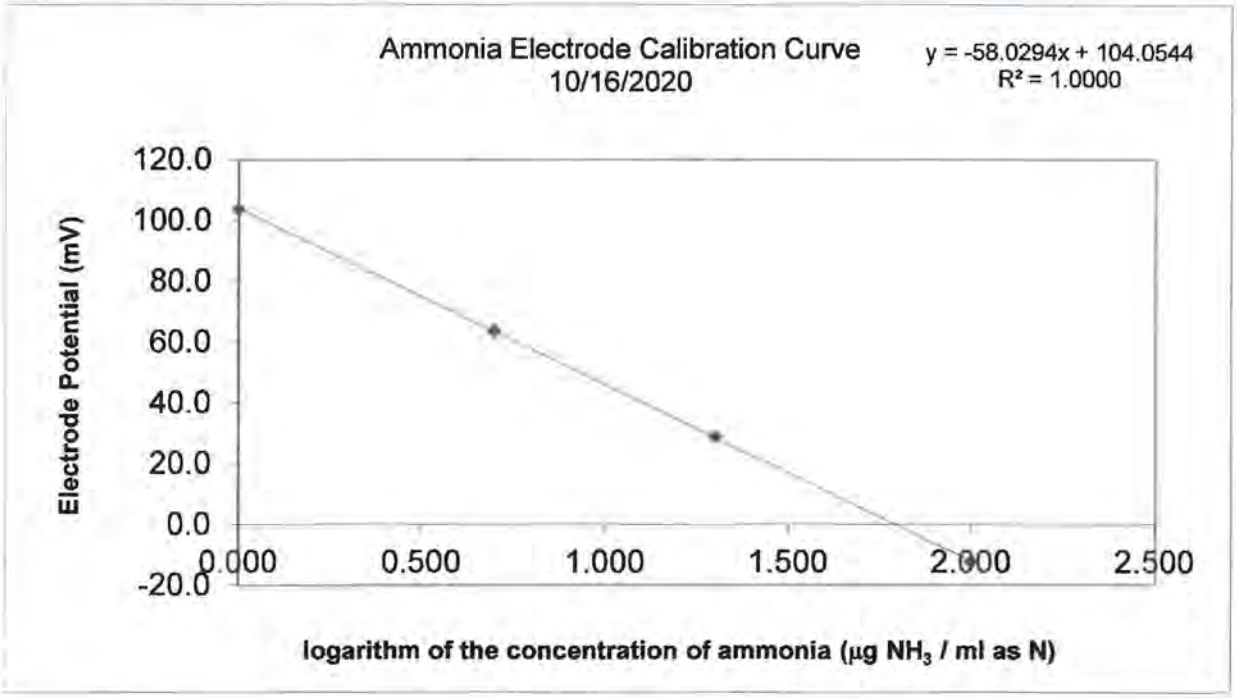
Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	103.8	19	20
5	0.699	63.7	19	20
20	1.301	28.9	19	20
100	2.000	-12.3	19	20



slope	-58.0294
y-intercept	104.0544

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	1.0101	0.0101	1.0144
5	4.9592	-0.0408	-0.8157
20	19.7292	-0.2708	-1.3541
100	101.1800	1.1800	1.1800

Calculation:

Regression Line: P=M*log(μg of NH_3/ ml as N)+B

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

MONTROSE
AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 10/16/2020

Calibration Curve: Y=-58.0294x+104.0544

R^2 1.0000

Analyst's Initials: HS

Thermometer #: 1

ISE Electrode #: 8

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	103.8	19	20
5	103.7	19	20
20	28.9	19	20
100	~~-18.~~ HS 10/16/20 -12.3	19	20

Notes:

Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.04 H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

Appendix A.3
QA/QC Data

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\10-P&M\2020\[Semi-Annual Meter Calibration -10-P&M 7-17-202(
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #:
ID #: 10 P&M
Date: 7/17/2020
Bar. Pressure: 30.00 (in. Hg)
Performed By: R. Howard
Meter Serial #: 13464167

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	696.000	701.203	5.203	76.0	76.0	76.0	76.0	33	0.1551	18.0	75.0	75.0	75.0
0.13	26.00	701.203	706.405	5.202	76.0	76.0	76.0	76.0	33	0.1551	18.0	75.0	75.0	75.0
0.13	26.00	706.405	711.610	5.205	76.0	76.0	76.0	76.0	33	0.1551	18.0	75.0	75.0	75.0
0.60	12.00	712.500	717.687	5.187	77.0	77.0	79.0	77.0	48	0.3345	16.0	75.0	75.0	75.0
0.60	12.00	717.687	722.872	5.185	79.0	77.0	79.0	78.0	48	0.3345	16.0	75.0	75.0	75.0
0.60	12.00	722.872	728.061	5.189	79.0	78.0	78.0	78.0	48	0.3345	16.0	75.0	75.0	75.0
1.70	7.00	729.000	734.573	5.573	82.0	79.0	85.0	79.0	63	0.5915	14.0	76.0	76.0	76.0
1.70	7.00	734.573	740.147	5.574	85.0	79.0	86.0	81.0	63	0.5915	14.0	76.0	76.0	76.0
1.70	7.00	740.147	745.719	5.571	86.0	81.0	86.0	81.0	63	0.5915	14.0	76.0	76.0	76.0
3.00	5.00	747.200	752.413	5.213	87.0	85.0	91.0	87.0	73	0.7678	13.0	76.0	76.0	76.0
3.00	5.00	752.413	757.629	5.216	91.0	87.0	92.0	89.0	73	0.7678	13.0	76.0	76.0	76.0
3.00	5.00	757.629	762.838	5.209	92.0	89.0	93.0	90.0	73	0.7678	13.0	76.0	76.0	76.0

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.139	145.5	5.230	148.1	5.288	1.018	1.785	**Pass**			
5.138	145.5	5.230	148.1	5.288	1.018	1.785	**Pass**			
5.141	145.6	5.230	148.1	5.288	1.017	1.785	**Pass**			
				Average	**1.018**	1.785		**Pass**	**Pass**	**Pass**
5.114	144.8	5.206	147.4	5.263	1.018	1.768	**Pass**			
5.105	144.6	5.206	147.4	5.263	1.020	1.766	**Pass**			
5.109	144.7	5.206	147.4	5.263	1.019	1.765	**Pass**			
				Average	**1.019**	**1.766**		**Pass**	**Pass**	**Pass**
5.474	155.0	5.366	152.0	5.435	0.980	1.600	**Pass**			
5.457	154.6	5.366	152.0	5.435	0.983	1.596	**Pass**			
5.447	154.3	5.366	152.0	5.435	0.985	1.593	**Pass**			
				Average	**0.983**	**1.596**		**Pass**	**Pass**	**Pass**
5.076	143.7	4.975	140.9	5.039	0.980	1.653	**Pass**			
5.058	143.2	4.975	140.9	5.039	0.984	1.647	**Pass**			
5.040	142.7	4.975	140.9	5.039	0.987	1.642	**Pass**			
				Average	**0.984**	**1.647**		**Pass**	**Pass**	**Pass**

Average Yd: **1.001** dH@: **1.699**

Q @ dH = 1: 0.575

SIGNED: Signature on File Date: 7/17/2020

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 3
DATE: 10/13/20
RUN NO: FB-NH3
OPERATOR: BQ
METER BOX NO: 10 PPM
METER ΔH@: 1.699
METER Yd: 1.001
STACK AREA, FT²: NA
TRAVERSE POINTS, MIN/POINT: NA
ΔH= NA X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.1 / 500.0

AMBIENT TEMPERATURE: 75°
BAROMETRIC PRESSURE: 29.68
ASSUMED MOISTURE: NA
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / glass
PROBE LENGTH: 6
NOZZLE ID NO/ MATERIAL: NA
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : <0.005 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : CFM@ in. Hg.
PITOT LEAK CHECK - PRE: POST:
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER BQ
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	815.2	714.9	
2	H_2SO_4	719.7	719.7	
3	MT	615.5	615.5	
4	SG	923.1	923.0	
LR			100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
Average:													

Field Blank

Comments:

DS834048
Date of last revision 2/14/2017
Master Document Storage\Forms\Datasheets\Field Datasheets

CHAIN OF CUSTODY

CLIENT: SCPPA | PROJECT #: W002AS-680102 | TEST DATE(S): 10/13/2020

LOCATION: U3 | SAMPLER(S): BQ/DH

SAMPLE LOCATION: Stack | PROJECT MANAGER: JG

TEST METHOD(S): SCAQMD 207.1 | DATE DUE: 10/20/2020

OUTSIDE LAB REQUIRED?: No | COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
10/13/2020	1813/1916	1-NH3-U3	Probe, Line, Impingers	1	BQ/DH	
10/13/2020	1947/2050	2-NH3-U3	Probe, Line, Impingers	1	BQ/DH	
10/13/2020		Reagent Blank	0.1 N H_2SO_4	1	JG	
10/13/2020		Reagent Blank	DI H2O	1	JG	
10/13/2020		Field Blank	Probe, Line, Impingers	1	BQ/DH	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	10/14/20 1850		10/14/20 1850
	10/14/20 1940		10/15/20 0820

ANALYSIS REQUIRED: NH_3 by SCAQMD 207.1 (ISE)

APPENDIX B
FACILITY CEMS DATA

1-NH3

CEMTEK KVB-Enertec NetDAHS© Version 47.0

Average Values Report
Generated: 10/13/2020 20:16

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.
City/St: Anaheim, CA, 92806
Source: 3

Period Start: 10/13/2020 18:13
Period End: 10/13/2020 19:16
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_COPPM ppm	Average 3_CO_CORR ppm	Average 3_CO_LBHR #/hr	Average 3_CO_LBMM #/MBTU	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2020 18:13	14.55	2.47	2.29	4.07	0.008	4.07	3.78	4.33	0.0085	484.9	49.64	243.2
10/13/2020 18:14	14.55	2.44	2.27	4.07	0.008	4.12	3.83	4.38	0.0086	485.0	49.58	243.3
10/13/2020 18:15	14.55	2.40	2.23	4.08	0.008	4.19	3.89	4.43	0.0087	485.1	49.76	243.4
10/13/2020 18:16	14.56	2.38	2.21	4.08	0.008	4.20	3.91	4.48	0.0088	485.1	49.53	243.8
10/13/2020 18:17	14.56	2.36	2.20	4.07	0.008	4.21	3.92	4.48	0.0088	484.7	49.57	243.5
10/13/2020 18:18	14.56	2.41	2.24	4.07	0.008	4.16	3.87	4.43	0.0087	484.9	49.68	243.6
10/13/2020 18:19	14.56	2.50	2.33	4.58	0.009	4.07	3.79	4.33	0.0085	484.8	49.63	243.6
10/13/2020 18:20	14.56	2.54	2.36	4.58	0.009	3.99	3.71	4.23	0.0083	485.1	49.54	243.8
10/13/2020 18:21	14.53	2.50	2.32	4.59	0.009	3.97	3.68	4.18	0.0082	485.3	49.82	242.7
10/13/2020 18:22	14.54	2.53	2.35	4.58	0.009	3.91	3.63	4.13	0.0081	485.0	49.80	243.0
10/13/2020 18:23	14.54	2.58	2.39	4.58	0.009	3.88	3.60	4.13	0.0081	485.1	49.75	243.0
10/13/2020 18:24	14.53	2.58	2.39	4.59	0.009	3.87	3.58	4.08	0.0080	485.4	49.80	242.8
10/13/2020 18:25	14.53	2.59	2.40	4.59	0.009	3.86	3.58	4.08	0.0080	485.3	49.62	242.7
10/13/2020 18:26	14.54	2.59	2.40	4.59	0.009	3.85	3.57	4.08	0.0080	485.4	49.73	243.1
10/13/2020 18:27	14.53	2.59	2.40	4.59	0.009	3.87	3.58	4.08	0.0080	485.8	49.60	243.0
10/13/2020 18:28	14.51	2.54	2.35	4.59	0.009	3.84	3.55	4.08	0.0080	485.7	49.49	242.1
10/13/2020 18:29	14.52	2.52	2.33	4.59	0.009	3.75	3.47	3.98	0.0078	485.6	49.72	242.5
10/13/2020 18:30	14.52	2.53	2.34	4.59	0.009	3.72	3.44	3.93	0.0077	485.5	49.71	242.4
10/13/2020 18:31	14.54	2.48	2.30	4.08	0.008	3.78	3.51	4.03	0.0079	485.6	49.70	243.2
10/13/2020 18:32	14.55	2.45	2.28	4.07	0.008	3.80	3.53	4.02	0.0079	485.0	49.67	243.3
10/13/2020 18:33	14.56	2.46	2.29	4.07	0.008	3.87	3.60	4.12	0.0081	484.8	49.82	243.6
10/13/2020 18:34	14.56	2.32	2.16	4.07	0.008	4.07	3.79	4.33	0.0085	484.9	49.83	243.6
10/13/2020 18:35	14.56	2.21	2.06	4.08	0.008	4.29	3.99	4.59	0.0090	485.2	49.60	243.8
10/13/2020 18:36	14.55	2.19	2.03	3.57	0.007	4.35	4.04	4.64	0.0091	485.2	49.64	243.4
10/13/2020 18:37	14.54	2.16	2.00	3.57	0.007	4.41	4.09	4.69	0.0092	485.2	49.60	243.1
10/13/2020 18:38	14.55	2.14	1.99	3.57	0.007	4.42	4.11	4.69	0.0092	485.2	49.55	243.4
10/13/2020 18:39	14.54	2.29	2.12	4.08	0.008	4.32	4.01	4.59	0.0090	485.5	49.68	243.2
10/13/2020 18:40	14.54	3.13	2.90	5.60	0.011	3.96	3.67	4.18	0.0082	485.2	49.66	243.1
10/13/2020 18:41	14.55	3.44	3.20	6.12	0.012	3.53	3.28	3.77	0.0074	485.3	49.67	243.5
10/13/2020 18:42	14.54	2.73	2.53	4.59	0.009	3.30	3.06	3.52	0.0069	485.4	49.60	243.1
10/13/2020 18:43	14.54	2.51	2.33	4.59	0.009	3.37	3.13	3.57	0.0070	485.5	49.66	243.2
10/13/2020 18:44	14.52	3.00	2.77	5.11	0.010	3.53	3.26	3.73	0.0073	486.2	49.81	242.8
10/13/2020 18:45	14.47	3.08	2.83	5.11	0.010	3.63	3.33	3.83	0.0075	486.4	49.78	241.0
10/13/2020 18:46	14.49	2.99	2.75	5.10	0.010	3.73	3.43	3.93	0.0077	486.1	49.65	241.6
10/13/2020 18:47	14.51	2.71	2.50	4.59	0.009	3.83	3.54	4.03	0.0079	485.7	49.58	242.1
10/13/2020 18:48	14.51	2.56	2.36	4.59	0.009	3.91	3.61	4.13	0.0081	485.4	49.69	242.0
10/13/2020 18:49	14.52	2.58	2.39	4.59	0.009	3.91	3.62	4.13	0.0081	485.2	49.82	242.3
10/13/2020 18:50	14.54	2.56	2.37	4.59	0.009	3.93	3.65	4.18	0.0082	485.3	49.75	243.1
10/13/2020 18:51	14.55	2.51	2.33	4.59	0.009	4.00	3.72	4.23	0.0083	485.2	49.66	243.4
10/13/2020 18:52	14.57	2.48	2.31	4.58	0.009	4.07	3.79	4.33	0.0085	485.1	49.60	244.2
10/13/2020 18:53	14.57	2.44	2.27	4.08	0.008	4.13	3.85	4.38	0.0086	485.2	49.83	244.2
10/13/2020 18:54	14.57	2.40	2.24	4.07	0.008	4.25	3.96	4.53	0.0089	485.0	49.60	244.1
10/13/2020 18:55	14.57	2.36	2.20	4.08	0.008	4.31	4.02	4.59	0.0090	485.2	49.75	244.2
10/13/2020 18:56	14.56	2.36	2.20	4.08	0.008	4.29	3.99	4.59	0.0090	485.3	49.59	243.9
10/13/2020 18:57	14.55	2.41	2.24	4.08	0.008	4.12	3.83	4.39	0.0086	485.8	49.81	243.7
10/13/2020 18:58	14.55	2.46	2.29	4.08	0.008	3.98	3.70	4.23	0.0083	485.6	49.68	243.6
10/13/2020 18:59	14.55	2.48	2.30	4.08	0.008	3.89	3.61	4.13	0.0081	485.4	49.47	243.5
10/13/2020 19:00	14.54	2.51	2.33	4.59	0.009	3.84	3.56	4.08	0.0080	485.9	49.66	243.4
10/13/2020 19:01	14.53	2.53	2.34	4.59	0.009	3.85	3.57	4.08	0.0080	486.0	49.72	243.1
10/13/2020 19:02	14.53	2.50	2.32	4.59	0.009	3.89	3.60	4.13	0.0081	485.5	49.68	242.8
10/13/2020 19:03	14.53	2.50	2.32	4.59	0.009	3.94	3.65	4.18	0.0082	485.8	49.75	243.0
10/13/2020 19:04	14.53	2.49	2.31	4.08	0.008	3.93	3.64	4.18	0.0082	485.9	49.77	243.0

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_COPPM ppm	Average 3_CO_CORR ppm	Average 3_CO_LBHR #/hr	Average 3_CO_LBMM #/MBTU	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2020 19:05	14.53	2.48	2.30	4.08	0.008	3.94	3.65	4.18	0.0082	485.6	49.52	242.9
10/13/2020 19:06	14.53	2.48	2.30	4.08	0.008	3.94	3.65	4.18	0.0082	485.9	49.59	243.0
10/13/2020 19:07	14.52	2.48	2.29	4.09	0.008	3.92	3.63	4.15	0.0081	487.4	50.01	243.4
10/13/2020 19:08	14.51	2.52	2.33	4.62	0.009	3.87	3.57	4.10	0.0080	488.6	50.05	243.6
10/13/2020 19:09	14.50	2.63	2.42	4.61	0.009	3.74	3.45	3.95	0.0077	488.3	49.94	243.1
10/13/2020 19:10	14.50	2.80	2.58	5.13	0.010	3.57	3.29	3.79	0.0074	488.2	50.01	243.0
10/13/2020 19:11	14.50	2.89	2.66	5.12	0.010	3.49	3.22	3.69	0.0072	487.8	49.83	242.8
10/13/2020 19:12	14.50	2.77	2.55	4.61	0.009	3.56	3.28	3.79	0.0074	487.9	49.77	242.9
10/13/2020 19:13	14.51	2.70	2.49	4.60	0.009	3.64	3.36	3.84	0.0075	487.1	49.77	242.9
10/13/2020 19:14	14.51	2.63	2.43	4.62	0.009	3.69	3.41	3.90	0.0076	488.5	49.85	243.5
10/13/2020 19:15	14.51	2.61	2.41	4.61	0.009	3.71	3.43	3.95	0.0077	488.0	49.99	243.3
10/13/2020 19:16	14.50	2.64	2.43	4.61	0.009	3.71	3.42	3.94	0.0077	487.4	49.83	242.6
Daily Average*	**14.54**	**2.55**	**2.36**	**4.44**	**0.009**	**3.92**	**3.63**	**4.16**	**0.0081**	**485.8**	**49.71**	**243.1**
Maximum*	**14.57**	**3.44**	**3.20**	**6.12**	**0.012**	**4.42**	**4.11**	**4.69**	**0.0092**	**488.6**	**50.05**	**244.2**
	10/13/2020 18:55	10/13/2020 18:41	10/13/2020 18:41	10/13/2020 18:41	10/13/2020 18:41	10/13/2020 18:38	10/13/2020 18:38	10/13/2020 18:38	10/13/2020 18:38	10/13/2020 19:08	10/13/2020 19:08	10/13/2020 18:55
Minimum*	**14.47**	**2.14**	**1.99**	**3.57**	**0.007**	**3.30**	**3.06**	**3.52**	**0.0069**	**484.7**	**49.47**	**241.0**
	10/13/2020 18:45	10/13/2020 18:38	10/13/2020 18:38	10/13/2020 18:38	10/13/2020 18:38	10/13/2020 18:42	10/13/2020 18:42	10/13/2020 18:42	10/13/2020 18:42	10/13/2020 18:17	10/13/2020 18:59	10/13/2020 18:45

* Does not include Invalid Averaging Periods ("N/A")

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Average Values Report
Generated: 10/13/2020 22:02

