Exhibit A

Date of Request: July 3, 2023 Request No. CNY-067
Due Date: July 13, 2023 NG Request No. NG-735

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Adam Conway

TO: National Grid

SUBJECT: Gas Infrastructure and Operations Panel

Request:

For each of KEDNY and KEDLI, please identify for each fiscal year (FY) starting with FY 2017, the number of non-pipe alternatives (NPAs) identified by each company as well as the number of NPAs actually implemented by each company. Please specify if the NPA was for a Leak Prone Pipe replacement project, other mandated project, or a part of a pilot program.

Response:

The Companies incorporated a non-pipe alternatives ("NPA") analysis as a standard review item in their capital planning processes in 2021 and look for opportunities to offset new construction, replacement projects, and other capital work with NPAs, where possible. Individual NPA analyses were provided in the project data sheets included as Exhibit __ (GIOP-5) to the direct testimony of the KEDNY and KEDLI Gas Infrastructure and Operation Panels. In August 2022, the Companies also filed NPA screening and sustainability criteria and NPA cost incentive and recovery proposals in the Commission's Gas Planning Proceeding (Case 20-G-0131), both of which are presently pending Commission approval. Please see below for specific examples of the Companies' efforts to incorporate NPAs into capital projects and programs.

Leak Prone Pipe Projects
Pursuant to Section 5.3.2(v) and 7.5.5(b) of the 2019 KEDNY and KEDLI Rate Case Joint Proposal, beginning in FY 2022, the Companies annually identify at least five segments of LPP that could be abandoned if all customers connected to those main segments converted to NPAs. The Companies' identification process involves analysis of the impact on the overall gas network, customer alternative heating options, location and terrain, and other project specific factors. The Companies conduct outreach after the potential LPP segments are identified to determine whether customers connected to the existing main would be willing to convert to an NPA. Thus far, none of the projects have been replaced with NPAs as the Companies were unable to get the required customer consent.

Mandated Customer Connections Work

Pursuant to Section 7.5.5(c) of the 2019 KEDNY and KEDLI Rate Case Joint Proposal, the Companies look for opportunities to implement NPAs in lieu of new customer extensions over 500 feet in length that will serve five or more customers. Upon receiving a request of this size, the Companies will ask the requesting customer if he or she is interested in an NPA alternative. The Companies will then conduct an analysis for interested customers to determine whether an NPA is feasible and cost beneficial for the potential customer. The requesting customer is then presented with available options and allowed to make their selection based on their service needs. Extensions of this nature are uncommon in KEDNY's service territory. In KEDLI's service territory, there have been over 50 projects with extensions of this nature where the Company has presented the requesting customer with information regarding potential NPA options. One of those projects has expressed interest in pursuing an NPA in lieu of gas connections and the design and project implementation are currently being reviewed with the developer.

NPA RFPs

The Companies issued two RFPs for third-party demand-side NPAs in FY 2022 and FY 2023 for other capital projects. As part of these RFPs, the Companies identified three locations where demand reduction would be beneficial to the network. There were no bids on the FY 2022 NPA RFP. The FY 2023 NPA RFP bid is currently in the review process prior to potential award and implementation. The Companies are finalizing their selection of at least one third-party NPA project to address system needs in either KEDNY or KEDLI's territory. The Companies intend to issue another RFP during the third quarter of 2023.

Geothermal Networks

KEDNY and KEDLI separately filed geothermal pilot project proposals in response to the Commission's *Order on Developing Thermal Energy Networks Pursuant to the Utility Thermal Energy Network and Jobs Act* (Case 22-M-0429).