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA. 92806
Source: 3

Period Start: 10/13/2020 19:47
Period End: 10/13/2020 20:50
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_COPPM ppm	Average 3_CO_CORR ppm	Average 3_CO_LBHR #/hr	Average 3_CO_LBMM #/MBTU	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2020 19:47	14.51	2.42	2.23	4.10	0.008	3.85	3.55	4.10	0.0080	487.8	49.79	243.2
10/13/2020 19:48	14.51	2.41	2.23	4.10	0.008	3.85	3.55	4.10	0.0080	487.7	49.89	243.1
10/13/2020 19:49	14.51	2.41	2.23	4.10	0.008	3.86	3.56	4.10	0.0080	488.3	49.95	243.4
10/13/2020 19:50	14.50	2.41	2.22	4.10	0.008	3.88	3.58	4.10	0.0080	488.1	49.78	243.0
10/13/2020 19:51	14.50	2.40	2.21	4.10	0.008	3.90	3.60	4.15	0.0081	488.4	49.88	243.1
10/13/2020 19:52	14.51	2.41	2.23	4.10	0.008	3.87	3.57	4.10	0.0080	488.3	49.85	243.4
10/13/2020 19:53	14.51	2.45	2.26	4.10	0.008	3.81	3.52	4.05	0.0079	488.4	49.80	243.5
10/13/2020 19:54	14.51	2.49	2.30	4.10	0.008	3.75	3.46	4.00	0.0078	488.3	49.71	243.4
10/13/2020 19:55	14.51	2.50	2.31	4.61	0.009	3.71	3.43	3.95	0.0077	488.2	49.84	243.4
10/13/2020 19:56	14.51	2.49	2.30	4.10	0.008	3.70	3.42	3.95	0.0077	488.2	49.96	243.4
10/13/2020 19:57	14.51	2.50	2.31	4.61	0.009	3.70	3.42	3.95	0.0077	488.2	49.97	243.4
10/13/2020 19:58	14.51	2.50	2.31	4.61	0.009	3.70	3.42	3.95	0.0077	488.1	49.92	243.3
10/13/2020 19:59	14.51	2.52	2.33	4.61	0.009	3.69	3.41	3.90	0.0076	488.3	49.90	243.4
10/13/2020 20:00	14.51	2.54	2.35	4.61	0.009	3.68	3.40	3.90	0.0076	488.1	49.81	243.3
10/13/2020 20:01	14.51	2.53	2.34	4.62	0.009	3.71	3.43	3.95	0.0077	488.4	49.70	243.5
10/13/2020 20:02	14.51	2.52	2.33	4.62	0.009	3.74	3.45	3.95	0.0077	488.8	50.01	243.7
10/13/2020 20:03	14.51	2.48	2.29	4.11	0.008	3.75	3.46	4.00	0.0078	488.8	49.91	243.7
10/13/2020 20:04	14.51	2.48	2.29	4.10	0.008	3.73	3.44	3.95	0.0077	488.6	49.85	243.6
10/13/2020 20:05	14.51	2.49	2.30	4.10	0.008	3.73	3.44	3.95	0.0077	488.5	49.94	243.5
10/13/2020 20:06	14.51	2.47	2.28	4.10	0.008	3.74	3.45	3.95	0.0077	488.2	49.78	243.4
10/13/2020 20:07	14.51	2.47	2.28	4.10	0.008	3.74	3.45	3.95	0.0077	488.6	49.78	243.6
10/13/2020 20:08	14.51	2.49	2.30	4.11	0.008	3.75	3.46	4.00	0.0078	488.8	50.00	243.7
10/13/2020 20:09	14.50	2.48	2.29	4.10	0.008	3.75	3.46	4.00	0.0078	488.6	49.86	243.2
10/13/2020 20:10	14.51	2.48	2.29	4.11	0.008	3.77	3.48	4.00	0.0078	488.8	49.69	243.7
10/13/2020 20:11	14.51	2.47	2.28	4.10	0.008	3.79	3.50	4.05	0.0079	488.6	49.91	243.6
10/13/2020 20:12	14.50	2.48	2.29	4.10	0.008	3.80	3.50	4.05	0.0079	488.5	50.00	243.1
10/13/2020 20:13	14.51	2.49	2.30	4.11	0.008	3.79	3.50	4.06	0.0079	488.9	49.99	243.7
10/13/2020 20:14	14.51	2.48	2.29	4.11	0.008	3.79	3.50	4.06	0.0079	489.0	49.80	243.8
10/13/2020 20:15	14.51	2.50	2.31	4.62	0.009	3.79	3.50	4.06	0.0079	488.9	49.93	243.7
10/13/2020 20:16	14.51	2.50	2.31	4.62	0.009	3.79	3.50	4.06	0.0079	488.9	50.03	243.7
10/13/2020 20:17	14.51	2.50	2.31	4.62	0.009	3.79	3.50	4.05	0.0079	488.7	50.01	243.6
10/13/2020 20:18	14.51	2.49	2.30	4.11	0.008	3.79	3.50	4.06	0.0079	488.9	49.90	243.7
10/13/2020 20:19	14.51	2.49	2.30	4.11	0.008	3.79	3.50	4.05	0.0079	488.8	49.74	243.7
10/13/2020 20:20	14.51	2.49	2.30	4.11	0.008	3.79	3.50	4.06	0.0079	489.0	50.11	243.8
10/13/2020 20:21	14.50	2.48	2.29	4.11	0.008	3.81	3.51	4.06	0.0079	488.9	49.89	243.3
10/13/2020 20:22	14.51	2.48	2.29	4.11	0.008	3.83	3.54	4.06	0.0079	488.9	49.84	243.7
10/13/2020 20:23	14.51	2.49	2.30	4.11	0.008	3.81	3.52	4.05	0.0079	488.8	49.98	243.7
10/13/2020 20:24	14.51	2.49	2.30	4.11	0.008	3.79	3.50	4.05	0.0079	488.8	49.91	243.7
10/13/2020 20:25	14.51	2.47	2.28	4.11	0.008	3.77	3.48	4.00	0.0078	488.9	49.98	243.7
10/13/2020 20:26	14.50	2.48	2.29	4.11	0.008	3.75	3.46	4.01	0.0078	489.0	49.89	243.4
10/13/2020 20:27	14.50	2.51	2.31	4.62	0.009	3.75	3.46	4.01	0.0078	489.2	49.95	243.5
10/13/2020 20:28	14.50	2.52	2.32	4.62	0.009	3.76	3.47	4.00	0.0078	488.9	49.92	243.3
10/13/2020 20:29	14.50	2.51	2.31	4.62	0.009	3.79	3.49	4.00	0.0078	488.9	49.88	243.3
10/13/2020 20:30	14.51	2.49	2.30	4.11	0.008	3.80	3.51	4.06	0.0079	489.4	49.90	244.0
10/13/2020 20:31	14.51	2.50	2.31	4.62	0.009	3.78	3.49	4.01	0.0078	489.1	49.88	243.9
10/13/2020 20:32	14.51	2.61	2.41	4.61	0.009	3.65	3.37	3.90	0.0076	488.1	50.01	243.3
10/13/2020 20:33	14.51	2.74	2.53	4.62	0.009	3.53	3.26	3.75	0.0073	488.9	50.07	243.7
10/13/2020 20:34	14.51	2.65	2.45	4.62	0.009	3.61	3.33	3.85	0.0075	489.2	49.83	243.9
10/13/2020 20:35	14.51	2.45	2.26	4.11	0.008	3.78	3.49	4.01	0.0078	489.2	49.88	243.9
10/13/2020 20:36	14.51	2.36	2.18	4.11	0.008	3.83	3.54	4.06	0.0079	489.8	49.89	244.2
10/13/2020 20:37	14.52	2.33	2.15	4.09	0.008	3.82	3.53	4.04	0.0079	486.5	49.79	242.9
10/13/2020 20:38	14.53	2.46	2.28	4.11	0.008	3.74	3.46	4.01	0.0078	489.2	49.90	244.7

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Period Start:	Average 3_O2 %	Average 3_NOXPPM ppm	Average 3_NOX_CORR ppm	Average 3_NOX_LBHR #/hr	Average 3_NOX_LBMM #/MBTU	Average 3_COPPM ppm	Average 3_CO_CORR ppm	Average 3_CO_LBHR #/hr	Average 3_CO_LBMM #/MBTU	Average 3_GasFlow kscfh	Average 3_LOAD MW	Average 3_STACKFLW kscfm
10/13/2020 20:39	14.51	2.54	2.35	4.62	0.009	3.71	3.43	3.95	0.0077	488.8	49.94	243.7
10/13/2020 20:40	14.50	2.50	2.30	4.11	0.008	3.75	3.46	4.00	0.0078	488.9	49.81	243.3
10/13/2020 20:41	14.50	2.44	2.25	4.11	0.008	3.85	3.55	4.11	0.0080	489.0	49.89	243.4
10/13/2020 20:42	14.51	2.43	2.24	4.11	0.008	3.86	3.56	4.11	0.0080	489.0	49.91	243.8
10/13/2020 20:43	14.51	2.44	2.25	4.10	0.008	3.83	3.54	4.05	0.0079	488.6	49.95	243.6
10/13/2020 20:44	14.52	2.47	2.28	4.11	0.008	3.79	3.50	4.06	0.0079	489.5	49.80	244.4
10/13/2020 20:45	14.51	2.48	2.29	4.10	0.008	3.78	3.49	4.00	0.0078	488.4	49.87	243.5
10/13/2020 20:46	14.52	2.48	2.29	4.11	0.008	3.77	3.49	4.01	0.0078	489.0	49.92	244.3
10/13/2020 20:47	14.52	2.48	2.29	4.11	0.008	3.77	3.49	4.01	0.0078	489.2	49.93	244.3
10/13/2020 20:48	14.51	2.48	2.29	4.11	0.008	3.79	3.50	4.06	0.0079	489.3	50.07	244.0
10/13/2020 20:49	14.52	2.48	2.29	4.11	0.008	3.80	3.51	4.06	0.0079	489.0	50.02	244.2
10/13/2020 20:50	14.52	2.50	2.31	4.63	0.009	3.79	3.50	4.06	0.0079	489.6	49.85	244.5
Daily Average*	**14.51**	**2.48**	**2.29**	**4.26**	**0.008**	**3.77**	**3.48**	**4.02**	**0.0078**	**488.7**	**49.90**	**243.6**
Maximum*	**14.53**	**2.74**	**2.53**	**4.63**	**0.009**	**3.90**	**3.60**	**4.15**	**0.0081**	**489.8**	**50.11**	**244.7**
	10/13/2020 20:38	10/13/2020 20:33	10/13/2020 20:33	10/13/2020 20:50	10/13/2020 20:50	10/13/2020 19:51	10/13/2020 19:51	10/13/2020 19:51	10/13/2020 19:51	10/13/2020 20:36	10/13/2020 20:20	10/13/2020 20:38
Minimum*	**14.50**	**2.33**	**2.15**	**4.09**	**0.008**	**3.53**	**3.26**	**3.75**	**0.0073**	**486.5**	**49.69**	**242.9**
	10/13/2020 20:41	10/13/2020 20:37	10/13/2020 20:37	10/13/2020 20:37	10/13/2020 20:49	10/13/2020 20:33	10/13/2020 20:33	10/13/2020 20:33	10/13/2020 20:33	10/13/2020 20:37	10/13/2020 20:10	10/13/2020 20:37

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSION CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \%CO_2 + 0.32 * \%O_2 + 0.28 * \%N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$Ps = Pbar + \frac{Psg}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * (P_{bar} + \frac{\Delta H}{13.6}) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{lc} * \frac{T_{ref}}{528\ ^\circ R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack gas volumetric flow rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 \text{ x } T_s \text{ } (V_m std)}{(1\text{-}Bwo) \text{ } 0 \text{ x } Vs \text{ x } Ps \text{ x } Dn2} \text{ x } \frac{520°R}{T_{ref}}$$

VII. Particulate emissions

(a) Grain loading, gr/dscf
$C = 0.01543 \ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C \ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
M = C x Qsd x (60 min/hr)/(7000 gr/lb)

(d) Particulate emission factor

$$lb/10^6 \text{ Btu} = Cx \frac{1 \text{ lb}}{7000 \text{ gr}} \text{ x F x } \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	= stack area, ft^2
B_{wo}	= flue gas moisture content, dimensionless
$C_{12\%CO2}$	= particulate grain loading, gr/dscf corrected to 12% CO_2
C	= particulate grain loading, gr/dscf
C_p	= pitot calibration factor, dimensionless
Dn	= nozzle diameter, in.
F	= fuel F-Factor, dscf/MMBtu @ 0% O_2
H	= orifice differential pressure, iwg
I	= % isokinetics
M_n	= mass of collected particulate, mg
M_i	= mass emission rate of specie i, lb/hr
MW	= molecular weight of flue gas, lb/lb-mole
M_{wi}	= molecular weight of specie i: SO_2: 64 NO_x: 46 CO: 28 HC: 16
0	= sample time, min.
ΔP	= average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	= barometric pressure, inches Hg
P_s	= stack absolute pressure, inches Hg
P_{sg}	= stack static pressure, iwb
Q	= wet stack flow rate at actual conditions, wacfm
Q_{sd}	= dry standard stack flow rate, dscfm
SV	= specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	= meter temperature, °R
T_{ref}	= reference temperature, °R
T_s	= stack temperature, °R
V_s	= stack gas velocity, ft/sec
V_{lc}	= volume of liquid collected in impingers, ml
V_m	= uncorrected dry meter volume, dcf
V_{mstd}	= dry meter volume at standard conditions, dscf
V_{wstd}	= volume of water vapor at standard conditions, scf
Y_d	= meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U3

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	1.001
D	Barometric Pressure	" Hg	--	29.68
E	Meter Volume	acf	--	43.658
F	Meter Temperature	F	--	86.0
G	Meter Temperature	R	F + 460	546.0
H	Delta H	" H_2O	--	1.5
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	41.437
J	Liquid Collected	grams	--	119.8
K	Water vapor volume	scf	0.0472 * J * B/528	5.569
L	Moisture Content	--	K/(K + I)	0.118
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	243,100
T	Stack Flow Rate @ Tref	dscfm	S * B/528	239,417
U	Mass NH_3	ug	--	1,402
V	Mass NH_3	lb	U * Q	3.09E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^D)/(I * W)$	1.7
Y	Flue Gas O_2	%	--	14.54
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.5
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^D)$	1.1
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^D) * 20.9/(20.9 - Y)$	0.002
AC	NH_3	lb/MMSCF	AB * P	2.2

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U3**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**JG**
Test Number	1-NH3-U3	2-NH3-U3	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	10/13/2020	10/13/2020			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	10-P&M	10-P&M			
Meter Calibration Factor	1.001	1.001			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.68	29.68			
Start/Stop Time	1813/1916	1947/2050			
Meter Volume (acf)	43.658	43.065			
Meter Temperature (°F)	86.0	76.8			
Meter Pressure (iwg)	1.5	1.5			
Liquid Volume (ml)	119.8	116.7			
Stack O_2 (%)	14.54	14.51	14.53	(from facility CEMS)	
Unit Load (MW)	50	50	49.8		
Standard Sample Volume (SCF)	41.437	41.575			
Moisture Fraction	0.118	0.115			
Stack Flow Rate (dscfm, 68 °F)	243,100	243,600	243,350	(from facility CEMS)	
Stack Flow Rate (@ Tref)	239,417	239,909	239,663		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	1,402	1,368			
Mass NH_3 (lb)	3.09E-06	3.02E-06			
NH_3 (ppmv, flue gas)	1.7	1.6	1.6	1.7	
NH_3 (ppmv @ O_2 Correction Factor)	1.5	1.5	1.5	1.5	5
NH_3 (lb/hr)	1.1	1.0	1.1	1.1	
NH_3 (lb/MMBtu)	0.002	0.002	0.002	0.002	
NH_3 (lb/MMSCF)	2.2	2.1	2.2	2.2	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of MAQS QA efforts. The manual is revised upon periodic review and as MAQS adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. MAQS training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the MAQS QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of MAQS emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements will be used that meet applicable regulatory agency requirements.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 9, 2020

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol

Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

200909 LapRenewalRev.doc

Cleaning the air that we breathe...

STAC
STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual QI Certificate

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2017-51

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/17/17

DATE OF EXPIRATION: 1/17/22

MONTROSE ENVIRONMENTAL

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 3, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555830 GENERATOR, 50.95 MW	D13	C15	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.3, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section E and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 3, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476660	C15	D13 C16			
SELECTIVE CATALYTIC REDUCTION, NO. 3, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476660 AMMONIA INJECTION	C16	C15 S18		NH3: 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.6, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 3, HEIGHT: 86 FT; DIAMETER: 11 FT 8 IN A/N: 555830	S18	C16			

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section E and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 2-1-2008; RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013]**

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

The test(s) shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

If the turbine is not in operation during one calendar year, then no testing is required during that calendar year.

The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the District within 60 days after the test date.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1, D7, D13, D19]

D29.3 The operator shall conduct source test(s) for the pollutant(s) identified below

Pollutant(s) to be tested	Required Test Method(s)	Sampling Time	Test Location
SOX emissions	AQMD Laboratory Method 307-91	Not Applicable	Fuel sample
VOC emissions	District Method 25.3	1 hour	Outlet of the SCR serving this equipment
PM emissions	District method 5.1	4 hours	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. John Groenenboom
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TEST REPORT FOR
4Q20 AMMONIA SLIP TEST
AT CANYON POWER PLANT UNIT 4
FACILITY ID 153992, DEVICE ID D19

Prepared For:

Canyon Power Plant
3071 E. Mira Loma Avenue.
Anaheim, California 92806

For Submittal To:

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 279-6777

John Groenenboom

Test Date: **November 4, 2020**
Production Date: **December 11, 2020**
Report Number: **W002AS-004299-RT-1866**

ACCREDITED
TO ASTM D7036 ONLY
CERT #3925.01

CONFIDENTIALITY STATEMENT

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REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 12/14/2020

Name: John Groenenboom Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 12/14/2020

Name: Marshall Clark Title: Reporting/QC Specialist

TABLE OF CONTENTS

1.0 INTRODUCTION AND SUMMARY

Montrose Air Quality Services, LLC (MAQS) was contracted by the Canyon Power Plant to perform an ammonia slip test at Unit 4 as required by the facility Permit (Facility ID 153992) Condition Number D29.2. This report documents the results of the ammonia slip tests performed on November 4, 2020. The test was performed by John Groenenboom, Daniel Avila, and Nestor Gonzalez. John Groenenboom was the on-site Qualified Individual for MAQS. Ms. Bertha Hernandez coordinated the test for Canyon Power Plant.

The test consisted of duplicate ammonia tests performed at 50 MW. The test program followed the procedures described in the initial compliance test protocol (MAQS document R038842). The results of the test are summarized in Table 1-1. The table shows that the ammonia slip from this unit was less than the permitted limit of 5 ppm corrected to 15% O_2.

TABLE 1-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT UNIT 4
NOVEMBER 4, 2020

Parameter	Result(1)	Limit
NH_3		
ppm	1.1	--
ppmc	1.0	5

(1) Maximum of duplicate runs, as required by SCAQMD Method 207.1

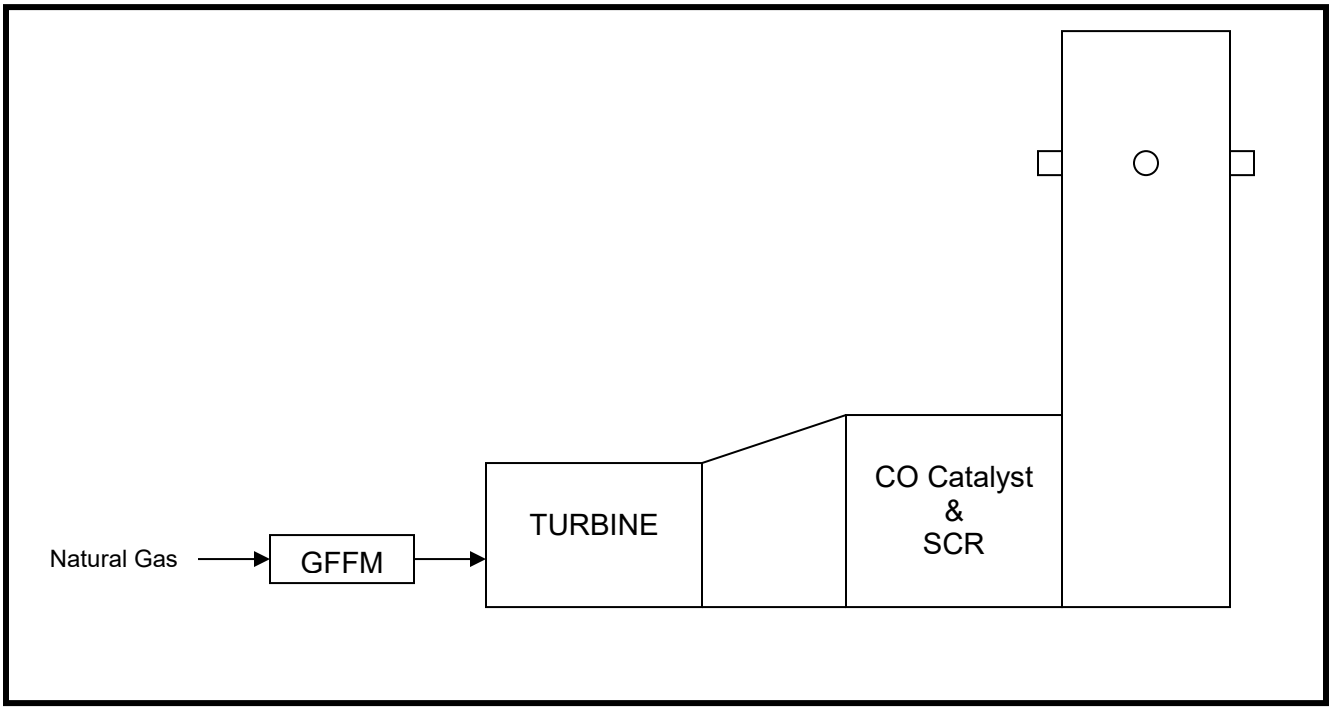
Section 2 of this document provides a brief description of the unit, test conditions, sample location, and CEMS. Details of the test procedures are provided in Section 3. Section 4 provides the results of each individual test. All raw data, calculations, quality assurance data, unit operating conditions, and CEMS data are provided in the appendices.

2.0 UNIT AND CEMS DESCRIPTION

2.1 UNIT DESCRIPTION

The City of Anaheim Canyon Power Plant is located at 3071 E. Mira Loma Avenue, Anaheim, California 92806. The facility consists of four identical generating units. Each unit consists of a natural gas fired, GE Model LM6000PC Sprint simple cycle, gas turbine. The units are natural gas fired with a rated heat input of 479 MMBtu per hour at 46°F, with water injection. The units are equipped with a CO catalyst and Selective Catalytic Reduction (SCR) system for NO_x control. Figure 2-1 presents a block diagram of the unit.

FIGURE 2-1
UNIT BLOCK DIAGRAM
CANYON POWER PLANT



Stack Inside Diameter:	11 feet, 8 inches
Distance from Upstream Disturbance:	23 feet, 4 inches (2.0 Diameters)
Distance from Stack Exit:	16 feet, 6 inches (1.4 Diameters)

2.2 TEST CONDITIONS

The tests were performed with the unit operating at an average load of 50 MW. Tests were performed while the unit was firing natural gas and operating under normal conditions. Unit operation was established by the Canyon Power Plant operators.

2.3 SAMPLE LOCATION

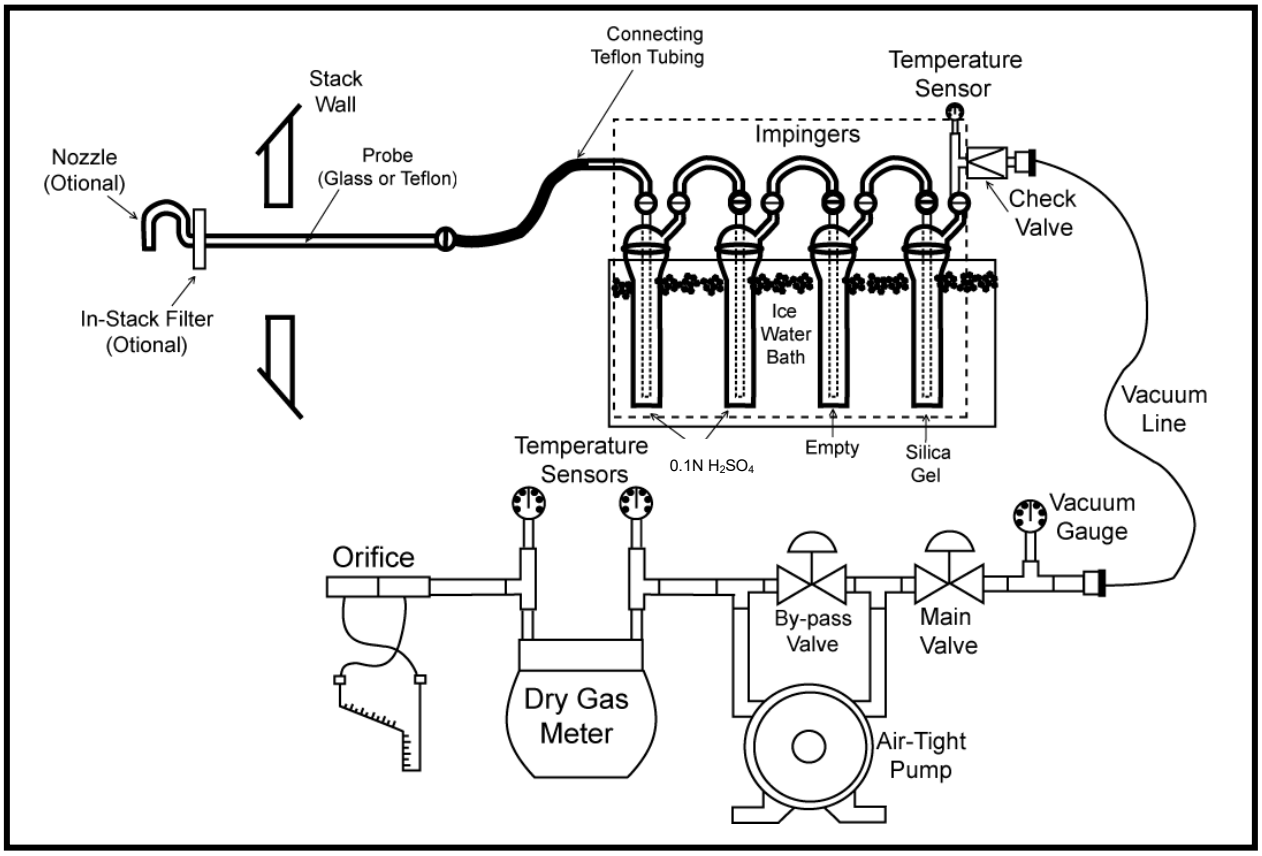
The measurements were made from sample ports located on the exhaust stack. There are four sample ports equally spaced at this location. The stack inside diameter at the sample plane is 11 feet, 8 inches. The sample ports are located 23 feet, 4 inches (2.0 diameters) downstream of the nearest flow disturbance and 16 feet, 6 inches (1.4 diameters) from the stack exit.

3.0 TEST DESCRIPTION

Flue gas samples were collected non-isokinetically using a SCAQMD Method 207.1 sample train. The samples were collected using a 12-point traverse at the exhaust stack location. Each test was performed over a 60 minute interval. The sample gas was drawn through a glass probe, Teflon sample line, two impingers each containing 100 ml of 0.1N H_2SO_4, an empty impinger, an impinger containing silica gel, and a dry gas meter. The optional nozzle and filter were not used since the source is natural gas fired. The contents of the sample line and the first three impingers were recovered and analyzed by SCAQMD Method 207.1 for ammonia concentration by Ion Specific Electrode analysis. Figure 3-1 presents a diagram of the sampling equipment.

Stack O_2 and NO_x concentrations and stack volumetric flow rate data were recorded from the Continuous Emission Monitoring System (CEMS) which is installed on the unit. These data were used to correct the ammonia concentration to 15% O_2.

FIGURE 3-1
SCAQMD METHOD 207.1 SAMPLING EQUIPMENT



4.0 RESULTS AND OVERVIEW

4.1 TEST RESULTS

The results of the test are summarized in Table 4-1. The results show that the maximum ammonia slip was 1.0 ppm @ 15% O_2 which is less than the permitted limit of 5 ppm @ 15% O_2.

TABLE 4-1
AMMONIA SLIP TEST RESULTS
CANYON POWER PLANT UNIT 4
NOVEMBER 4, 2020

Parameter/Units	Run 1	Run 2	Average	Maximum(1)	Limit
Test	1-NH_3-U4	2-NH_3-U4			--
Date	11/4/2020	11/4/2020			--
Time	1622/1728	1801/1907			--
O_2, %(2)	14.43	14.45	14.44	--	--
Stack Flow, dscfm @ T_{ref}(2)	232,720	233,803	233,261	--	--
NO_x, ppmc(2)	2.1	2.2	2.2	--	2.5
NH_3					
ppm	1.1	1.1	1.1	1.1	--
ppmc	1.0	1.0	1.0	1.0	5
lb/hr	0.7	0.7	0.7	0.7	--
lb/MMBtu	0.001	0.001	0.001	0.001	--
lb/MMSCF	1.5	1.5	1.5	1.5	--

(1) Maximum of duplicate test runs, as required by SCAQMD Method 207.1
(2) From facility CEMS

4.2 TEST OVERVIEW

The test program was successful in meeting the program objectives. The QA/QC requirements of SCAQMD Method 207.1 were met. The results are considered representative of the source at the time of the tests.

APPENDIX A
RAW DATA

Appendix A.1
Sample Data Sheets

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon 4 - Anaheim, CA
DATE: 11-4-2020
RUN NO: 1-NH3 - Unit-4
OPERATOR: N.G/D.A.
METER BOX NO: 10 D+M
METER ΔH@: 1.699 - 0.575
METER Yd: 1.001
STACK AREA, FT²: 106.5
TRAVERSE POINTS, MIN/POINT: 12 points / 5 mins
ΔH= 1.5 X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0 / 500.0

AMBIENT TEMPERATURE: 70 °F
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE: 10%
PITOT TUBE COEFF, Cp: N/A
PROBE ID NO/MATERIAL: N/A / glass
PROBE LENGTH: 6 ft
NOZZLE ID NO/ MATERIAL: N/A
NOZZLE DIAMETER:
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : 0.004 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : 0.004 CFM@ 11 in. Hg.
PITOT LEAK CHECK - PRE: N/A POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN: JG
SAMPLER: N.G.
SAMPLE CUSTODIAN: JG

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	H_2SO_4	951.6	737.3	
2	H_2SO_4	729.7	727.6	
3	MT	608.4	607.9	
4	SG	952.0	936.5	
LR		Ø	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	16:22	83.442	N/A	1.5	N/A	N/A	N/A	58	94	89	5		+10
2	16:27												
1	16:32												
0	16:37	94.852											
3	16:39	94.852		1.5				53	94	88	5		
2	16:44												
1	16:49												
0	16:54	105.898											
3	16:56	105.898		1.5				54	93	88	5		
2	*16:17:0												
1	17:06												
0	17:11	116.659											
3	17:13	116.659		1.5				55	93	89	5		
2	17:18												
1	17:23												
0	17:28	127.125											
Average:													

Comments:

Date of last revision 2/14/2017

DS834048
Master Document Storage\Forms\Datasheets\Field Datasheets

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: SCPPA
LOCATION: Canyon - Anaheim CA
DATE: 11/4/20
RUN NO: 2 NH3 - Unit-4
OPERATOR: N.G. / D.A.
METER BOX NO: 10 P&M
METER ΔH@: 1.699 - 0.575
METER Yd: 1.001
STACK AREA, FT²: 106.7
TRAVERSE POINTS, MIN/POINT: 2 min/5 min
ΔH= 1.5 X ΔP:
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: N
Filter Condition after Test: NA
Check Weight: 500.0/500.0

AMBIENT TEMPERATURE: 70 °F
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE: 11.5
PITOT TUBE COEFF, Cp: NA
PROBE ID NO/MATERIAL: NA / Glass
PROBE LENGTH: 6 Ft
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: N/A
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : 0.005 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : 0.003 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: N/A POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER N.G
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	= Difference
1	H_2SO_4	936.8	720.0	
2	H_2SO_4	706.7	704.7	
3	MT	592.1	590.8	
4	SG	932.1	921.9	
LR		0	0.0	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	Pstatic in. H_2O
3	18:01	131.696	N/A	1.5	N/A	N/A	N/A	59	87	85	5	11.5	+1.0
2	18:06								#8				
1	18:11												
0	18:16	141.813											
3	18:18	141.813		1.5				53	88	85	5		
2	18:23												
1	18:28												
0	18:33	152.239											
3	18:35	152.239		1.5				55	87	84	5		
2	18:40												
1	18:45												
0	18:50	162.746											
3	18:52	162.746		1.5				55	88	84	5		
2	18:57												
1	19:02												
0	19:07	177.227											
Average:													

Comments:

Appendix A.2
Laboratory Data

MONTROSE AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS

Project #: PROJ_004299 District Method: SCAQMD 207.1 Sample Date: 11/4/2020

Client/Location: SCPPA Calibration Date: 11/9/2020 Analysis Date: 11/9/2020

Sample Location: Unit 4 Calibration Curve: y=-56.3829x+91.1329 Analyst's Initials: LM

Test #'s: 1+2-NH3 R^2: 0.9998 Room Temperature (°C): 18.0

Sample	Total Vol. (mL)	Electrode Potential (mV)	Conc. µg NH_3 – N / ml	Cavg (µg NH_3 – N / ml)	µg NH_3 / sample	T (°C)	Blue after + ISA (Y/N)	pH	% R
Standard Check: 28 µg NH_3/ml	—	9.1	28.505	28.564	—	18.0	Y	—	2.013
		9.0	28.622			18.0	Y		
1-NH3	541.3	82.0	1.452	1.437	945.764	18.0	Y	<2	—
		82.5	1.423			18.0	Y		
2-NH3	570.2	82.5	1.423	1.429	990.131	18.0	Y	<2	—
		82.3	1.434			18.0	Y		
Spike: 1-NH3 +2ml 1000ppm NH_3	—	17.7	20.063	20.063	—	18.0	Y	—	97.00
		17.7	20.063			18.0	Y		
Standard Check: 28 µg NH3/ml	—	8.5	29.212	29.212	—	18.0	Y	—	4.330
		8.5	29.212			18.0	Y		
Reagent Blank 0.1N H_2SO_4	—	173.3	0.035	0.035	—	18.0	Y	—	—
		173.8	0.034			18.0	Y		
DI H_2O Blank	—	188.4	0.019	0.019	—	18.0	Y	—	—
		188.8	0.019			18.0	Y		
Field Blank	433.7	167.0	0.045	0.045	23.550	18.0	Y	<2	—
		167.5	0.044			18.0	Y		
Standard Check: 28 µg NH3/ml	—	8.3	29.452	29.512	—	18.0	Y	—	5.401
		8.2	29.572			18.0	Y		

Notes: Total volume of samples and standards used: 100 ml

Volume of pH adjusting ISA used in ml: 2 ml

Absorbing solution: 0.1N H_2SO_4

Calculations: Conc. (µg NH_3 – N / ml) = $10^{(P-B)/M}$; (P = electrode potential, B = y-intercept and M = slope)

Cavg = average result of duplicate analyses (µg NH_3 – N / ml) = (C1+C2)/2

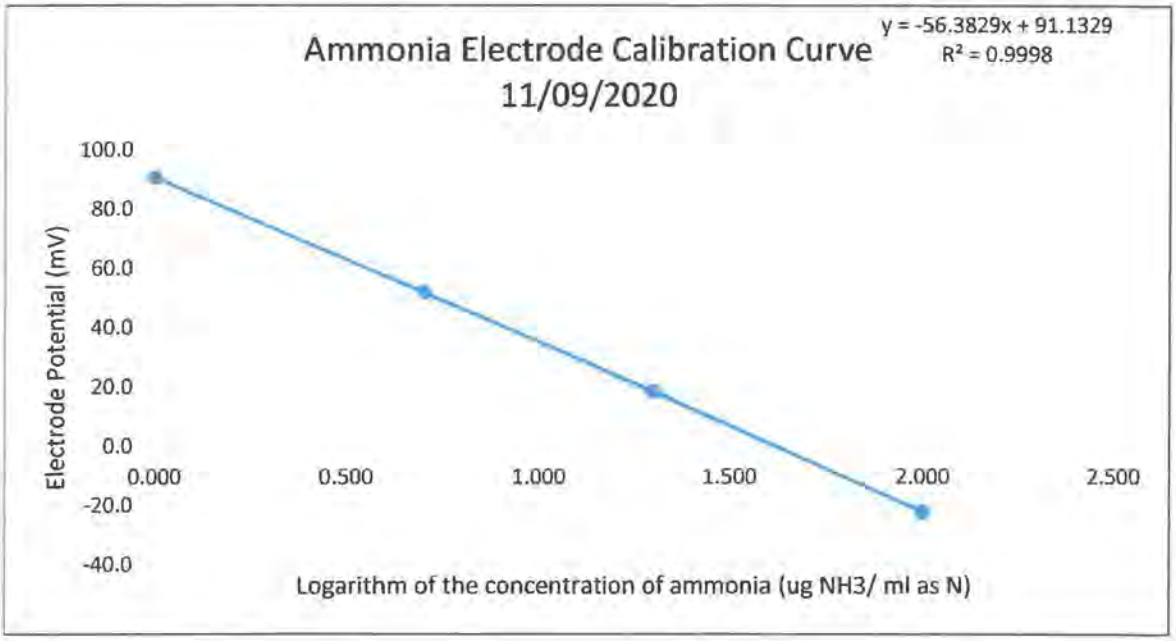
µg NH_3 / sample = Cavg* 17.03/ 14.01 * TV

mg / sample = µg /sample ÷ 1000

ppm NH_3 = mg NH_3/sample x 1/Vmstd x 1/454000 x SV/17 x 10^6

AMMONIA ELECTRODE CALIBRATION CURVE

NH_3 concentration (μg NH_3 / ml as N)	log NH_3 concentration	Electrode potential (mV)	Sample Temperature (C)	Room Temperature (C)
1	0.000	90.7	18	18
5	0.699	52.0	18	18
20	1.301	18.5	18	18
100	2.000	-22.2	18	18



slope	-56.3829
y-intercept	91.1329

Concentration (μg NH_3 / ml as N)	Value LR line	Difference	% Difference
1	1.0178	0.0178	1.7836
5	4.9437	-0.0563	-1.1251
20	19.4182	-0.5818	-2.9092
100	102.3430	2.3430	2.3430

Calculation:

Regression Line: $P=M*\log(\mu g \text{ of } NH_3/ \text{ ml as N})+B$

Measured Concentration of Ammonia (C) in μg / ml NH_3 as N: $C=10^{(P-B)/M}$

where P = electrode potential, M= slope (must be -57±3) and B= intercept

All standards were prepared in 0.04N H_2SO_4 and allowed to equilibrate to room temperature.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALCULATION

Project Number:	PROJ_004299
Client/ Location:	SCPPA
Sample Location:	U4
District Method:	SCAQMD 207.1
Sample Date:	11/4/2020
Analysis Date:	11/9/2020
Analyst's Initials:	LM
Calibration Curve Slope	-56.3829
Y-intercept	91.1329
R^2	0.9998

Sample	P mV	Conc. µg NH_3 /ml as N	C avg as N	TV (ml)	C avg as NH_3	µg NH_3/ sample
28 ug NH_3 / ml as N	9.1	28.505				
Repeat 28 ug NH_3/ml as N	9	28.622	28.564	NA	34.721	NA
1-NH_3	82.0	1.452				
Repeat 1- NH_3	82.5	1.423	1.437	541.3	1.747	945.764
2-NH3	82.5	1.423				
Repeat 2- NH3	82.3	1.434	1.429	570.2	1.736	990.131
spike 1-NH_3	17.7	20.063				
Repeat 1-NH3 spike	17.7	20.063	20.063	NA	24.388	NA
28 NH_3/ml as N	8.5	29.212				
Repeat 28 ug NH_3/ml as N	8.5	29.212	29.212	NA	35.509	NA
Reagent Blank	173.3	0.035				
Repeat Reagent Blank	173.8	0.034	0.035	NA	0.042	NA
Field Blank	167.0	0.045				
Repeat Field Blank	167.5	0.044	0.045	433.7	0.054	23.550
DI H2O Blank	188.8	0.019				
Repeat DI H2O Blank	188.8	0.019	0.019	NA	0.023	NA
28 NH_3/ml as N	8.3	29.452				
Repeat 28 ug NH_3/ml as N	8.2	29.572	29.512	NA	35.874	NA

Notes:

Measured Concentration of Ammonia (C) in µg NH_3 / ml as N

$C=10^{(P-B)/M}$

P = electrode potential (mV), M=slope and B=intercept

Average Measured Ammonia Concentration (Cavg) = (C1 + C2)/2

where C1, C2 results from duplicate analyses (µg NH_3 /ml as N)

Cavg (µg NH_3/ml as NH_3) = Cavg (µg NH_3/ ml as N) * 17.03/ 14.01

µg NH_3 / sample = Cavg (µg NH_3/ml as NH_3) * TV

Used 100 ml of samples and standards with 2 ml ISA and constant stirring rate.

All solutions turned blue and remained blue with ISA unless otherwise indicated.

Sample PH and Temperatures can be found on the laboratory datasheet.

Maximum samples (including blanks) between 28 ug/ml check standard is 5 samples analyzed in duplicate.

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS QUALITY CONTROL

Project Number: PROJ_004299
Client/ Location: SCPPA
Sample Location: U4
District Method: SCAQMD 207.1
Sample Date: 11/4/2020
Analysis Date: 11/9/2020
Analyst's Initials: LM

Sample	% recovery	RPD %	RPA %
28 ug NH3 / ml as N epeat 28 ug NH3/ml as	NA	-0.41	2.013
1-NH3 Repeat 1- NH3	NA	2.04	NA
2-NH3 Repeat 2- NH3	NA	-0.82	NA
spike 1-NH3 Repeat 1-NH3 spike	97.00	0.00	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	0.00	4.330
Reagent Blank Repeat Reagent Blank	NA	2.04	NA
Field Blank Repeat Field Blank	NA	2.04	NA
DI H2O Blank Repeat DI H2O Blank	NA	0.00	NA
28 NH3/ml as N epeat 28 ug NH3/ml as	NA	-0.41	5.401

Notes:

spike: 100 ml sample + 2 ml (1000 µg NH_3 / ml as N)

Matrix Spike Percent Recovery (%R)

%R = (C spike*0.104 - Csample*0.102)/2 *100

Cspike = average result of matrix spike (µg NH_3/ ml as N)

Relative Percent Difference (RPD) = (C1-C2)/ Cavg *100 (must be 5% or less)

Relative Percent Accuracy (RPA) (must be 10% or less)

RPA = (Cavg-theoretical value of standard)/ theoretical value of standard * 100

MONTROSE
AIR QUALITY SERVICES

AMMONIA BY ION SELECTIVE ELECTRODE ANALYSIS CALIBRATION DATA

District Method: SCAQMD 207.1

Calibration Date: 11/09/2020

Calibration Curve: y = -56.3829x + 91.1329

R^2 0.9998

Analyst's Initials: LM

Thermometer #: NA

ISE Electrode #: 14

Calibration Standard (µg NH_3 / ml as N)	Electrode Potential (mV)	Solution Temperature (°C)	Room Temperature (°C)
1	90.7	18.0	18.0
5	52.0	18.0	18.0
20	18.5	18.0	18.0
100	-22.2	18.0	18.0

Notes:

Total volume of samples and standards used: 100 ml
Volume of pH adjusting ISA used in ml: 2 ml
Absorbing solution: 0.04N H_2SO_4
Slope of the calibration curve shall be between -54 to -60
R^2 must be 0.9997 or greater
Calibration solutions, sample solutions and Calibration Verification standard temperature within ± 2°C

Appendix A.3
QA/QC Data

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\10-P&M\2020\[Semi-Annual Meter Calibration -10-P&M 7-17-202(
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #:
ID #: 10 P&M
Date: 7/17/2020
Bar. Pressure: 30.00 (in. Hg)
Performed By: R. Howard
Meter Serial #: 13464167

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.13	26.00	696.000	701.203	5.203	76.0	76.0	76.0	76.0	33	0.1551	18.0	75.0	75.0	75.0
0.13	26.00	701.203	706.405	5.202	76.0	76.0	76.0	76.0	33	0.1551	18.0	75.0	75.0	75.0
0.13	26.00	706.405	711.610	5.205	76.0	76.0	76.0	76.0	33	0.1551	18.0	75.0	75.0	75.0
0.60	12.00	712.500	717.687	5.187	77.0	77.0	79.0	77.0	48	0.3345	16.0	75.0	75.0	75.0
0.60	12.00	717.687	722.872	5.185	79.0	77.0	79.0	78.0	48	0.3345	16.0	75.0	75.0	75.0
0.60	12.00	722.872	728.061	5.189	79.0	78.0	78.0	78.0	48	0.3345	16.0	75.0	75.0	75.0
1.70	7.00	729.000	734.573	5.573	82.0	78.0	85.0	79.0	63	0.5915	14.0	76.0	76.0	76.0
1.70	7.00	734.573	740.147	5.574	85.0	79.0	86.0	81.0	63	0.5915	14.0	76.0	76.0	76.0
1.70	7.00	740.147	745.718	5.571	86.0	81.0	86.0	81.0	63	0.5915	14.0	76.0	76.0	76.0
3.00	5.00	747.200	752.413	5.213	87.0	85.0	91.0	87.0	73	0.7678	13.0	76.0	76.0	76.0
3.00	5.00	752.413	757.629	5.216	91.0	87.0	92.0	89.0	73	0.7678	13.0	76.0	76.0	76.0
3.00	5.00	757.629	762.838	5.209	92.0	89.0	93.0	90.0	73	0.7678	13.0	76.0	76.0	76.0