Name of Respondent:
Saadat Khan
Owen Brady-Traczyk

Date of Reply:
July 12, 2023

Exhibit B

Date of Request: July 25, 2023 Request No. NRDC-010
Due Date: August 4, 2023 NG Request No. NG-1112

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Chris Casey

TO: National Grid

SUBJECT: GIOP

Request:

Please refer to Exhibit __ (GIOP-5) at page 169. Please elaborate on the role that Non-Pipes Alternatives ("NPAs") play in the LPP prioritization process, describing the following:

a. How did the Company select the five projects under the Main Replacement Proactive Program that it identified as NPA candidates? Please describe in detail the process for identifying and screening projects, including criteria for evaluating projects, any minimum requirements and target values/attributes for each criterion, and scoring for each project considered.

   i. Also provide the following: description of the resource (e.g., demand response, energy efficiency, electrification, alternative fuel), a breakout of cost (e.g., by operations and maintenance vs. capital cost), avoided or displaced therms, cost per avoided or displaced therm, lifetime of the project, lead time needed, avoided GHG emissions, and any other characteristic relevant for the decision whether to pursue the project.

b. Please provide the Company's analysis of NPAs for each of these five projects, including all supporting documentation and workpapers with formulas intact and with sources and assumptions clearly identified.

c. How did the Company determine customer interest to move forward with the NPAs for each of these five projects?

Response:

a. Pursuant to Sections IV.5.3.2(v) and IV.7.5.5(b) of the 2019 KEDNY and KEDLI Rate Cases Joint Proposal, beginning in fiscal year (“FY”) 2022, the Companies annually identify at least five segments of leak-prone pipe (“LPP”) that could be abandoned if all customers connected to those main segments converted to non-pipe alternative (“NPA”).

The Companies' identification process involves analysis of the impact on the overall gas network (*i.e.*, not a critical main or primary feed), impact on local reliability, customers' alternative heating options, location and terrain, and other project specific factors. The Companies conduct outreach after the potential LPP segments are identified to determine whether customers connected to the existing main would be willing to convert to an NPA. Thus far, none of the projects have been replaced with NPAs as the Companies were unable to get the required customer consent.

i. None of these analyses were performed on the selected LPP NPA segments.

b. Please see Attachment 1 (Confidential). Attachment 1 is confidential and should be protected from disclosure pursuant to the terms of the Protective Order adopted in these proceedings.

c. In FY 2022, the Companies hired a consultant to reach out to customers along the proposed project paths to describe the process, benefits, and cost of an NPA. The outreach conducted by the consultant gauged customer interest in converting to non-gas alternatives for heating, cooking and dryers. During the second year, the Companies' employees conducted customer outreach using the same process developed by the consultant.

Name of Respondent:
Saadat Khan

Date of Reply:
August 4, 2023

Exhibit C

Date of Request: May 30, 2023 Request No. DPS-354
Due Date: June 9, 2023 NG Request No. NG-364

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Davide Maioriello

TO: National Grid

SUBJECT: Renewable Natural Gas Interconnections

Request:

In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

1. Regarding the proposed renewable natural gas (RNG) interconnections for both KEDNY and KEDLI, provide the following information for each of the RNG projects:

   a. Project development/design status.

   b. Project site location and necessary site commitments in place and outstanding.

   c. Project developer commitments/contracts in place.

   d. Type of service to customer (firm or non-firm).

   e. The expected operating pressure of the interconnection piping.

   f. The maximum operating pressure of the interconnection piping.

   g. A list of outstanding project permits.

   h. The expected in-service date.

Response:

KEDNY RNG Interconnection 1:

1. a. This project is currently in conceptual design status.

b. The project is at an active wastewater treatment plant located at 154-42 134th Street in Queens, NY. The site is owned by New York City (the "City"), and KEDNY will negotiate and obtain rights and an easement for site access and for the construction, installation, operation, maintenance, repair, and replacement of all KEDNY-owned equipment at the site. At this time, no other additional property rights are required.

c. This facility is an active wastewater treatment plant, which is already producing biogas on-site and flared gas. The City is exploring options, including public-private partnerships, to help expedite the development of the gas-to-grid system. A Request for Expressions of Interest was issued by the City to explore gas-to-grid ("RNG") throughout the City's wastewater resource recovery facilities ("WRRFs"). The facility is listed as a viable RNG project for which the City intends to move forward. It is anticipated that gas sales, facilities construction and reimbursement agreement, and operations and maintenance agreements will need to be executed between the parties; however, those agreements have not yet been developed.

d. Firm.

e. This facility will connect to the adjacent transmission line. The operating pressure of this line varies seasonally and typically does not exceed 345 psi.

f. The maximum operating pressure of the interconnected transmission piping is 350 psi.

g. The developer will be responsible for obtaining all building fire, design commission, and Title V air permits associated with the project. The Company will obtain the permits required for the RNG receiving station, which, at this time, is expected to include a permit for the bulk storage of odorant, a flammable material.

h. The expected in-service date is tentatively scheduled for early to mid-2027.