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.139	145.5	5.230	148.1	5.288	1.018	1.785	**Pass**			
5.138	145.5	5.230	148.1	5.288	1.018	1.785	**Pass**			
5.141	145.6	5.230	148.1	5.288	1.017	1.785	**Pass**			
				Average	**1.018**	**1.785**		**Pass**	**Pass**	**Pass**
5.114	144.8	5.206	147.4	5.263	1.018	1.768	**Pass**			
5.105	144.6	5.206	147.4	5.263	1.020	1.766	**Pass**			
5.109	144.7	5.206	147.4	5.263	1.019	1.765	**Pass**			
				Average	**1.019**	**1.766**		**Pass**	**Pass**	**Pass**
5.474	155.0	5.366	152.0	5.435	0.980	1.600	**Pass**			
5.457	154.6	5.366	152.0	5.435	0.983	1.596	**Pass**			
5.447	154.3	5.366	152.0	5.435	0.985	1.593	**Pass**			
				Average	**0.983**	**1.596**		**Pass**	**Pass**	**Pass**
5.076	143.7	4.975	140.9	5.039	0.980	1.653	**Pass**			
5.058	143.2	4.975	140.9	5.039	0.984	1.647	**Pass**			
5.040	142.7	4.975	140.9	5.039	0.987	1.642	**Pass**			
				Average	**0.984**	**1.647**		**Pass**	**Pass**	**Pass**

Average Yd:	**1.001**	**dH@:**	**1.699**
		Q @ dH = 1:	**0.575**

SIGNED: Signature on File Date: 7/17/2020

CHAIN OF CUSTODY

CLIENT: SCPPA | PROJECT #: PROJ_004299 | TEST DATE(S): 11/4/2020

LOCATION: U4 | SAMPLER(S): DA, NG

SAMPLE LOCATION: Stack | PROJECT MANAGER: JG

TEST METHOD(S): SCAQMD 207.1 | DATE DUE: 11/11/2020

OUTSIDE LAB REQUIRED?: No | COMPLIANCE TEST?: Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
11/4/2020	1622/1728	1-NH3-U4	Probe, Line, Impingers	1	DA, NG	
11/4/2020	1801/1907	2-NH3-U4	Probe, Line, Impingers	1	DA, NG	
11/4/2020		Reagent Blank	0.1 N H_2SO_4	1	JG	
11/4/2020		Reagent Blank	DI H2O	1	JG	
11/4/2020		Field Blank	Probe, Line, Impingers	1	DA, NG	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Nestor Gonzalez	11-5-20 /19:40		

ANALYSIS REQUIRED: NH_3 by SCAQMD 207.1 (ISE)

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET – STANDARD

CLIENT: SCPPA
LOCATION: Canyon 4
DATE: 11/4/20
RUN NO: FB-NH3
OPERATOR: NG/DA
METER BOX NO: 10 ft
METER ΔH@: .575
METER Yd: 1.0001
STACK AREA, FT²: 106.2
TRAVERSE POINTS, MIN/POINT: NA
ΔH= _____ X ΔP:
Probe Condition, pre/post test: good
Silica Gel Expanded, Y/N: NA
Filter Condition after Test:
Check Weight: 500.0/5000.0

AMBIENT TEMPERATURE: 70°
BAROMETRIC PRESSURE: 29.75
ASSUMED MOISTURE: 11%
PITOT TUBE COEFF, Cp:
PROBE ID NO/MATERIAL: NA / glass
PROBE LENGTH: 6'
NOZZLE ID NO/ MATERIAL:
NOZZLE DIAMETER: N/A
FILTER NO/TYPE:
PRE-TEST LEAK RATE: : <.004 CFM@ 14 in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: NA POST: N/A
CHAIN OF CUSTODY: SAMPLE CUSTODIAN JG
SAMPLER N.G.
SAMPLE CUSTODIAN JG

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	H_2SO_4	~~835.9~~ ~~734.1~~ → 735.2		
2	H_2SO_4	735.4	735.4	
3	MT	607.1	607.0	
4	SG	927.7	927.7	
HR		0	100	
Total:				

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 %	P. static in. H_2O
Average:													

Field Blank

Comments: _____

APPENDIX B
FACILITY CEMS DATA

1-NH3

Average Values Report
Generated: 11/4/2020 21:05

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.
City/St: Anaheim, CA, 92806
Source: 4

Period Start: 11/4/2020 16:22
Period End: 11/4/2020 17:27
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
11/04/2020 16:22	14.42	2.39	2.18	0.008	4.04	3.59	3.27	3.69	0.0073	480.9	50.09	236.4
11/04/2020 16:23	14.42	2.40	2.19	0.008	4.04	3.59	3.27	3.68	0.0073	480.7	50.10	236.3
11/04/2020 16:24	14.42	2.40	2.19	0.008	4.04	3.59	3.27	3.68	0.0073	480.6	50.06	236.3
11/04/2020 16:25	14.42	2.39	2.18	0.008	4.04	3.59	3.27	3.69	0.0073	480.8	50.01	236.4
11/04/2020 16:26	14.42	2.39	2.18	0.008	4.04	3.61	3.29	3.73	0.0074	480.5	50.20	236.2
11/04/2020 16:27	14.42	2.39	2.18	0.008	4.04	3.64	3.31	3.73	0.0074	480.5	50.04	236.2
11/04/2020 16:28	14.42	2.39	2.18	0.008	4.04	3.65	3.32	3.78	0.0075	480.6	49.99	236.3
11/04/2020 16:29	14.42	2.38	2.17	0.008	4.04	3.65	3.32	3.78	0.0075	480.5	49.97	236.2
11/04/2020 16:30	14.42	2.36	2.15	0.008	4.04	3.65	3.32	3.78	0.0075	480.5	49.95	236.2
11/04/2020 16:31	14.42	2.35	2.14	0.008	4.04	3.65	3.32	3.78	0.0075	480.5	50.04	236.2
11/04/2020 16:32	14.42	2.35	2.14	0.008	4.04	3.65	3.32	3.78	0.0075	480.4	49.99	236.2
11/04/2020 16:33	14.42	2.34	2.13	0.008	4.04	3.66	3.33	3.78	0.0075	480.4	50.19	236.2
11/04/2020 16:34	14.42	2.33	2.12	0.008	4.04	3.68	3.35	3.78	0.0075	480.4	50.02	236.2
11/04/2020 16:35	14.42	2.33	2.12	0.008	4.04	3.69	3.36	3.78	0.0075	480.6	49.92	236.3
11/04/2020 16:36	14.42	2.34	2.13	0.008	4.04	3.69	3.36	3.78	0.0075	480.5	49.96	236.2
11/04/2020 16:37	14.42	2.34	2.13	0.008	4.03	3.69	3.36	3.78	0.0075	480.2	49.97	236.1
11/04/2020 16:38	14.42	2.33	2.12	0.008	4.03	3.69	3.36	3.78	0.0075	480.3	50.13	236.1
11/04/2020 16:39	14.42	2.31	2.10	0.008	4.03	3.70	3.37	3.83	0.0076	480.2	50.10	236.1
11/04/2020 16:40	14.42	2.31	2.10	0.008	4.03	3.70	3.37	3.83	0.0076	480.3	49.94	236.1
11/04/2020 16:41	14.42	2.32	2.11	0.008	4.03	3.69	3.36	3.78	0.0075	480.2	49.96	236.1
11/04/2020 16:42	14.42	2.32	2.11	0.008	4.03	3.68	3.35	3.78	0.0075	480.1	49.94	236.0
11/04/2020 16:43	14.42	2.32	2.11	0.008	4.03	3.69	3.36	3.78	0.0075	480.2	50.02	236.1
11/04/2020 16:44	14.42	2.32	2.11	0.008	4.04	3.69	3.36	3.78	0.0075	480.4	49.98	236.2
11/04/2020 16:45	14.42	2.31	2.10	0.008	4.03	3.71	3.38	3.83	0.0076	480.3	49.88	236.1
11/04/2020 16:46	14.43	2.31	2.11	0.008	4.03	3.72	3.39	3.83	0.0076	480.3	50.06	236.4
11/04/2020 16:47	14.42	2.30	2.09	0.008	4.03	3.74	3.41	3.83	0.0076	480.0	49.92	236.0
11/04/2020 16:48	14.43	2.28	2.08	0.008	4.03	3.73	3.40	3.83	0.0076	480.1	50.07	236.4
11/04/2020 16:49	14.43	2.28	2.08	0.008	4.03	3.72	3.39	3.83	0.0076	480.1	49.89	236.4
11/04/2020 16:50	14.43	2.28	2.08	0.008	4.03	3.72	3.39	3.83	0.0076	480.0	50.02	236.3
11/04/2020 16:51	14.44	2.27	2.07	0.008	4.03	3.73	3.41	3.83	0.0076	480.0	49.94	236.7
11/04/2020 16:52	14.44	2.26	2.06	0.008	4.03	3.75	3.42	3.88	0.0077	479.9	50.27	236.7
11/04/2020 16:53	14.44	2.24	2.05	0.008	4.03	3.80	3.47	3.93	0.0078	479.8	49.89	236.6
11/04/2020 16:54	14.44	2.21	2.02	0.007	3.53	3.84	3.51	3.98	0.0079	479.8	50.01	236.6
11/04/2020 16:55	14.44	2.24	2.05	0.008	4.03	3.80	3.47	3.93	0.0078	479.9	49.93	236.7
11/04/2020 16:56	14.44	2.30	2.10	0.008	4.03	3.72	3.40	3.83	0.0076	479.9	50.08	236.7
11/04/2020 16:57	14.43	2.34	2.13	0.008	4.03	3.64	3.32	3.73	0.0074	479.9	50.05	236.3
11/04/2020 16:58	14.42	2.35	2.14	0.008	4.03	3.61	3.29	3.73	0.0074	479.8	49.94	235.9
11/04/2020 16:59	14.42	2.36	2.15	0.008	4.03	3.58	3.26	3.68	0.0073	479.8	49.92	235.9
11/04/2020 17:00	14.42	2.37	2.16	0.008	4.03	3.58	3.26	3.68	0.0073	479.8	50.25	235.9
11/04/2020 17:01	14.42	2.38	2.17	0.008	4.03	3.60	3.28	3.73	0.0074	480.0	49.96	236.0
11/04/2020 17:02	14.42	2.38	2.17	0.008	4.03	3.60	3.28	3.73	0.0074	479.8	49.97	235.9
11/04/2020 17:03	14.42	2.36	2.15	0.008	4.03	3.60	3.28	3.73	0.0074	479.9	49.88	235.9
11/04/2020 17:04	14.44	2.35	2.15	0.008	4.03	3.59	3.28	3.73	0.0074	479.8	50.15	236.6
11/04/2020 17:05	14.43	2.34	2.13	0.008	4.03	3.59	3.27	3.68	0.0073	479.8	49.96	236.2
11/04/2020 17:06	14.44	2.34	2.14	0.008	4.03	3.58	3.27	3.68	0.0073	479.8	49.93	236.6
11/04/2020 17:07	14.43	2.35	2.14	0.008	4.03	3.58	3.26	3.68	0.0073	479.7	49.96	236.2
11/04/2020 17:08	14.44	2.35	2.15	0.008	4.03	3.59	3.28	3.73	0.0074	479.7	50.24	236.6
11/04/2020 17:09	14.44	2.36	2.16	0.008	4.03	3.59	3.28	3.73	0.0074	479.8	49.93	236.6
11/04/2020 17:10	14.44	2.36	2.16	0.008	4.03	3.60	3.29	3.72	0.0074	479.2	49.98	236.3
11/04/2020 17:11	14.44	2.33	2.13	0.008	4.03	3.63	3.32	3.73	0.0074	479.6	50.05	236.5
11/04/2020 17:12	14.44	2.30	2.10	0.008	4.03	3.64	3.32	3.78	0.0075	479.6	49.92	236.5
11/04/2020 17:13	14.44	2.31	2.11	0.008	4.03	3.62	3.31	3.73	0.0074	479.6	49.92	236.5

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
11/04/2020 17:14	14.44	2.33	2.13	0.008	4.03	3.60	3.29	3.73	0.0074	479.6	49.98	236.5
11/04/2020 17:15	14.44	2.34	2.14	0.008	4.03	3.59	3.28	3.73	0.0074	479.7	49.92	236.6
11/04/2020 17:16	14.44	2.33	2.13	0.008	4.03	3.58	3.27	3.67	0.0073	479.3	49.98	236.4
11/04/2020 17:17	14.44	2.33	2.13	0.008	4.03	3.60	3.29	3.72	0.0074	479.3	49.96	236.4
11/04/2020 17:18	14.44	2.32	2.12	0.008	4.03	3.62	3.31	3.73	0.0074	479.4	49.91	236.4
11/04/2020 17:19	14.44	2.31	2.11	0.008	4.03	3.63	3.32	3.72	0.0074	479.2	49.93	236.3
11/04/2020 17:20	14.44	2.30	2.10	0.008	4.02	3.64	3.32	3.77	0.0075	478.9	49.84	236.1
11/04/2020 17:21	14.45	2.30	2.10	0.008	4.02	3.64	3.33	3.77	0.0075	478.8	49.86	236.5
11/04/2020 17:22	14.45	2.35	2.15	0.008	4.02	3.55	3.25	3.67	0.0073	479.1	49.98	236.7
11/04/2020 17:23	14.45	2.46	2.25	0.008	4.02	3.44	3.15	3.57	0.0071	478.9	49.95	236.5
11/04/2020 17:24	14.45	2.49	2.28	0.008	4.03	3.39	3.10	3.52	0.0070	479.4	49.95	236.8
11/04/2020 17:25	14.45	2.50	2.29	0.008	4.03	3.39	3.10	3.52	0.0070	479.3	49.99	236.7
11/04/2020 17:26	14.45	2.47	2.26	0.008	4.03	3.43	3.14	3.52	0.0070	479.2	49.92	236.7
11/04/2020 17:27	14.45	2.38	2.18	0.008	4.02	3.54	3.24	3.67	0.0073	479.0	49.92	236.6
Daily Average*	**14.43**	**2.34**	**2.14**	**0.008**	**4.02**	**3.64**	**3.32**	**3.75**	**0.0074**	**479.9**	**49.99**	**236.3**
Maximum*	**14.45**	**2.50**	**2.29**	**0.008**	**4.04**	**3.84**	**3.51**	**3.98**	**0.0079**	**480.9**	**50.27**	**236.8**
	11/04/2020 17:27	11/04/2020 17:25	11/04/2020 17:25	11/04/2020 17:27	11/04/2020 16:44	11/04/2020 16:54	11/04/2020 16:54	11/04/2020 16:54	11/04/2020 16:54	11/04/2020 16:22	11/04/2020 16:52	11/04/2020 17:24
Minimum*	**14.42**	**2.21**	**2.02**	**0.007**	**3.53**	**3.39**	**3.10**	**3.52**	**0.0070**	**478.8**	**49.84**	**235.9**
	11/04/2020 17:03	11/04/2020 16:54	11/04/2020 16:54	11/04/2020 16:54	11/04/2020 16:54	11/04/2020 17:25	11/04/2020 17:25	11/04/2020 17:26	11/04/2020 17:26	11/04/2020 17:21	11/04/2020 17:20	11/04/2020 17:03

* Does not include Invalid Averaging Periods ("N/A")

CEMTEK KVB-Enertec NetDAHS©

Average Values Report
Generated: 11/4/2020 19:12

Company: City Of Anaheim
Plant: 3071 Miraloma Ave.,
City/St: Anaheim, CA, 92806
Source: 4

Period Start: 11/4/2020 18:01
Period End: 11/4/2020 19:06
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
11/04/2020 18:01	14.45	2.63	2.41	0.009	4.54	3.28	3.00	3.38	0.0067	479.9	50.08	237.0
11/04/2020 18:02	14.43	2.61	2.38	0.009	4.54	3.32	3.03	3.43	0.0068	480.9	50.09	236.8
11/04/2020 18:03	14.43	2.49	2.27	0.008	4.03	3.46	3.16	3.58	0.0071	480.1	50.12	236.4
11/04/2020 18:04	14.44	2.28	2.08	0.008	4.03	3.70	3.38	3.83	0.0076	479.8	50.18	236.6
11/04/2020 18:05	14.44	2.22	2.03	0.007	3.53	3.81	3.48	3.93	0.0078	480.0	50.26	236.7
11/04/2020 18:06	14.44	2.30	2.10	0.008	4.03	3.70	3.38	3.83	0.0076	480.2	50.08	236.8
11/04/2020 18:07	14.47	2.48	2.28	0.008	4.03	3.50	3.21	3.63	0.0072	480.1	49.98	237.9
11/04/2020 18:08	14.44	2.59	2.37	0.009	4.54	3.36	3.07	3.48	0.0069	480.4	50.13	236.9
11/04/2020 18:09	14.44	2.53	2.31	0.009	4.54	3.40	3.11	3.53	0.0070	480.2	50.06	236.8
11/04/2020 18:10	14.44	2.36	2.16	0.008	4.04	3.62	3.31	3.73	0.0074	480.4	50.23	236.9
11/04/2020 18:11	14.44	2.17	1.98	0.007	3.53	3.87	3.53	3.98	0.0079	480.3	50.23	236.8
11/04/2020 18:12	14.44	2.17	1.98	0.007	3.53	3.92	3.58	4.03	0.0080	480.3	50.32	236.8
11/04/2020 18:13	14.44	2.30	2.10	0.008	4.04	3.77	3.44	3.88	0.0077	480.4	50.18	236.9
11/04/2020 18:14	14.44	2.39	2.18	0.008	4.03	3.62	3.31	3.73	0.0074	480.1	50.03	236.8
11/04/2020 18:15	14.44	2.47	2.26	0.008	4.04	3.50	3.20	3.63	0.0072	480.8	50.23	237.1
11/04/2020 18:16	14.44	2.49	2.27	0.008	4.04	3.46	3.16	3.58	0.0071	480.9	50.28	237.1
11/04/2020 18:17	14.44	2.52	2.30	0.008	4.04	3.44	3.14	3.53	0.0070	480.8	50.13	237.1
11/04/2020 18:18	14.44	2.58	2.36	0.009	4.54	3.40	3.11	3.53	0.0070	480.7	50.28	237.0
11/04/2020 18:19	14.44	2.59	2.37	0.009	4.53	3.41	3.11	3.53	0.0070	479.6	50.12	236.5
11/04/2020 18:20	14.44	2.46	2.25	0.008	4.04	3.55	3.24	3.69	0.0073	480.9	50.14	237.1
11/04/2020 18:21	14.44	2.33	2.13	0.008	4.05	3.68	3.36	3.79	0.0075	481.8	50.09	237.6
11/04/2020 18:22	14.46	2.29	2.10	0.008	4.02	3.72	3.41	3.82	0.0076	479.0	50.06	237.0
11/04/2020 18:23	14.45	2.35	2.15	0.008	4.04	3.66	3.35	3.79	0.0075	480.7	50.18	237.4
11/04/2020 18:24	14.44	2.34	2.14	0.008	4.04	3.66	3.34	3.78	0.0075	480.5	50.11	236.9
11/04/2020 18:25	14.44	2.29	2.09	0.008	4.04	3.72	3.40	3.84	0.0076	480.7	50.08	237.0
11/04/2020 18:26	14.44	2.32	2.12	0.008	4.04	3.73	3.41	3.83	0.0076	480.6	50.22	237.0
11/04/2020 18:27	14.44	2.33	2.13	0.008	4.04	3.73	3.41	3.84	0.0076	480.8	50.12	237.1
11/04/2020 18:28	14.44	2.34	2.14	0.008	4.04	3.73	3.41	3.84	0.0076	480.7	50.12	237.0
11/04/2020 18:29	14.44	2.33	2.13	0.008	4.04	3.73	3.41	3.83	0.0076	480.6	50.08	237.0
11/04/2020 18:30	14.45	2.32	2.12	0.008	4.04	3.75	3.43	3.89	0.0077	480.7	50.11	237.4
11/04/2020 18:31	14.45	2.33	2.13	0.008	4.04	3.77	3.45	3.88	0.0077	480.5	50.12	237.3
11/04/2020 18:32	14.45	2.33	2.13	0.008	4.04	3.78	3.46	3.94	0.0078	480.8	50.46	237.5
11/04/2020 18:33	14.45	2.32	2.12	0.008	4.04	3.78	3.46	3.94	0.0078	480.6	50.22	237.4
11/04/2020 18:34	14.45	2.32	2.12	0.008	4.04	3.78	3.46	3.94	0.0078	480.7	49.94	237.4
11/04/2020 18:35	14.45	2.31	2.11	0.008	4.04	3.78	3.46	3.94	0.0078	481.2	50.26	237.7
11/04/2020 18:36	14.45	2.31	2.11	0.008	4.04	3.79	3.47	3.94	0.0078	480.7	50.18	237.4
11/04/2020 18:37	14.46	2.32	2.13	0.008	4.04	3.80	3.48	3.94	0.0078	480.6	50.17	237.7
11/04/2020 18:38	14.46	2.34	2.14	0.008	4.04	3.80	3.48	3.94	0.0078	480.6	50.17	237.7
11/04/2020 18:39	14.46	2.35	2.15	0.008	4.04	3.80	3.48	3.94	0.0078	480.7	50.13	237.8
11/04/2020 18:40	14.46	2.34	2.14	0.008	4.04	3.81	3.49	3.93	0.0078	480.4	50.04	237.6
11/04/2020 18:41	14.46	2.33	2.13	0.008	4.04	3.83	3.51	3.99	0.0079	481.0	50.12	238.0
11/04/2020 18:42	14.45	2.34	2.14	0.008	4.04	3.84	3.51	3.99	0.0079	481.0	50.08	237.6
11/04/2020 18:43	14.46	2.35	2.15	0.008	4.04	3.83	3.51	3.99	0.0079	480.9	50.17	237.9
11/04/2020 18:44	14.46	2.35	2.15	0.008	4.04	3.82	3.50	3.99	0.0079	480.6	50.06	237.7
11/04/2020 18:45	14.46	2.35	2.15	0.008	4.04	3.83	3.51	3.99	0.0079	480.5	50.10	237.7
11/04/2020 18:46	14.46	2.34	2.14	0.008	4.04	3.85	3.53	3.99	0.0079	480.7	50.18	237.8
11/04/2020 18:47	14.46	2.34	2.14	0.008	4.04	3.84	3.52	3.99	0.0079	480.5	50.27	237.7
11/04/2020 18:48	14.46	2.37	2.17	0.008	4.04	3.80	3.48	3.94	0.0078	480.7	50.25	237.8
11/04/2020 18:49	14.46	2.39	2.19	0.008	4.04	3.75	3.44	3.89	0.0077	480.7	50.14	237.8
11/04/2020 18:50	14.46	2.39	2.19	0.008	4.04	3.74	3.43	3.89	0.0077	480.7	50.42	237.8
11/04/2020 18:51	14.46	2.40	2.20	0.008	4.04	3.76	3.44	3.89	0.0077	480.7	50.14	237.8
11/04/2020 18:52	14.45	2.40	2.20	0.008	4.04	3.76	3.44	3.88	0.0077	480.4	50.23	237.3