KEDNY RNG Interconnection 2:

1. a. This project is currently in conceptual design status.

b. The developer is currently drafting agreements to purchase land rights required for the facility. The land rights are expected to be secured by September 2023. KEDNY will negotiate and obtain rights and an easement for site access and for the construction, installation, operation, maintenance, repair, and replacement of all KEDNY-owned equipment at the site. At this time, no other additional property rights are required.

c. The developer has issued a letter of intent to the Company to proceed with the RNG project. It is anticipated that gas sales, facilities construction and reimbursement agreement, and operations and maintenance agreements will need to be executed between the parties; however, those agreements have not yet been developed.

d. Firm.

e. This facility will connect to the adjacent transmission line. The operating pressure on this line varies seasonally and typically does not exceed 345 psi.

f. The maximum operating pressure of the interconnected transmission piping is 350 psi.

g. The developer will be responsible for obtaining all building fire, design commission, and Title V air permits associated with the project. The Company will obtain the permits required for the RNG receiving station, which is anticipated to require only a permit for the bulk storage of odorant, a flammable material.

h. The expected in-service date is tentatively scheduled for early to mid-2027.

KEDLI RNG Interconnection 1:

1. a. This project is currently developing a Basis of Design Report.

b. This is an active wastewater treatment plant located at 2 Marjorie Lane in East Rockaway, NY. The site is owned by the City, and KEDLI will negotiate and obtain rights and an easement for site access and for the construction, installation, operation, maintenance, repair, and replacement of all KEDLI-owned equipment on the site. At this time, no other additional property rights are required.

c. The developer has issued a letter of intent to KEDLI to proceed with the RNG project. It is anticipated that gas sales, facilities construction and reimbursement agreement, and operations and maintenance agreements will need to be executed between the parties; however, those agreements have not yet been developed.

d. Firm.

e. This facility will connect to the adjacent distribution line. The operating pressure on this line varies seasonally and typically does not exceed 58 psi.

f. The maximum operating pressure of the interconnected distribution piping is 60 psi.

g. The developer will be responsible for obtaining all building fire, design commission, and Title V air permits associated with the project. KEDLI will obtain the permits required for the RNG receiving station, which is tentatively expected to be just the bulk storage of odorant, a flammable material.

h. The expected in-service date is tentatively scheduled for early to mid-2027.

KEDLI RNG Interconnection 2:

1. a. This project is currently in conceptual design status.

b. The site is located in an industrial development, Calverton Executive Park, in Calverton, NY. KEDLI will negotiate and obtain rights and an easement for site access and for the construction, installation, operation, maintenance, repair, and replacement of all KEDLI-owned equipment on the site. At this time, no other additional property rights are required.

c. The developer has issued a letter of intent to KEDLI to proceed with the RNG project. It is anticipated that gas sales, facilities construction and reimbursement agreement, and operations and maintenance agreements will need to be executed between the parties; however, those agreements have not yet been developed.

d. Firm.

e. This facility will connect to the adjacent distribution line. The operating pressure on this line varies seasonally and typically does not exceed 122 psi.

f. The maximum operating pressure of the interconnected distribution piping is 124 psi.

g. The developer will be responsible for obtaining all building fire, design commission, and Title V air permits associated with the project. The Company will obtain the permits required for the RNG receiving station, which is tentatively expected to be just the bulk storage of odorant, a flammable material.

h. The expected in-service date is tentatively scheduled for early to mid-2027.