CEMTEK KVB-Enertec NetDAHS©

Period Start:	Average 4_O2 %	Average 4_NOXPPM ppm	Average 4_NOX_CORR ppm	Average 4_NOX_LBMM #/MBTU	Average 4_NOX_LBHR #/hr	Average 4_COPPM ppm	Average 4_CO_CORR ppm	Average 4_CO_LBHR #/hr	Average 4_CO_LBMM #/MBTU	Average 4_GasFlow kscfh	Average 4_LOAD MW	Average 4_STACKFLW kscfm
11/04/2020 18:53	14.47	2.41	2.21	0.008	4.04	3.75	3.44	3.89	0.0077	480.7	50.09	238.1
11/04/2020 18:54	14.45	2.41	2.20	0.008	4.04	3.75	3.43	3.89	0.0077	480.7	50.27	237.4
11/04/2020 18:55	14.46	2.41	2.21	0.008	4.04	3.74	3.43	3.89	0.0077	480.7	49.99	237.8
11/04/2020 18:56	14.46	2.40	2.20	0.008	4.04	3.74	3.43	3.88	0.0077	480.5	50.08	237.7
11/04/2020 18:57	14.46	2.40	2.20	0.008	4.04	3.74	3.43	3.89	0.0077	480.7	50.07	237.8
11/04/2020 18:58	14.46	2.40	2.20	0.008	4.04	3.73	3.42	3.88	0.0077	480.4	50.16	237.6
11/04/2020 18:59	14.47	2.40	2.20	0.008	4.04	3.74	3.43	3.88	0.0077	480.5	50.14	238.0
11/04/2020 19:00	14.47	2.40	2.20	0.008	4.04	3.75	3.44	3.88	0.0077	480.5	50.09	238.0
11/04/2020 19:01	14.47	2.40	2.20	0.008	4.04	3.76	3.45	3.89	0.0077	480.6	50.14	238.1
11/04/2020 19:02	14.46	2.38	2.18	0.008	4.04	3.76	3.44	3.89	0.0077	480.6	50.19	237.7
11/04/2020 19:03	14.46	2.38	2.18	0.008	4.04	3.75	3.44	3.89	0.0077	480.8	50.28	237.8
11/04/2020 19:04	14.46	2.40	2.20	0.008	4.04	3.74	3.43	3.89	0.0077	480.6	49.99	237.7
11/04/2020 19:05	14.47	2.40	2.20	0.008	4.04	3.73	3.42	3.89	0.0077	480.9	50.08	238.2
11/04/2020 19:06	14.46	2.40	2.20	0.008	4.04	3.73	3.42	3.89	0.0077	481.0	50.02	238.0
Daily Average*	**14.45**	**2.38**	**2.18**	**0.008**	**4.06**	**3.70**	**3.39**	**3.83**	**0.0076**	**480.6**	**50.15**	**237.4**
Maximum*	**14.47**	**2.63**	**2.41**	**0.009**	**4.54**	**3.92**	**3.58**	**4.03**	**0.0080**	**481.8**	**50.46**	**238.2**
	11/04/2020 19:05	11/04/2020 18:01	11/04/2020 18:01	11/04/2020 18:19	11/04/2020 18:18	11/04/2020 18:12	11/04/2020 18:12	11/04/2020 18:12	11/04/2020 18:12	11/04/2020 18:21	11/04/2020 18:32	11/04/2020 19:05
Minimum*	**14.43**	**2.17**	**1.98**	**0.007**	**3.53**	**3.28**	**3.00**	**3.38**	**0.0067**	**479.0**	**49.94**	**236.4**
	11/04/2020 18:03	11/04/2020 18:12	11/04/2020 18:12	11/04/2020 18:12	11/04/2020 18:12	11/04/2020 18:01	11/04/2020 18:01	11/04/2020 18:01	11/04/2020 18:01	11/04/2020 18:22	11/04/2020 18:34	11/04/2020 18:03

* Does not include Invalid Averaging Periods ("N/A")

APPENDIX C
CALCULATIONS

Appendix C.1
General Emissions Calculations

GENERAL EMISSION CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$$MW_{dry} = 0.44 * \%CO_2 + 0.32 * \%O_2 + 0.28 * \%N_2$$

$$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$$

B. Absolute stack pressure, iwg

$$Ps = Pbar + \frac{Psg}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * (P_{bar} + \frac{\Delta H}{13.6}) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{lc} * \frac{T_{ref}}{528\ ^\circ R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack gas volumetric flow rate

A. Actual stack gas volumetric flow rate, wacfm

$$Q = V_s * A_s * 60$$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 \times T_s\ (V_m std)}{(1\text{-}Bwo)\ 0 \times Vs \times Ps \times Dn2} \times \frac{520°R}{T_{ref}}$$

VII. Particulate emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C \times Qsd \times (60\ min/hr)/(7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx \frac{1\ lb}{7000\ gr} \times F \times \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	= stack area, ft^2
B_{wo}	= flue gas moisture content, dimensionless
$C_{12\%CO2}$	= particulate grain loading, gr/dscf corrected to 12% CO_2
C	= particulate grain loading, gr/dscf
C_p	= pitot calibration factor, dimensionless
Dn	= nozzle diameter, in.
F	= fuel F-Factor, dscf/MMBtu @ 0% O_2
H	= orifice differential pressure, iwg
I	= % isokinetics
M_n	= mass of collected particulate, mg
M_i	= mass emission rate of specie i, lb/hr
MW	= molecular weight of flue gas, lb/lb-mole
M_{wi}	= molecular weight of specie i: SO_2: 64 NO_x: 46 CO: 28 HC: 16
0	= sample time, min.
ΔP	= average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	= barometric pressure, inches Hg
P_s	= stack absolute pressure, inches Hg
P_{sg}	= stack static pressure, iwb
Q	= wet stack flow rate at actual conditions, wacfm
Q_{sd}	= dry standard stack flow rate, dscfm
SV	= specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	= meter temperature, °R
T_{ref}	= reference temperature, °R
T_s	= stack temperature, °R
V_s	= stack gas velocity, ft/sec
V_{lc}	= volume of liquid collected in impingers, ml
V_m	= uncorrected dry meter volume, dcf
V_{mstd}	= dry meter volume at standard conditions, dscf
V_{wstd}	= volume of water vapor at standard conditions, scf
Y_d	= meter calibration coefficient

Appendix C.2
Spreadsheet Summaries

SCAQMD 207.1 EXAMPLE CALCULATION
TEST NUMBER: 1-NH3-U4

Identifier	Description	Units	Equation	Value
A	Reference Temperature	F	--	60
B	Reference Temperature	R	A + 460	520
C	Meter Calibration Factor (Yd)	--	--	1.001
D	Barometric Pressure	" Hg	--	29.75
E	Meter Volume	acf	--	43.683
F	Meter Temperature	F	--	91.0
G	Meter Temperature	R	F + 460	551.0
H	Delta H	" H_2O	--	1.5
I	Meter Volume (standard)	dscf	0.03342 * E * (D + H/13.6) * B/G * C	41.181
J	Liquid Collected	grams	--	132.4
K	Water vapor volume	scf	0.0472 * J * B/528	6.155
L	Moisture Content	--	K/(K + I)	0.130
M	Gas Constant	ft-lbf/lb-mole-R	--	1545.33
N	Specific Molar Volume	SCF/lb-mole	385.3 * B / 528	379.5
O	F-Factor	dscf/MMBtu	--	8,710
P	HHV	Btu/SCF	--	1,050
Q	Mass Conversion Factor	lb/ug	--	2.2046E-09
R	O_2 Correction Factor	--	--	15
S	Stack Flow Rate @ 68 F	dscfm	--	236,300
T	Stack Flow Rate @ Tref	dscfm	S * B/528	232,720
U	Mass NH_3	ug	--	946
V	Mass NH_3	lb	U * Q	2.09E-06
W	MW of NH_3	lb/lb-mole	--	17.03
X	NH_3	ppm	$(V * N * 10^6)/(I * W)$	1.1
Y	Flue Gas O_2	%	--	14.43
Z	NH_3	ppmc	X * (20.9 - R)/(20.9 - Y)	1.0
AA	NH_3	lb/hr	$X * T * W * 60/(N * 10^6)$	0.7
AB	NH_3	lb/MMBtu	$(X * W * O)/(385.3 * 10^6) * 20.9/(20.9 - Y)$	0.001
AC	NH_3	lb/MMSCF	AB * P	1.5

Note:

(1) Some values may be slightly different from those shown on the run sheets due to round off errors. This page is intended to show the calculation methodology only.

SCAQMD METHOD 207.1
DATA WORKSHEET AND SUMMARY

Facility	**Canyon**		Parameter		**NH_3**
Unit	**U4**		Fuel		**Natural gas**
Sample Location	**Stack**		Data By		**JG**
Test Number	1-NH3-U4	2-NH3-U4	Average	Maximum	Limit
Reference Temperature (°F)	60	60			
Test Date	11/4/2020	11/4/2020			
Test Method	SCAQMD 207.1	SCAQMD 207.1			
Sample Train	10 P&M	10 P&M			
Meter Calibration Factor	1.001	1.001			
Stack Area (ft^2)	106.90	106.90			
Sample Time (Minutes)	60	60			
Barometric Pressure ("Hg)	29.75	29.75			
Start/Stop Time	1622/1728	1801/1907			
Meter Volume (acf)	43.683	45.531			
Meter Temperature (°F)	91.0	86.0			
Meter Pressure (iwg)	1.5	1.5			
Liquid Volume (ml)	132.4	130.3			
Stack O_2 (%)	14.43	14.45	14.44	(from facility CEMS)	
Unit Load (MW)	50.0	50.2	50.1		
Standard Sample Volume (SCF)	41.181	43.316			
Moisture Fraction	0.130	0.123			
Stack Flow Rate (dscfm, 68 °F)	236,300	237,400	236,850	(from facility CEMS)	
Stack Flow Rate (@ Tref)	232,720	233,803	233,261		
Gas Constant (ft-lbf/lb-mole-R)	1545.33	1545.33			
Molecular Weight NH_3 (lb/lb-mole)	17.03	17.03			
Specific Molar Volume (ft^3/lb-mole)	379.5	379.5			
F-Factor (dscf/MMBtu)	8,710	8,710			
HHV(Btu/SCF)	1,050	1,050			
Mass Conversion (lb/ug)	2.2046E-09	2.2046E-09			
O_2 Correction Factor (%)	15	15			
Mass NH_3 (ug)	946	990			
Mass NH_3 (lb)	2.09E-06	2.18E-06			
NH_3 (ppmv, flue gas)	1.1	1.1	1.1	1.1	
NH_3 (ppmv @ O_2 Correction Factor)	1.0	1.0	1.0	1.0	5
NH_3 (lb/hr)	0.7	0.7	0.7	0.7	
NH_3 (lb/MMBtu)	0.001	0.001	0.001	0.001	
NH_3 (lb/MMSCF)	1.5	1.5	1.5	1.5	

Note: SCAQMD Method 207.1 requires the higher of the duplicate runs be reported as the test result.

1-NH3-U4

Point	Meter Volume	Delta H	Tm In	Tm Out
6	83.442	1.5	94	89
5			94	88
4			93	88
3			93	89
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	127.125			
Result	**43.683**	**1.5**		**91.0**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	951.6	737.3	214.3
2	729.7	727.6	2.1
3	608.4	607.9	0.5
4	952.0	936.5	15.5
Line Rinse	0.0	100.0	-100.0
			132.4

2-NH3-U4

Point	Meter Volume	Delta H	Tm In	Tm Out
6	131.696	1.5	87	85
5			88	85
4			87	84
3			88	84
2				
1				
Stop				
6				
5				
4				
3				
2				
1				
Stop	177.227			
Result	**45.531**	**1.5**		**86.0**

Impinger Weights

#	Post-Test	Pre-Test	Difference
1	936.8	720.0	216.8
2	706.7	704.7	2.0
3	592.1	590.8	1.3
4	932.1	921.9	10.2
Line Rinse	0.0	100.0	-100.0
			130.3

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of MAQS QA efforts. The manual is revised upon periodic review and as MAQS adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. MAQS training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the MAQS QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of MAQS emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, will be present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)

The following safety measures will be followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	+/- 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	+/- 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	+/- 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	+/- 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	+/- 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for $\Delta H@$	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements will be used that meet applicable regulatory agency requirements.

Appendix D.2
SCAQMD and STAC Certifications

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 9, 2020

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

Methods 1-4	Methods 5.1, 5.2, 5.3, 6.1
Methods 10.1 and 100.1	Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol

Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler 1510 North Spring Street Los Angeles, CA 90012	Noritz America Corp. 11160 Grace Avenue Fountain Valley, CA 92708	Ajax Boiler, Inc. 2701 S. Harbor Blvd. Santa Ana, CA 92704

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

200909 LapRenewalRev.doc

Cleaning the air that we breathe...

STAC
STACK TESTING ACCREDITATION COUNCIL

American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

MONTROSE AIR QUALITY SERVICES

Appendix D.3
Individual QI Certificate

CERTIFICATE OF COMPLETION

John Groenenboom

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 207.1

Certificate Number: 002-2017-51

Tate Strickler, Accreditation Director

DATE OF ISSUE: 1/17/17

DATE OF EXPIRATION: 1/17/22

MONTROSE ENVIRONMENTAL

APPENDIX E
APPLICABLE PERMIT SECTIONS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
GAS TURBINE, NO. 4, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000PC SPRINT, SIMPLE CYCLE, 479 MMBTU/HR AT 46 DEG F, WITH INLET CHILLING, WITH WATER INJECTION WITH A/N: 555831 GENERATOR, 50.95 MW	D19	C21	NOX: MAJOR SOURCE**	**CO**: 4 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]; **CO**: 2000 PPMV NATURAL GAS (5) **[RULE 407, 4-2-1982]**; **NOX**: 2.5 PPMV NATURAL GAS (4) **[RULE 2005, 6-3-2011]**; **NOX**: 25 PPMV NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **PM10**: 0.01 GRAINS/SCF NATURAL GAS (5A) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **PM10**: 0.1 GRAINS/SCF NATURAL GAS (5) **[RULE 409, 8-7-1981]**; **PM10**: 1.67 LBS/HR NATURAL GAS (5C) **[RULE 1303(b)(2)-Offset, 5-10-1996;** *RULE 1303(b)(2) -Offset, 12-6-2002*]; **PM10**: 11 LBS/HR NATURAL GAS (5B) **[RULE 475, 10-8-1976;** *RULE 475, 8-7-1978*]; **SO2**: (9) **[40CFR 72 - Acid Rain Provisions, 11-24-1997]**; **SOX**: 0.06 LBS/MMBTU NATURAL GAS (8) **[40CFR 60 Subpart KKKK, 7-6-2006]**; **VOC**: 2 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1)-BACT, 12-6-2002*]	A63.1, A99.1, A99.2, A99.3, A195.1, A195.2, A195.3, A327.1, B61.1, D12.1, D29.2, D29.3, D82.1, D82.2, E193.1, H23.1, I298.4, K40.1

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1: POWER GENERATION					
CO OXIDATION CATALYST, NO. 4, BASF, 110 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 476663	C21	D19 C22			
SELECTIVE CATALYTIC REDUCTION, NO. 4, CORMETECH CMHT-21, 1012 CU.FT.; WIDTH: 2 FT 6 IN; HEIGHT: 25 FT 9 IN; LENGTH: 18 FT WITH A/N: 476663 AMMONIA INJECTION	C22	C21 S24		**NH3**: 5 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT, 5-10-1996;** *RULE 1303(a)(1) -BACT, 12-6-2002*]	A195.7, D12.2, D12.3, D12.4, E179.1, E179.2, E193.1
STACK, TURBINE NO. 4, HEIGHT: 86 FT ; DIAMETER: 11 FT 8 IN A/N: 555831	S24	C22			
System 2: INTERNAL COMBUSTION ENGINE					

* (1) (1A) (1B) Denotes RECLAIM emission factor
(2) (2A) (2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5) (5A) (5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8) (8A) (8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
(9) See App B for Emission Limits
(10) See section J for NESHAP/MACT requirements

** Refer to section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : C4, C10, C16, C22]

D12.5 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[**RULE 1110.2, 2-1-2008;** RULE 1110.2, 9-7-2012; **RULE 1303(b)(2)-Offset, 5-10-1996;** RULE 1303(b)(2)-Offset, 12-6-2002; RULE 1401, 9-10-2010; RULE 1470, 5-4-2012; **RULE 2012, 5-6-2005; 40CFR 60 Subpart IIII, 1-30-2013**]

[Devices subject to this condition : D25]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR serving this equipment

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name:	Mr. John Groenenboom
Title:	Client Project Manager
Region:	West
Email:	JGroenenboom@montrose-env.com
Phone:	(714) 279-6777

Name:	Mr. Matt McCune
Title:	Regional Vice President
Region:	West
Email:	MMccune@montrose-env.com
Phone:	(714) 279-6777

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 17

AQ-14 & AQ-24
RTC INVENTORY

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

December 26, 2019

Shawn Smith
Integrated Resources Manager
Canyon Power Plant (ID: 153992)
3071 E Miraloma Ave
Anaheim, CA 92806

Dear Shawn Smith:

Enclosed is your re-issued Facility Permit for Compliance Year 2020 (January 1, 2020 – December 31, 2020). This reissuance is an Administrative Permit Revision to your RECLAIM/Title V Facility Permit and includes the Title Page, Table of Contents, and Section B (RECLAIM Annual Emission Allocations) in accordance with Rule 2002(b)(4).

Please review the enclosed Section B carefully, as it will be part of your official Facility Permit. The changes are stated below. Please note that the South Coast Air Quality Management District (South Coast AQMD) rules allow you to appeal the terms and conditions of any sections of the enclosed Facility Permit by petitioning the Hearing Board within thirty days of receipt of the permit.

We recently sent you an invoice for the annual operating renewal fee for your facility permit. This must be paid on or before the due date indicated on the invoice or your facility permit will expire due to non-payment of fees.

A. Facility Permit

The enclosed Facility Permit contains changes described as follows:

1. The revision numbers and dates of the Title Page and the Table of Contents have been updated to reflect the reissuance of the relevant permit sections.

2. Section B – RECLAIM Annual Emission Allocation

   Section B has been updated to reflect all approved RECLAIM Trading Credit (RTC) transactions approved as of December 20, 2019. Therefore, if you have submitted any RTC transactions in December, please review your records carefully to ensure that you take into account any RTC transactions that have not been approved as of that date and make necessary changes to your facility's RTC balances when reconciling your facility's emissions.

   In addition, the South Coast AQMD has updated Section B of the Facility Permit to list your facility's allocation balances for the next fifteen years pursuant to Rule

2002(b)(4). Also, your facility's Starting Allocation and Non-Tradable RTCs in Compliance Year 1994 are listed within this section. This establishes the level used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) – Trading Zone Restrictions.

B. Appeals

As previously mentioned, if you determine that certain changes or clarifications need to be made to the enclosed permit, you may appeal the terms and conditions by petitioning the Hearing Board within thirty days of receipt. If you determine there are administrative errors in these permit sections, please notify South Coast AQMD staff within thirty days of receipt of your permit sections. Your facility is still bound by the requirements of your entire Facility Permit while your appeal is under consideration by South Coast AQMD staff and/or Hearing Board.

Any comments or questions regarding your RECLAIM Facility Permit may be directed to Charles Tupac, Supervising Air Quality Engineer at (909) 396-2684 or ctupac@aqmd.gov.

Sincerely,

Bhaskar Chandan, P.E., QEP
Sr. Air Quality Engineering Manager
Engineering and Permitting

Enclosure

cc: Gerardo C. Rios, USEPA (via CDX or email to R9AirPermits_SC@epa.gov)
Rafael Reynosa, Sr. Enforcement Manager – Compliance
Scott Caso, Sr. Enforcement Manager – Compliance

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Title Page
Facility ID: 153992
Revision #: 15
Date: January 01, 2020

FACILITY PERMIT TO OPERATE

CANYON POWER PLANT
3071 E MIRALOMA AVE
ANAHEIM, CA 92806

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Wayne Nastri
Executive Officer

By
Amir Dejbakhsh
Deputy Executive Officer
Engineering and Permitting

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

Table of Content
Facility ID: 153992
Revision #: 15
Date: January 01, 2020

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

TABLE OF CONTENTS

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	Year End	Zone	NOx RTC Initially Allocated	NOx RTC[1] Holding as of 01/01/2020 (pounds)	Non-Tradable[2] Non-Usable RTCs (pounds)
7/2017	6/2018	Coastal	0	7462	0
1/2018	12/2018	Coastal	0	6985	1648
7/2018	6/2019	Coastal	0	24585	1292
1/2019	12/2019	Coastal	0	40532	1648
7/2019	6/2020	Coastal	0	31792	1292
1/2020	12/2020	Coastal	0	37283	3248
7/2020	6/2021	Coastal	0	29245	2548
1/2021	12/2021	Coastal	0	33988	3295
7/2021	6/2022	Coastal	0	26660	2585
1/2022	12/2022	Coastal	0	27445	6543
7/2022	6/2023	Coastal	0	21527	5133
1/2023	12/2023	Coastal	0	27445	0
7/2023	6/2024	Coastal	0	21527	0
1/2024	12/2024	Coastal	0	27445	0
7/2024	6/2025	Coastal	0	21527	0
1/2025	12/2025	Coastal	0	27445	0
7/2025	6/2026	Coastal	0	21527	0

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	Year End	Zone	NOx RTC Initially Allocated	NOx RTC[1] Holding as of 01/01/2020 (pounds)	Non-Tradable[2] Non-Usable RTCs (pounds)
1/2026	12/2026	Coastal	0	27445	0
7/2026	6/2027	Coastal	0	21527	0
1/2027	12/2027	Coastal	0	27445	0
7/2027	6/2028	Coastal	0	21527	0
1/2028	12/2028	Coastal	0	27445	0
7/2028	6/2029	Coastal	0	21527	0
1/2029	12/2029	Coastal	0	27445	0
7/2029	6/2030	Coastal	0	21527	0
1/2030	12/2030	Coastal	0	27445	0
7/2030	6/2031	Coastal	0	21527	0
1/2031	12/2031	Coastal	0	27445	0
7/2031	6/2032	Coastal	0	21527	0
1/2032	12/2032	Coastal	0	27445	0
7/2032	6/2033	Coastal	0	21527	0
1/2033	12/2033	Coastal	0	27445	0
7/2033	6/2034	Coastal	0	21527	0
1/2034	12/2034	Coastal	0	27445	0

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of NOx RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. Total NOx emission shall not exceed such annual allocations unless the operator obtains RTCs corresponding to the facility's increased emissions in compliance with Rules 2005 and 2007.

The level of Starting Allocation plus Non-Tradable Credits used to determine compliance with Rule 2005(c)(4) and applicability of Rule 2005(e) - Trading Zone Restrictions is listed on the last page of this Section.

The following table lists the annual allocations that were issued to this facility and the amounts of RTCs held by this facility on the day of printing this Section.

RECLAIM POLLUTANT ANNUAL ALLOCATION (POUNDS)

Year Begin (month/year)	Year End	Zone	NOx RTC Initially Allocated	NOx RTC[1] Holding as of 01/01/2020 (pounds)	Non-Tradable[2] Non-Usable RTCs (pounds)
7/2034	6/2035	Coastal	0	21527	0
1/2035	12/2035	Coastal	0	27445	0

Footnotes:

1. This number may change due to pending trades, emissions reported under Quarterly Certification of Emissions Report (QCER) and Annual Permit Emission Program (APEP) Report required pursuant to Rule 2004, or deductions made pursuant to Rule 2010(b). The most recent total RTC information can be obtained from the District's RTC Listing.

2. The use of such credits is subject to restrictions set forth in paragraph (f)(1) of Rule 2002.

FACILITY PERMIT TO OPERATE
CANYON POWER PLANT

SECTION B: RECLAIM ANNUAL EMISSION ALLOCATION

The annual allocation of RECLAIM Trading Credits (RTCs) for this facility is calculated pursuant to Rule 2002. If the facility submits a permit application to increase in an annual allocation to a level greater than the facility's starting Allocation plus Non-Tradable credits as listed below, the application will be evaluated for compliance with Rule 2005 (c)(4). Rule 2005 (e) - Trading Zone Restrictions applies if an annual allocation is increased to a level greater than the facility's Starting Allocation plus Non-Tradable Credits:

Year Begin (month/year)	Year End (month/year)	Zone	RTC Starting Allocation (pounds)	Non-Tradable Credits(NTC) (pounds)

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 18

AQ-17
NH3 FLOW METER ACCURACY REPORTS

HRD 6

HOMER R. DULIN CO.

729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 4-118-20

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO:. MFG. SERIAL NO: 14236418

MANUFACTURER: MICRO MOTION MODEL: CMF025M313NQBUEZZZ

TUBE NO: . FLOAT NO: .

DATA IS: As Found/As Left ; In Tolerance See Remarks ☐

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14138117, CALIBRATED IN LBS/HR H2O @ 75°F. SP.GR. 1.0

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/H		LBS/HR	
151.77		151.62	
132.00		131.82	
114.65		114.36	
94.00		93.84	
74.80		74.64	
55.13		55.02	
37.34		37.38	
27.21		27.24	
19.20		19.15	

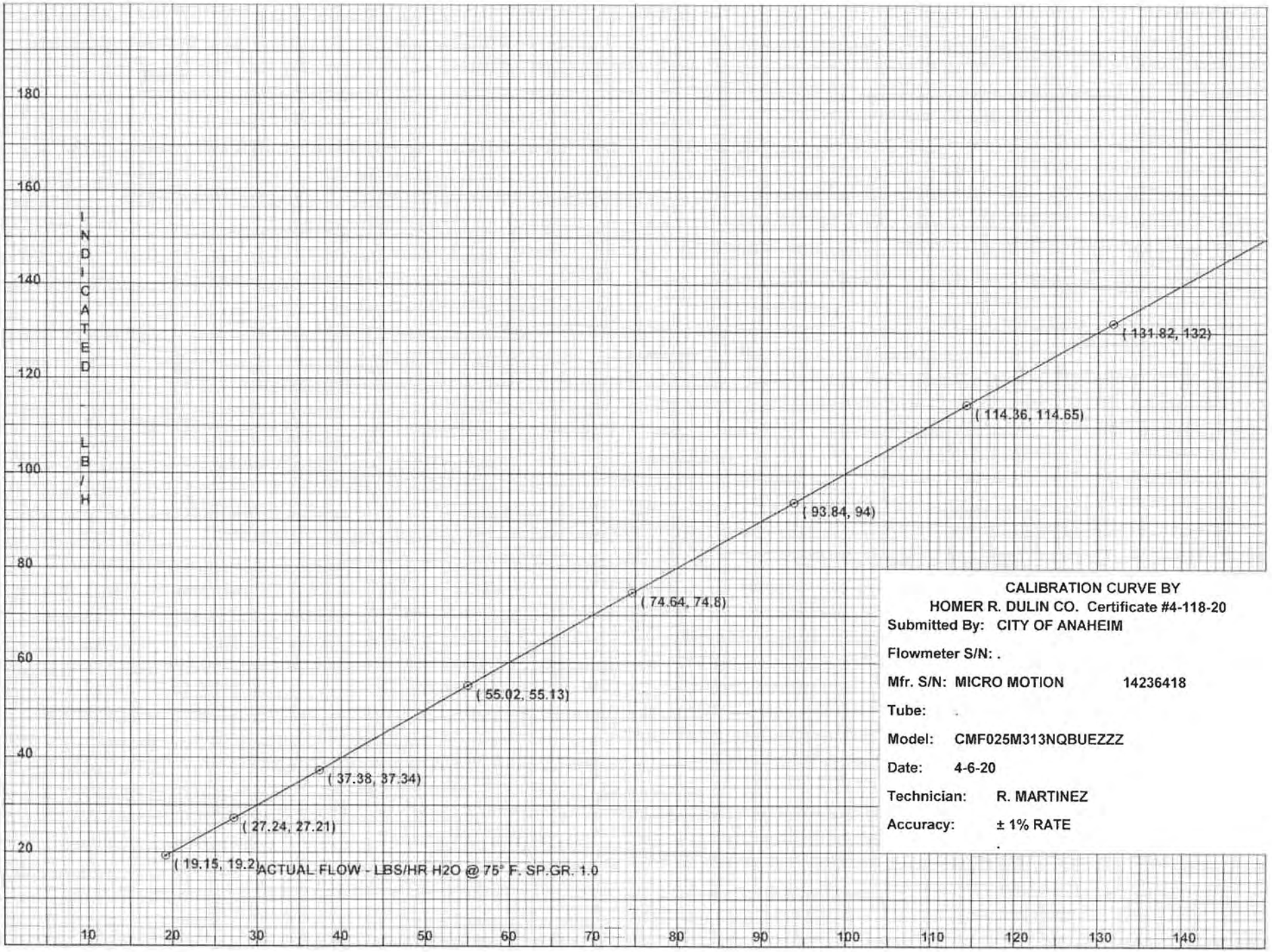
Flowmeter Certified with HOMER R. DULIN CO.

Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

P.O. No . Shipper No. .

4-6-20	4-6-21	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN


INDICATED - LB/H
ACTUAL FLOW - LBS/HR H2O @ 75° F. SP.GR. 1.0
(19.15, 19.2)
(27.24, 27.21)
(37.38, 37.34)
(55.02, 55.13)
(74.64, 74.8)
(93.84, 94)
(114.36, 114.65)
(131.82, 132)
CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #4-118-20
Submitted By: CITY OF ANAHEIM
Flowmeter S/N: .
Mfr. S/N: MICRO MOTION 14236418
Tube: .
Model: CMF025M313NQBUEZZZ
Date: 4-6-20
Technician: R. MARTINEZ
Accuracy: ± 1% RATE

HRD 6

HOMER R. DULIN CO.

729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 4-106-20

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO: . MFG. SERIAL NO: 14139410

MANUFACTURER: MICRO MOTION MODEL: CMF025M313NQBUEZZZ

TUBE NO: . FLOAT NO: .

DATA IS: As Found/As Left ; In Tolerance See Remarks ☐

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14139410, CALIBRATED IN LBS/HR H2O @ 75° F. SP.GR. 1.0

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/HR		LBS/HR	
150.40		149.28	
130.85		129.79	
112.80		112.02	
93.56		93.24	
70.92		70.68	
55.73		55.38	
36.66		36.36	
29.00		28.80	
19.40		19.24	
0.00		0.00	

Flowmeter Certified with HOMER R. DULIN CO.

Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

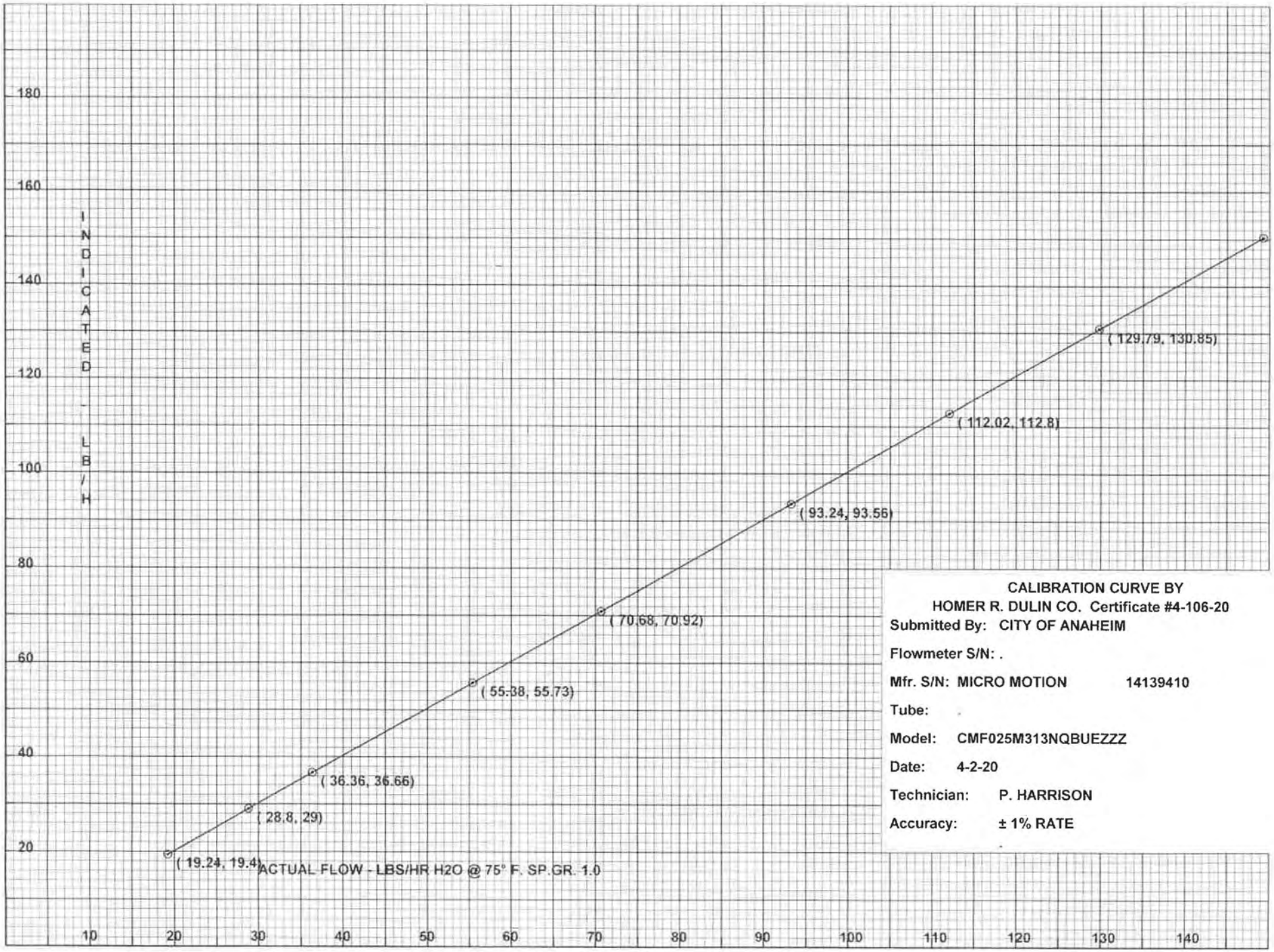
NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No . Shipper No. .

4-2-20	4-2-21	P. HARRISON Paul Harrison
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN

HRD 6



CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #4-106-20

Submitted By: CITY OF ANAHEIM

Flowmeter S/N: .

Mfr. S/N: MICRO MOTION 14139410

Tube: .

Model: CMF025M313NQBUEZZZ

Date: 4-2-20

Technician: P. HARRISON

Accuracy: ± 1% RATE

HRD 6

HOMER R. DULIN CO.

729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 3-359-20

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO: . MFG. SERIAL NO: 14134531

MANUFACTURER: MICRO MOTION MODEL: CMF025M313NQBUEZZZ

TUBE NO: N/A FLOAT NO: N/A

DATA IS: As Found/As Left ; In Tolerance

See Remarks ☑

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14134531, CALIBRATED IN LBS/HR H2O @ 75°F. SP.GR. 1.0 METER UNSTABLE BELOW 19.20 LB/HR INDICATED

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/H		LBS/HR	
150.60		150.60	
131.50		131.93	
112.20		112.86	
94.75		95.50	
76.73		77.43	
56.82		57.29	
38.47		38.66	
28.61		28.64	
19.20		19.23	
0.00		0.00	

Flowmeter Certified with HOMER R. DULIN CO.

Equip. No. 6209 YYY Accuracy 0.20% Equip. Cal. Date: 1/02/20(INSP) Cal. Due: 1/02/21(INSP)

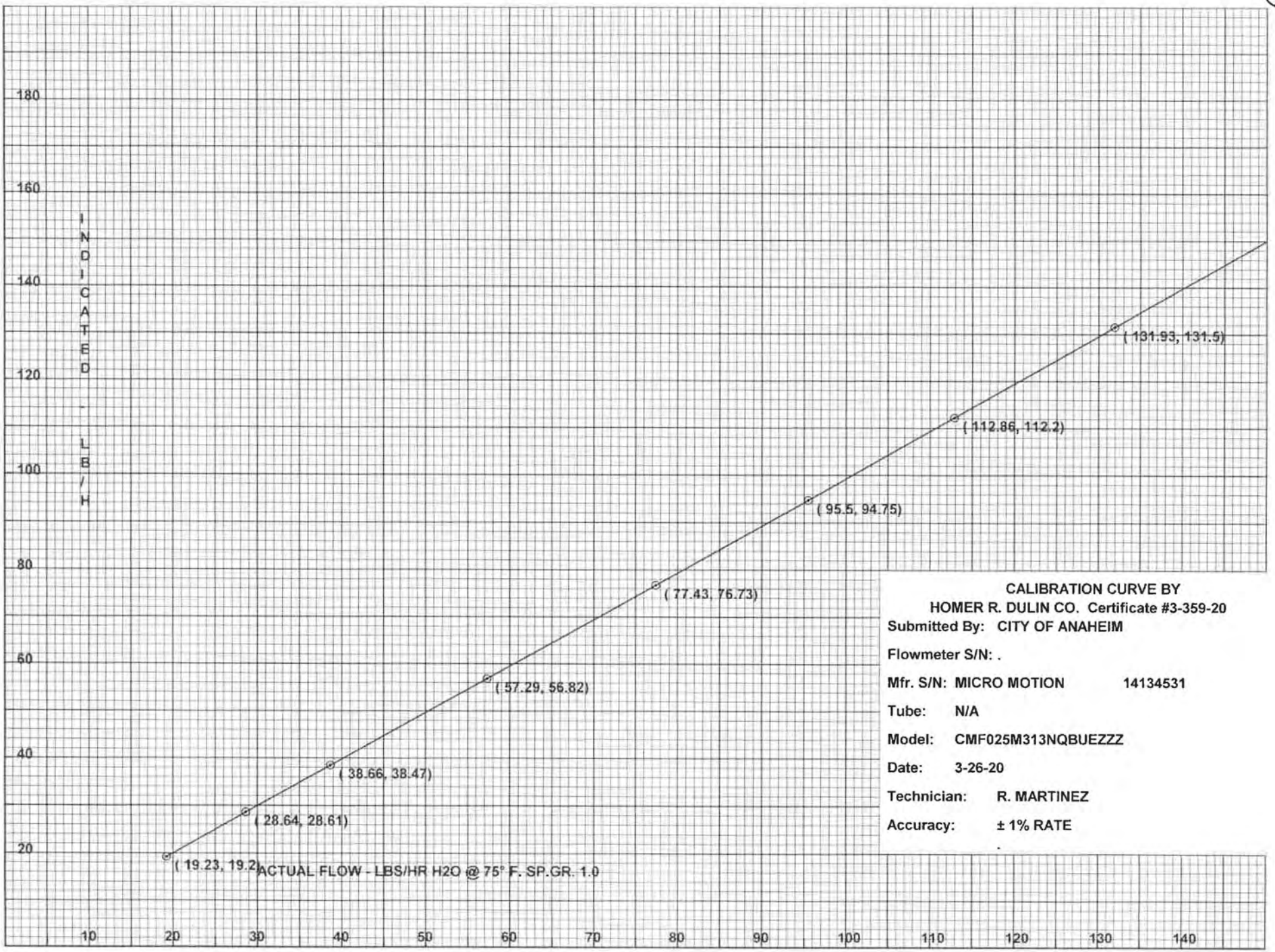
NIST Cert. No. 822/264157 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No . Shipper No. .

3-26-20	3-26-21	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN

HRD 6


INDICATED - LB/H
ACTUAL FLOW - LBS/HR H2O @ 75° F. SP.GR. 1.0
(19.23, 19.2)
(28.64, 28.61)
(38.66, 38.47)
(57.29, 56.82)
(77.43, 76.73)
(95.5, 94.75)
(112.86, 112.2)
(131.93, 131.5)
CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #3-359-20
Submitted By: CITY OF ANAHEIM
Flowmeter S/N: .
Mfr. S/N: MICRO MOTION 14134531
Tube: N/A
Model: CMF025M313NQBUEZZZ
Date: 3-26-20
Technician: R. MARTINEZ
Accuracy: ± 1% RATE

HRD 6

HOMER R. DULIN CO.

729 EAST WILLOW STREET
SIGNAL HILL, CALIFORNIA 90755
(562) 424-8533 FAX (562) 426-7707

CERT. NO. 3-292-20

CALIBRATION CERTIFICATION

SUBMITTED BY: CITY OF ANAHEIM

FLOWMETER SERIAL NO:. MFG. SERIAL NO: 14832375

MANUFACTURER: MICRO MOTION MODEL: CMF025M313N2BAEZZZ

TUBE NO: N/A FLOAT NO: N/A

DATA IS: As Found/As Left ; In Tolerance See Remarks ☑

Calibrated @ customer's facility ☐

REMARKS: DIRECT READING ELECTRONIC INDICATOR TRANSMITTER S/N: 14832375, CALIBRATED IN LBS/HR H2O @ 75° F. SP.GR. 1.0 FIRST CALIBRATION

ACCURACY ± 1% RATE

INDICATED		ACTUAL	
LB/HR		LBS/HR	
150.8		150.6	
131.7		131.4	
113.2		112.9	
94.1		93.8	
75.6		75.2	
57.1		56.7	
37.4		37.2	
20.3		20.5	
0.0		0.0	

Flowmeter Certified with HOMER R. DULIN CO.

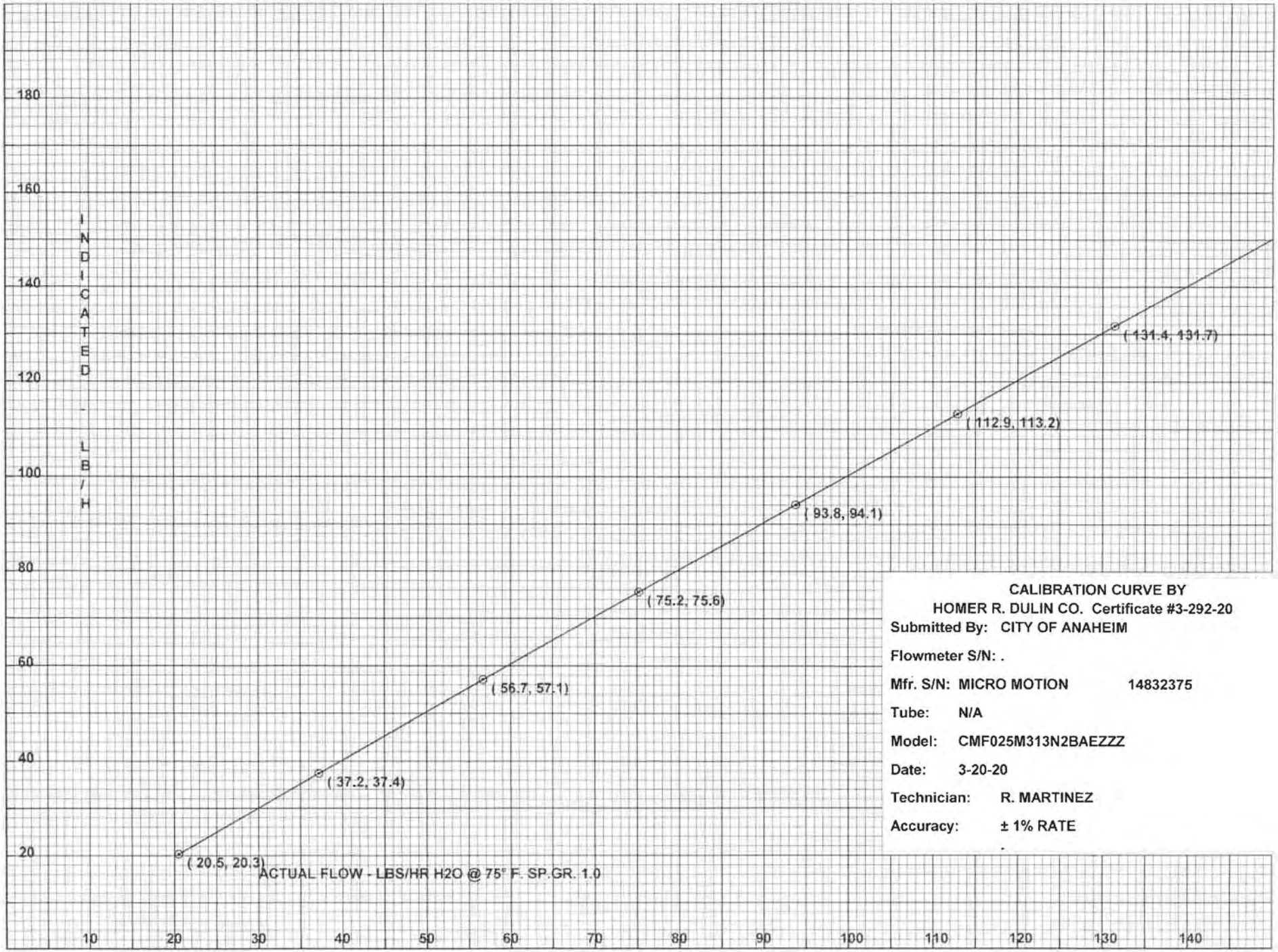
Equip. No. 11605 Accuracy 0.005% Equip. Cal. Date: 8/29/18 Cal. Due: 8/29/21

NIST Cert. No. TEST# MS 15560 Procedure No: ISA:RP 16.6

Our standards are certified by or are traceable to the National Institute of Standards and Technology and systems comply with MIL-STD 45662A, ANSI/NCSL Z540.3, ISO/IEC 17025, and ISO 10012. The collective uncertainty of the standards used in this calibration does not exceed 25% of the certified accuracy of the instrument under test. This document may not be reproduced, except in full, without prior written approval of the Homer R. Dulin Co. Rev.1 Dated 8/19/14

P.O. No . Shipper No. ,

3-20-20	3-20-21	R. MARTINEZ Rogelio Martinez
CALIBRATION DATE	RECALIBRATION DUE	CALIBRATION TECHNICIAN


INDICATED - LB/H
ACTUAL FLOW - LBS/HR H2O @ 75° F. SP.GR. 1.0
(20.5, 20.3)
(37.2, 37.4)
(56.7, 57.1)
(75.2, 75.6)
(93.8, 94.1)
(112.9, 113.2)
(131.4, 131.7)
CALIBRATION CURVE BY
HOMER R. DULIN CO. Certificate #3-292-20
Submitted By: CITY OF ANAHEIM
Flowmeter S/N: .
Mfr. S/N: MICRO MOTION 14832375
Tube: N/A
Model: CMF025M313N2BAEZZZ
Date: 3-20-20
Technician: R. MARTINEZ
Accuracy: ± 1% RATE

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 19

AQ-18
SCR INLET TEMPERATURE SENSOR

CALIBRATION REPORTS

Calibration: SCR Inlet Temperature
Unit 1 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403A

Printed: 1/16/2020 8:23:28 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

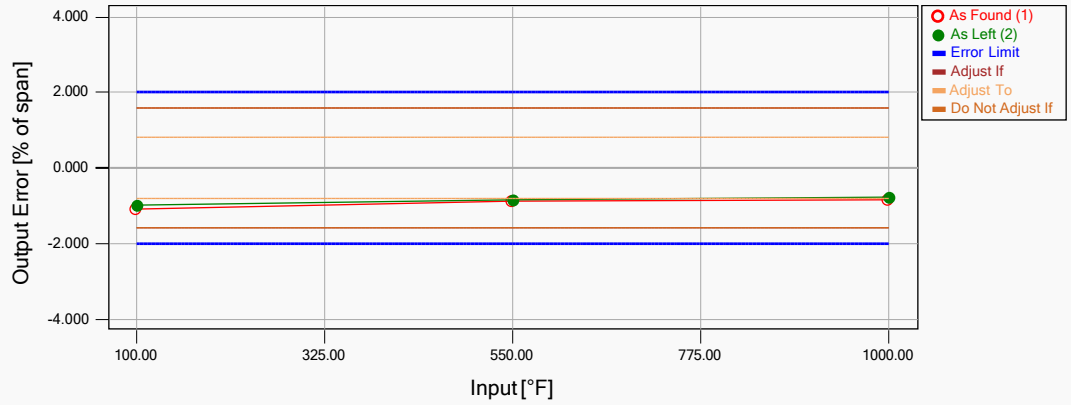
Calibration time	1/15/2020 8:14:42 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -1.106 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	99.95	100.0	90.000	-1.106
550.0	549.98	550.0	542.000	-0.887
1000.0	999.99	1000.0	992.500	-0.832

2. As Left

PASSED, DO NOT ADJUST

Maximum Error: -1.003 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.03	100.0	91.000	-1.003
550.0	550.04	550.0	542.500	-0.838
1000.0	1000.02	1000.0	993.000	-0.780

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 8:14:42 AM

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403B

Printed: 1/16/2020 8:23:28 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

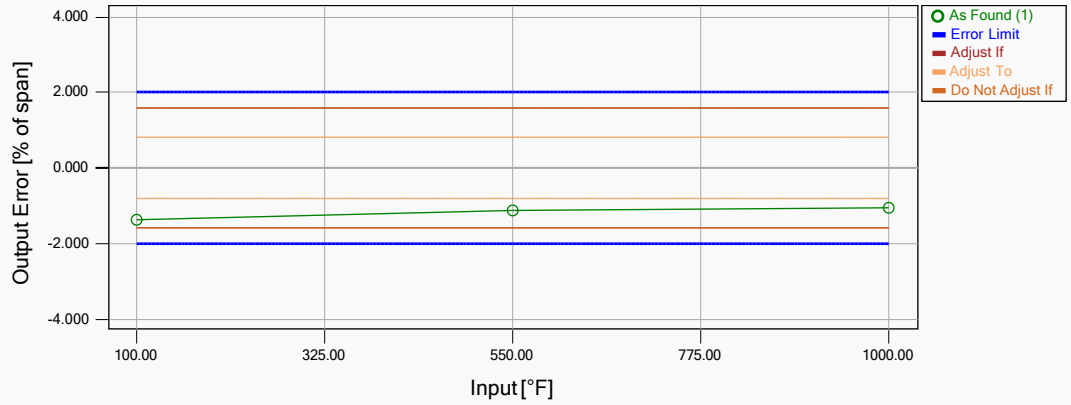
Calibration time	1/15/2020 8:25:23 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -1.392 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.03	100.0	87.500	-1.392
550.0	550.04	550.0	540.000	-1.116
1000.0	1000.02	1000.0	990.500	-1.058

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 8:25:23 AM

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403C

Printed: 1/16/2020 8:23:28 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

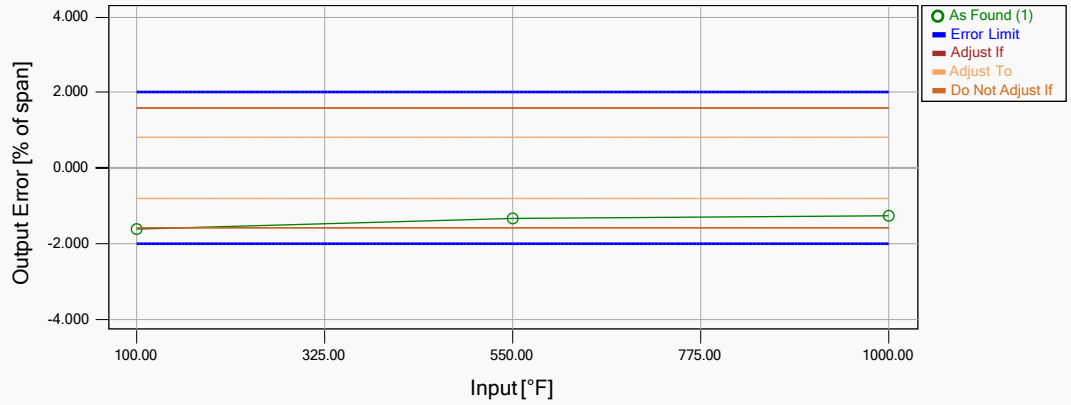
Calibration time	1/15/2020 8:29:00 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -1.613 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	85.500	-1.613
550.0	550.02	550.0	538.000	-1.336
1000.0	1000.01	1000.0	988.500	-1.279

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 8:29:00 AM

Calibration Certificate

Certificate Number:

Position ID: 1-TE-403D

Printed: 1/16/2020 8:23:28 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U1/

Device

Device ID	1-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U1 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

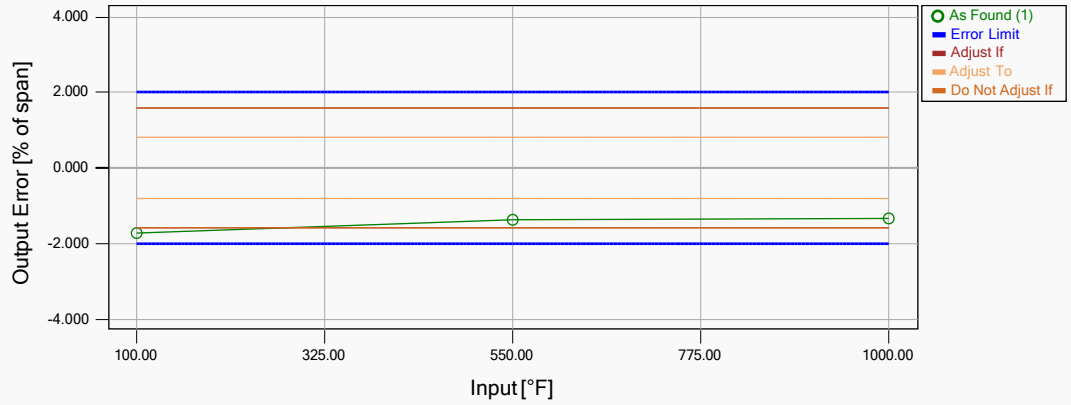
Calibration time	1/15/2020 8:32:15 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -1.723 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	84.500	-1.723
550.0	550.02	550.0	537.500	-1.391
1000.0	1000.02	1000.0	988.000	-1.336

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 8:32:15 AM

Calibration: SCR Inlet Temperature
Unit 2 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403A

Printed: 1/16/2020 8:26:24 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

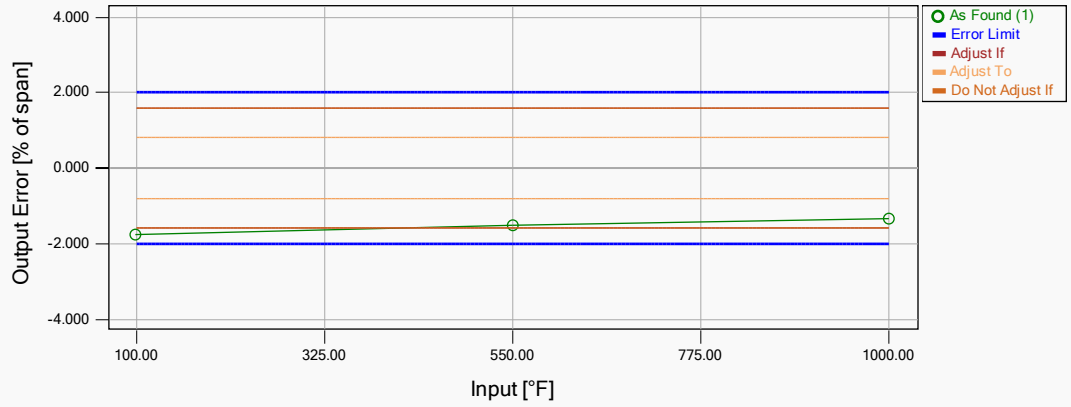
Calibration time	1/15/2020 8:57:15 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, ADJUST

Maximum Error: -1.777 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	99.99	100.0	84.000	-1.777
550.0	550.03	550.0	536.500	-1.503
1000.0	1000.01	1000.0	988.000	-1.334

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 8:57:15 AM

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403B

Printed: 1/16/2020 8:26:24 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

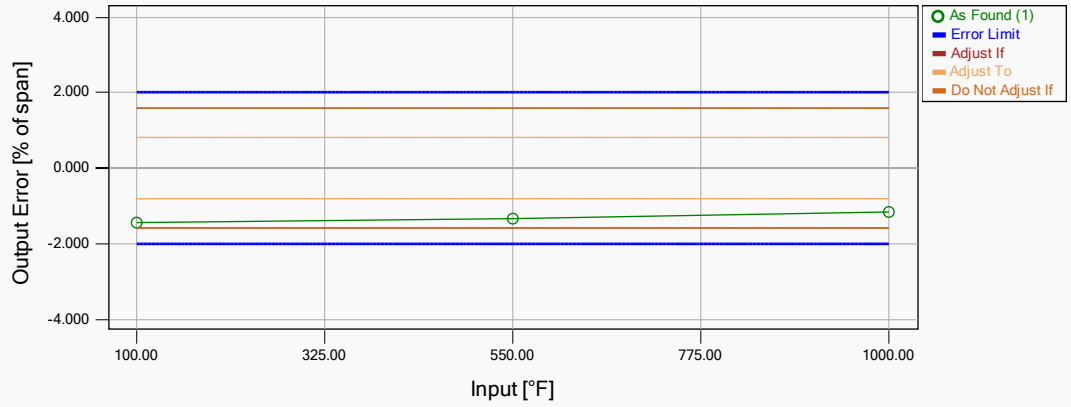
Calibration time	1/15/2020 9:00:55 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -1.446 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	87.000	-1.446
550.0	550.01	550.0	538.000	-1.334
1000.0	1000.01	1000.0	989.500	-1.168

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 9:00:55 AM

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403C

Printed: 1/16/2020 8:26:24 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

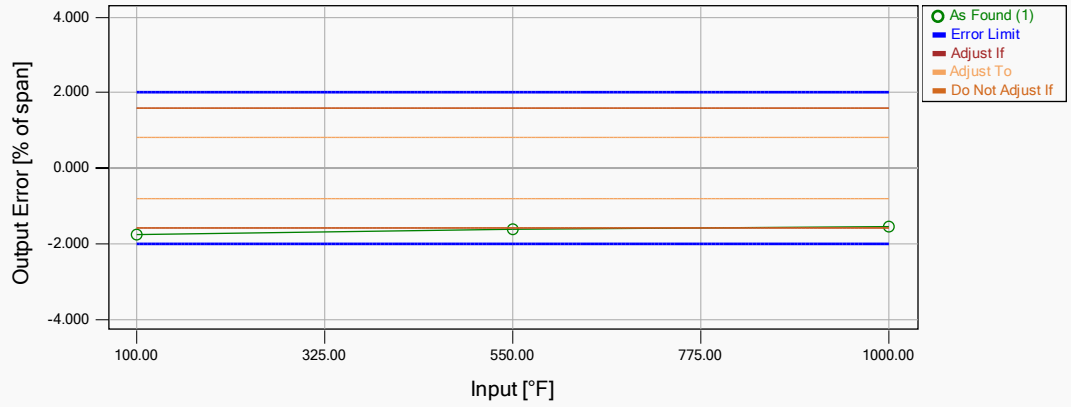
Calibration time	1/15/2020 9:04:08 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, ADJUST

Maximum Error: -1.778 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	84.000	-1.778
550.0	550.01	550.0	535.500	-1.612
1000.0	1000.01	1000.0	986.000	-1.557

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 9:04:08 AM

Calibration Certificate

Certificate Number:

Position ID: 2-TE-403D

Printed: 1/16/2020 8:26:24 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U2/

Device

Device ID	2-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U2 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

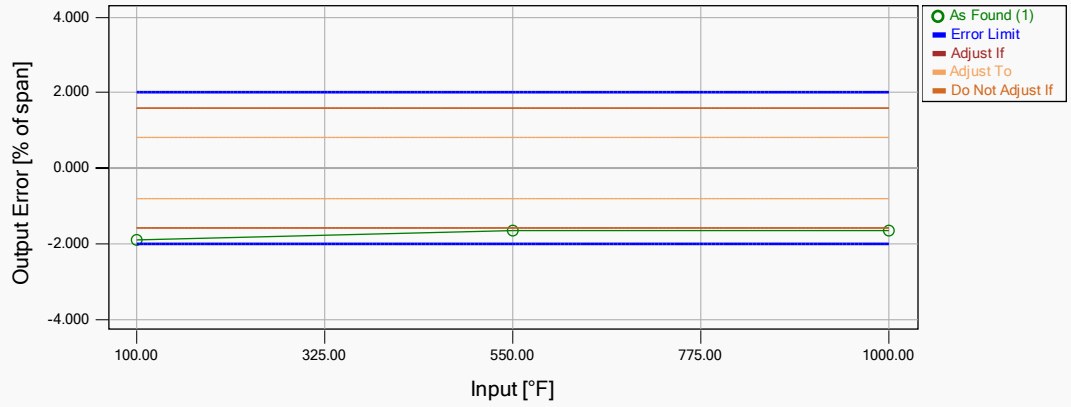
Calibration time	1/15/2020 9:30:11 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -1.889 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	83.000	-1.889
550.0	550.01	550.0	535.000	-1.668
1000.0	1000.00	1000.0	985.000	-1.667

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 9:30:11 AM

Calibration: SCR Inlet Temperature
Unit 3 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403A

Printed: 1/16/2020 8:29:45 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

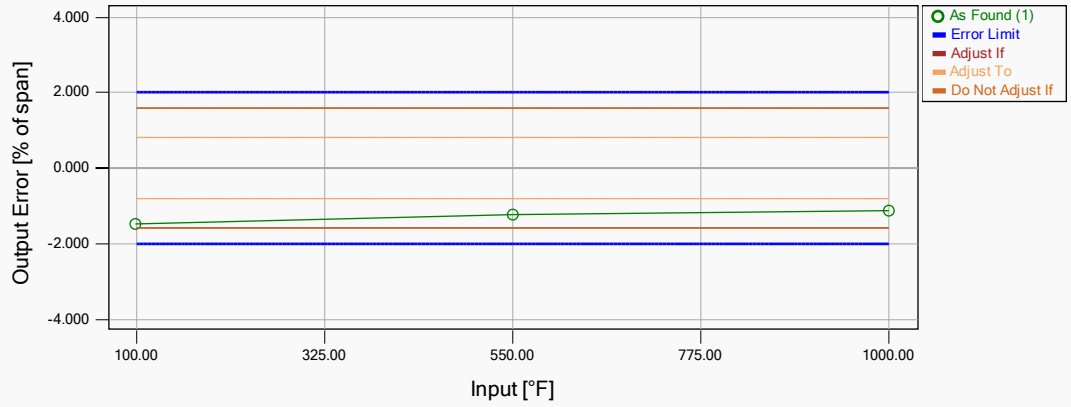
Calibration time	1/15/2020 9:57:26 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -1.497 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	99.97	100.0	86.500	-1.497
550.0	550.00	550.0	539.000	-1.222
1000.0	1000.04	1000.0	990.000	-1.116

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 9:57:26 AM

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403B

Printed: 1/16/2020 8:29:45 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

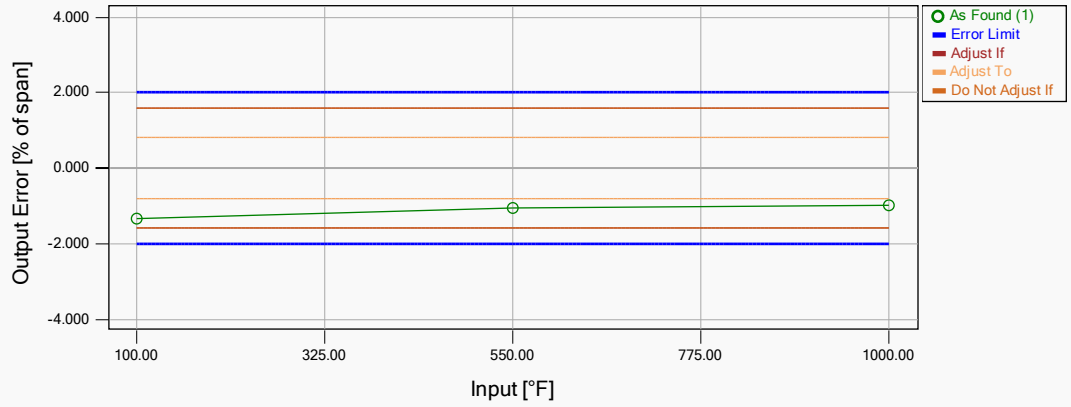
Calibration time	1/15/2020 10:00:58 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -1.338 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.04	100.0	88.000	-1.338
550.0	550.02	550.0	540.500	-1.058
1000.0	1000.02	1000.0	991.000	-1.002

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:00:58 AM

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403C

Printed: 1/16/2020 8:29:45 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

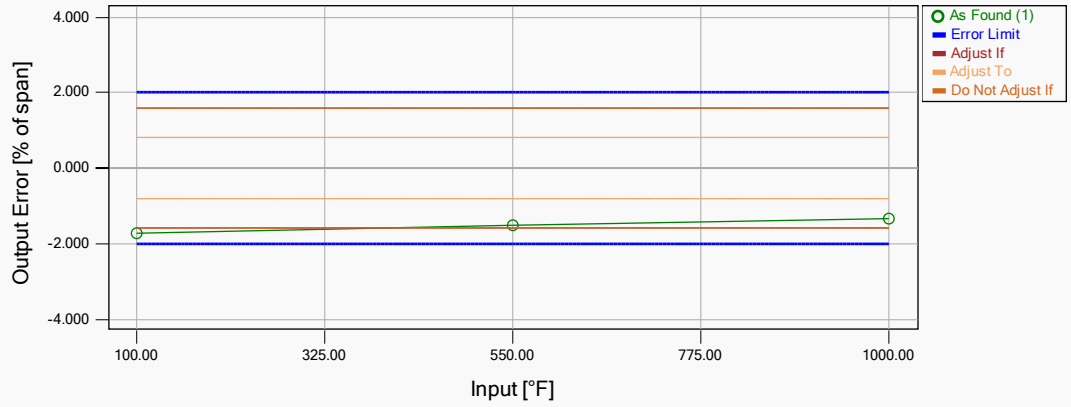
Calibration time	1/15/2020 10:04:43 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, ADJUST

Maximum Error: -1.723 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.01	100.0	84.500	-1.723
550.0	550.01	550.0	536.500	-1.501
1000.0	1000.00	1000.0	988.000	-1.333

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:04:43 AM

Calibration Certificate

Certificate Number:

Position ID: 3-TE-403D

Printed: 1/16/2020 8:29:45 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U3/

Device

Device ID	3-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U3 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

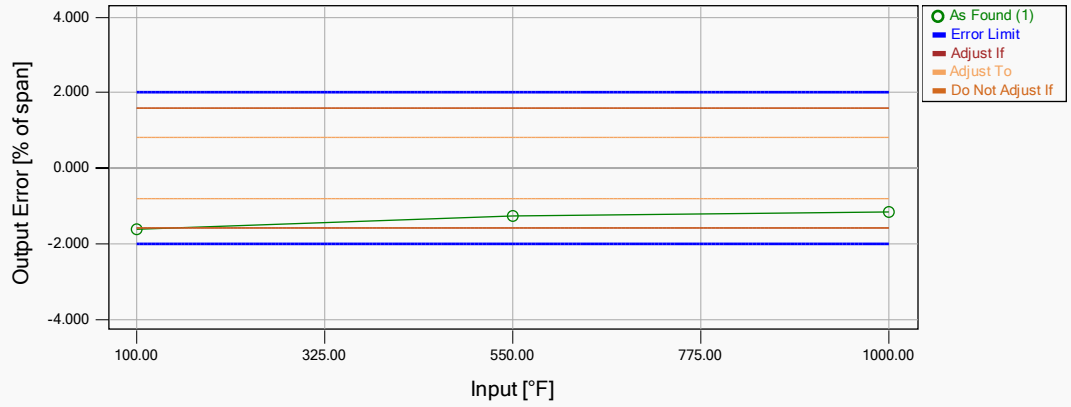
Calibration time	1/15/2020 10:07:54 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found

PASSED, ADJUST

Maximum Error: -1.611 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.00	100.0	85.500	-1.611
550.0	550.01	550.0	538.500	-1.279
1000.0	1000.02	1000.0	989.500	-1.169

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:07:54 AM

Calibration: SCR Inlet Temperature
Unit 4 TE-403A-403D

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403A

Printed: 1/16/2020 8:31:17 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403A	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

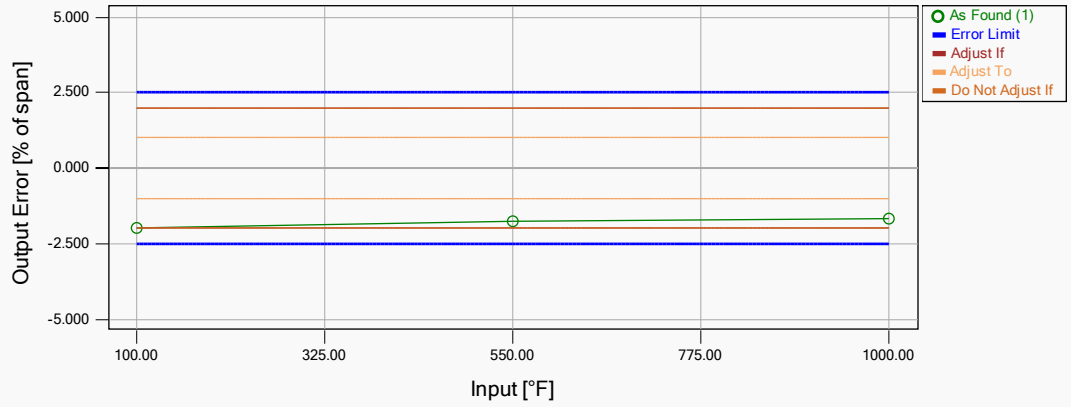
Calibration time	1/15/2020 10:41:19 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2.5 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -2.002 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	82.000	-2.002
550.0	550.01	550.0	534.000	-1.779
1000.0	1000.01	1000.0	985.000	-1.668

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:41:19 AM

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403B

Printed: 1/16/2020 8:31:17 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403B	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

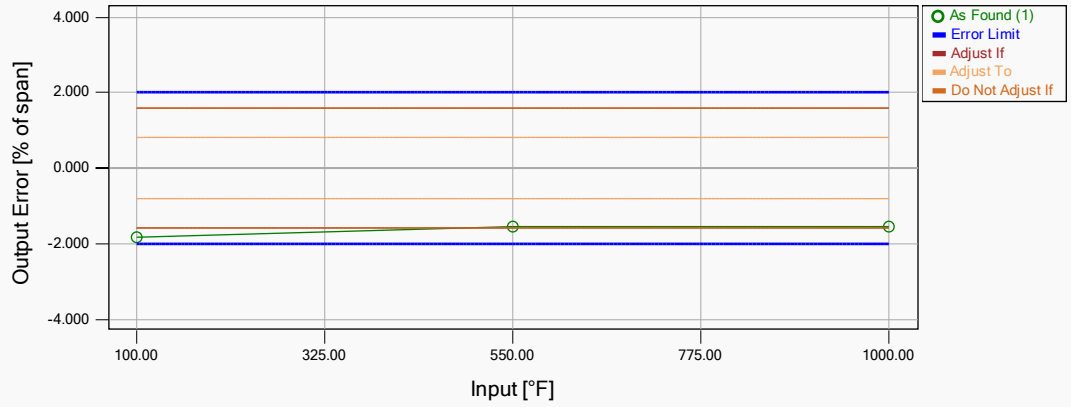
Calibration time	1/15/2020 10:44:55 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -1.836 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	83.500	-1.836
550.0	550.01	550.0	536.000	-1.557
1000.0	1000.02	1000.0	986.000	-1.558

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:44:55 AM

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403C

Printed: 1/16/2020 8:31:17 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403C	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

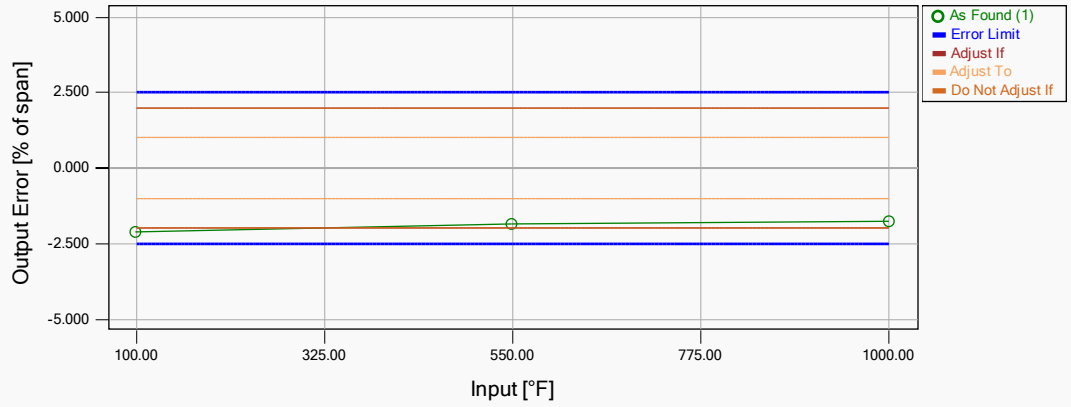
Calibration time	1/15/2020 10:48:38 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2.5 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -2.110 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	99.99	100.0	81.000	-2.110
550.0	549.99	550.0	533.500	-1.832
1000.0	1000.00	1000.0	984.000	-1.778

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:48:38 AM

Calibration Certificate

Certificate Number:

Position ID: 4-TE-403D

Printed: 1/16/2020 8:31:17 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	SCR INLET TEMP
Work Order Number	
Location	NH3 INJ SKID
Plant	CANYON/ERU/U4/

Device

Device ID	4-TE-403D	
Serial Number		
Manufacturer		
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR INLET TEMP (ud)	
Transfer Function	Linear	
Range	100 ... 1000 °F	100 ... 1000 °F

Calibration Event

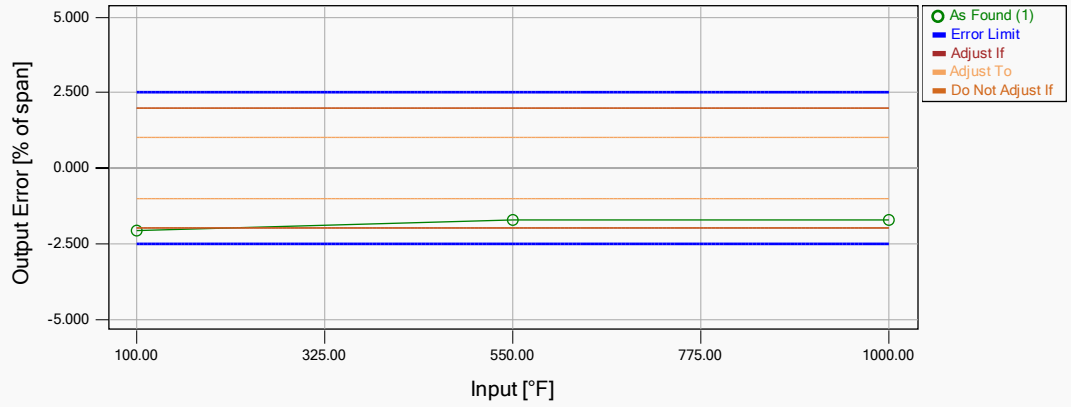
Calibration time	1/15/2020 10:52:36 AM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	2.5 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	TC-R-OUT/ TC1 : 65279	Due Date: 4/17/2020
Output Calibrator		Due Date:
Output Module		Due Date:



1. As Found — PASSED, ADJUST

Maximum Error: -2.058 % of span

Nominal Input [°F]	Actual Input [°F]	Nominal Output [°F]	Actual Output [°F]	Found Error [% of span]
100.0	100.02	100.0	81.500	-2.058
550.0	550.01	550.0	534.500	-1.723
1000.0	1000.01	1000.0	984.500	-1.723

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/15/2020 10:52:36 AM

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 20

AQ-19
SCR DIFFERENTIAL PRESSURE SENSOR

CALIBRATION REPORTS

Calibration Certificate

Certificate Number:

Position ID: 1-PDIT-403

Printed: 1/16/2020 8:21:24 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U1 SCR DP
Work Order Number	
Location	U1 ERU
Plant	CANYON/ERU/U1/

Device

Device ID	1-PDIT-403
Serial Number	
Manufacturer	Rosemount 3051S2CD1A2F12A1AB3E5L4M5Q4
Rangeability	
Operating	Operating Humidity

Function

Name	U1 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

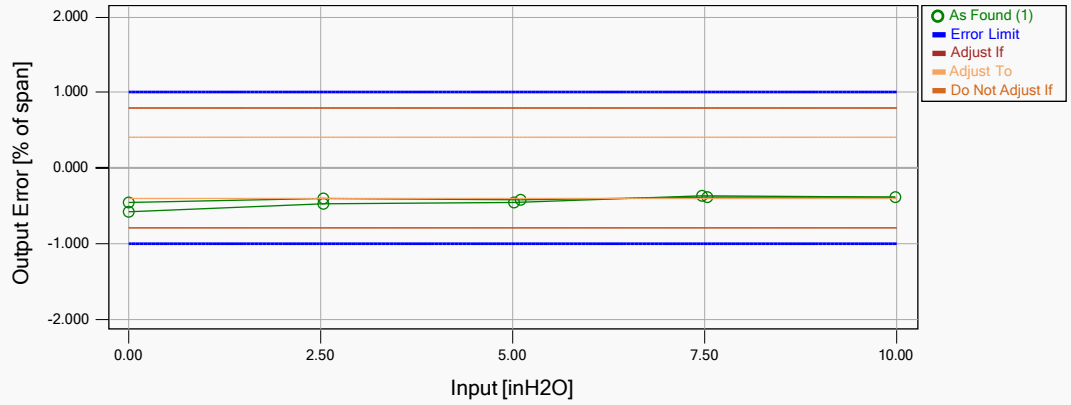
Calibration time	1/14/2020 10:55:36 AM
Next Calibration	
Environment	Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	P2C : 69381	Due Date: 4/17/2020
Output Calibrator	MC6 : 605835	Due Date: 4/16/2020
Output Module	IN : 25613	Due Date: 4/16/2020



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: -0.582 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.01	4.0000	3.9229	-0.582
2.500	2.54	8.000	7.9876	-0.478
5.000	5.03	12.000	11.9738	-0.464
7.500	7.48	16.000	15.9093	-0.367
10.000	9.99	20.000	19.9229	-0.382
7.500	7.55	16.000	16.0179	-0.388
5.000	5.11	12.000	12.1087	-0.421
2.500	2.55	8.000	8.0165	-0.397
0.0000	0.01	4.0000	3.9438	-0.451

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/14/2020 10:55:36 AM

Calibration Certificate

Certificate Number:

Position ID: 2-PDIT-403

Printed: 1/16/2020 8:25:29 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U2 SCR DP
Work Order Number	
Location	U2 ERU
Plant	CANYON/ERU/U2/

Device

Device ID	2-PDIT-403
Serial Number	
Manufacturer	Rosemount 3051S2CD1A2F12A1AB3E5L4M5Q4
Rangeability	
Operating	Operating Humidity

Function

Name	U2 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

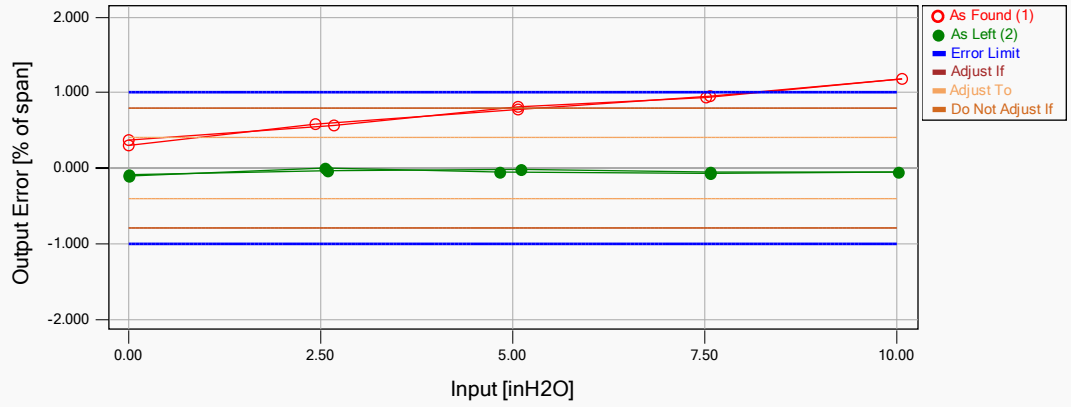
Calibration time	1/14/2020 12:08:27 PM
Next Calibration	
Environment	Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	P2C : 69381	Due Date: 4/17/2020
Output Calibrator	MC6 : 605835	Due Date: 4/16/2020
Output Module	IN : 25613	Due Date: 4/16/2020



1. As Found — FAILED

Maximum Error: 1.178 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.00	4.0000	4.0587	0.367
2.500	2.68	8.000	8.3781	0.563
5.000	5.08	12.000	12.2587	0.817
7.500	7.52	16.000	16.1812	0.933
10.000	10.08	20.000	20.3164	1.178
7.500	7.58	16.000	16.2790	0.944
5.000	5.07	12.000	12.2369	0.781
2.500	2.44	8.000	7.9957	0.573
0.0000	0.01	4.0000	4.0633	0.296

2. As Left — PASSED, DO NOT ADJUST

Maximum Error: -0.105 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.01	4.0000	3.9992	-0.105
2.500	2.56	8.000	8.0969	0.006
5.000	4.84	12.000	11.7345	-0.059
7.500	7.58	16.000	16.1172	-0.068
10.000	10.02	20.000	20.0241	-0.049
7.500	7.57	16.000	16.1028	-0.058
5.000	5.12	12.000	12.1882	-0.024
2.500	2.59	8.000	8.1393	-0.029
0.0000	0.01	4.0000	4.0027	-0.083

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/14/2020 12:08:27 PM

Calibration Certificate

Certificate Number:

Position ID: 3-PDIT-403

Printed: 1/16/2020 8:27:01 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U3 SCR DP
Work Order Number	
Location	U3 ERU
Plant	CANYON/ERU/U3/

Device

Device ID	3-PDIT-403
Serial Number	
Manufacturer	Rosemount 3051S2CD1A2F12A1AB3E5L4M5Q4
Rangeability	
Operating	Operating Humidity

Function

Name	U3 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

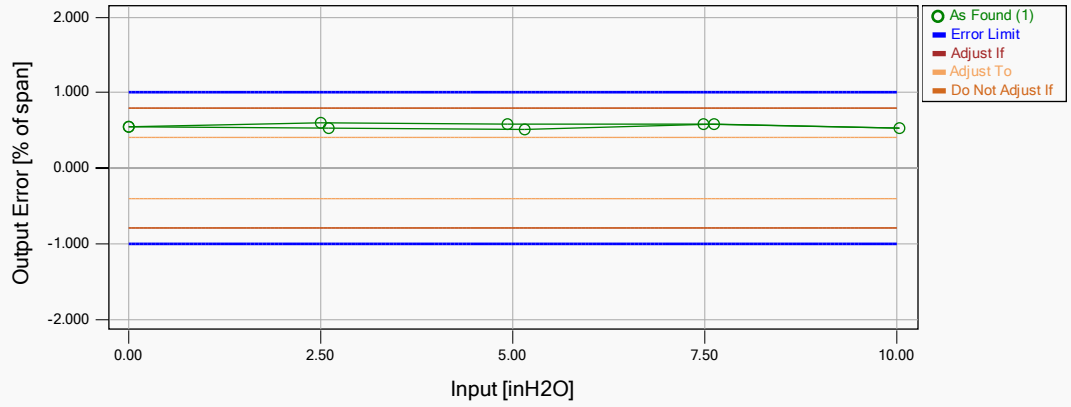
Calibration time	1/14/2020 1:42:26 PM
Next Calibration	
Environment	Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	P2C : 69381	Due Date: 4/17/2020
Output Calibrator	MC6 : 605835	Due Date: 4/16/2020
Output Module	IN : 25613	Due Date: 4/16/2020



1. As Found

PASSED, DO NOT ADJUST

Maximum Error: 0.596 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.00	4.0000	4.0888	0.555
2.500	2.51	8.000	8.1113	0.596
5.000	4.94	12.000	11.9963	0.577
7.500	7.49	16.000	16.0758	0.574
10.000	10.04	20.000	20.1499	0.537
7.500	7.63	16.000	16.3015	0.584
5.000	5.16	12.000	12.3389	0.518
2.500	2.61	8.000	8.2594	0.521
0.0000	0.00	4.0000	4.0879	0.549

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/14/2020 1:42:26 PM

Calibration Certificate

Certificate Number:

Position ID: 4-PDIT-403

Printed: 1/16/2020 8:30:25 AM
Printed by: vnguyen
CMX Version: 2.11.214.0 (2.11)

Position

Name	U4 SCR DP
Work Order Number	
Location	U4 ERU
Plant	CANYON/ERU/U4/

Device

Device ID	4-PDIT-403	
Serial Number	393481	
Manufacturer	Rosemount 3051C	
Rangeability		
Operating		Operating Humidity

Function

Name	U4 SCR DP (ud)	
Transfer Function	Linear	
Range	0 ... 10 inH2O (G)	4 ... 20 mA

Calibration Event

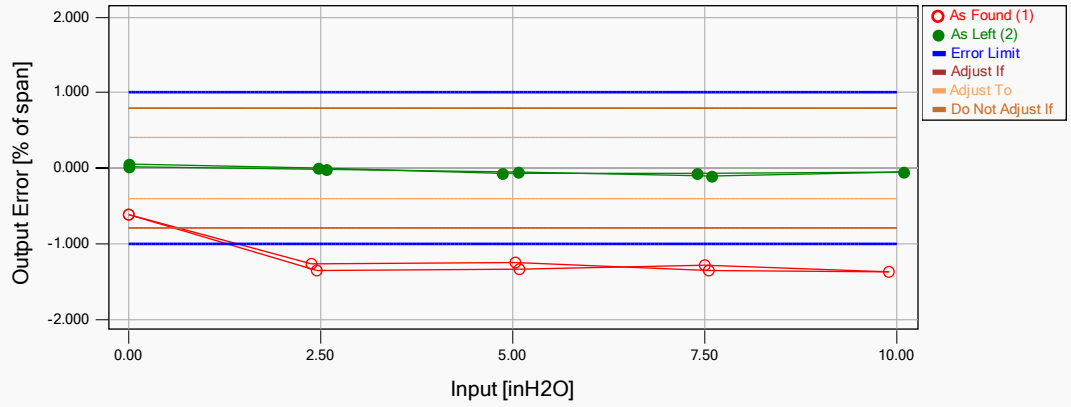
Calibration time	1/14/2020 2:45:52 PM	
Next Calibration		
Environment		Environment

Calibration Procedure

Due Date		Interval	0
Reject If Error >	1 % of span		
Adjust To Error <	40 % of Reject If Error	Classification	
Calibration Strategy			

Calibrators

Input Calibrator	MC6 : 605835	Due Date: 4/16/2020
Input Module	P2C : 69381	Due Date: 4/17/2020
Output Calibrator	MC6 : 605835	Due Date: 4/16/2020
Output Module	IN : 25613	Due Date: 4/16/2020



1. As Found — FAILED

Maximum Error: -1.366 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.00	4.0000	3.9011	-0.618
2.500	2.45	8.000	7.7031	-1.356
5.000	5.09	12.000	11.9297	-1.339
7.500	7.50	16.000	15.7944	-1.285
10.000	9.90	20.000	19.6214	-1.366
7.500	7.56	16.000	15.8792	-1.355
5.000	5.04	12.000	11.8635	-1.253
2.500	2.39	8.000	7.6213	-1.267
0.0000	0.00	4.0000	3.9011	-0.618

2. As Left — PASSED, DO NOT ADJUST

Maximum Error: -0.108 % of span

Nominal Input [inH2O]	Actual Input [inH2O]	Nominal Output [mA]	Actual Output [mA]	Found Error [% of span]
0.0000	0.00	4.0000	4.0076	0.048
2.500	2.48	8.000	7.9688	0.005
5.000	4.87	12.000	11.7818	-0.064
7.500	7.41	16.000	15.8455	-0.066
10.000	10.09	20.000	20.1356	-0.053
7.500	7.59	16.000	16.1267	-0.108
5.000	5.07	12.000	12.1031	-0.056
2.500	2.58	8.000	8.1261	-0.012
0.0000	0.01	4.0000	4.0182	0.014

Calibration Note:

Calibrated by: VINCENT NGUYEN
1/14/2020 2:45:52 PM

CANYON POWER PLANT

ANNUAL COMPLIANCE REPORT

ATTACHMENT 21

WASTE-10
COOLING TOWER SLUDGE TESTING

No Sludge developed for CY 2020