Name of Respondent: Pradheep Kileti

Date of Reply: June 9, 2023

Exhibit D

Date of Request: February 9, 2024 Request No. WE ACT-0150
Due Date: February 20, 2024 NG Request No. NG-1467

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project & Proposed RNG Interconnection Projects

Request:

Please refer to the KEDNY GIOP testimony at page 82, where the Company explains that the "conditioning system includes gas compression, moisture knockout, gas condition and waste stream collection and flaring."

a. Please explain why flaring takes place during the condition/purification process.

b. Please explain in detail what gas compression entails.

c. Please explain in detail what moisture knockout entails.

d. Please explain in detail what gas condition and waste stream collection entails.

e. Please explain in detail what flaring entails.

f. What source of energy does National Grid use to power each stage of the process of the RNG conditioning/purification system at the Newtown Creek Wastewater Treatment Plant?

    i. Does it use biogas produced at the Newtown Creek Wastewater Treatment Plant?

Response:

The biogas that is supplied to the conditioning system contains methane, carbon dioxide, moisture, and other impurities. The conditioning system dries the incoming biogas. Then, the system separates the waste (carbon dioxide and impurities) out of the stream to produce pipeline quality gas.

a. Flaring takes place during the condition/purification process because the biogas, as-is, does not meet pipeline quality specifications and requires processing. A thermal oxidizer is used in the conditioning system to handle the waste stream from the separation step.

b. Gas compression is when biogas is pulled from the holding tank into the compressor. As the rotors on the compressor turn, the volume of the biogas is reduced and pressure is increased.

c. Moisture knockout is where water is removed from the biogas.

d. Gas condition and waste stream collection is the processing of the biogas from the wastewater treatment plant to bring it to pipeline quality gas. This entails removal of water, carbon dioxide and other impurities from the biogas that is supplied. The final step before the gas goes into the distribution system is to add odorant.

   The waste stream collection is composed of a buffer vessel, pumps, and the thermal oxidizer.

e. Flaring is the combustion of gases at high temperatures.

f. Electrical power is needed to operate. The thermal oxidizer uses natural gas as the fuel source for combustion. The gas compressor step generates heat, some of that heat is recycled and utilized in the conditioning system.

   i. Yes.

Name of Respondent:
Dennis Leyble

Date of Reply:
February 20, 2024

Exhibit E

Date of Request: July 28, 2023 Request No. WE ACT- 0105
Due Date: August 7, 2023 NG Request No. NG-1204

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Meagan Burton

TO: National Grid

SUBJECT: General Provisions

Request:

In response to DPS-243, the Companies stated that "[t]here are presently three locations injecting or soon-to-be injecting RNG into the system."

a. Please provide the address of each location.

b. Please provide the name of each entity from which RNG will be purchased at each location.

c. How was the RNG at each location produced? Please identify both the feedstocks and the method used.

d. Please provide the price (in dollars per million btu) of the RNG that is being injected or will soon be injected into the system.

e. How many million btu of RNG are currently injected into the system?

Response:

The three projects referenced above are Newtown Creek, American Organic Energy ("AOE"), and Fresh Kills landfill.

- Newtown Creek completed commissioning in March 2023.
- AOE is currently in construction and estimated to complete commissioning in the fourth quarter of 2024.
- Fresh Kills Landfill was in operation for over two decades before closing in 2019. A study is currently underway to evaluate the remaining gas potential of the landfill and the merit of rehabilitating the conditioning system onsite.

a.

- Newtown Creek is located at 329 Greenpoint Avenue, Brooklyn, NY 11222.
- AOE is located at 445 Horseblock Road, Yaphank, NY 11980.
- Fresh Kills Landfill is located at 1010 Muldoon Ave, Staten Island, NY 10312.

b.

- National Grid and the New York City Department of Environmental Protection are partners on the Newtown Creek RNG project. The partnership involves selling the credits associated with the project.
- AOE is being developed by Viridi Energy. National Grid will only purchase the credit less gas.
- Fresh Kills landfill is not currently selling gas.

c.

- Newtown Creek - Anaerobic digestion with sludge and food waste.
- AOE – Anaerobic digestion of food waste,
- Fresh Kills Landfill - Anaerobic digestion of municipal solid waste within the landfill.

d.

- Please see the Company's response to WE ACT-0109 for the price of RNG from the Newtown Creek plant.
- **BEGIN CONFIDENTIAL MATERIAL** [redacted] **END CONFIDENTIAL MATERIAL**
- Fresh Kills landfill is not currently selling gas.

e. Newtown Creek is the only active project injecting into the system. It has a peak design flow of 760 Dth/day, which would yield over 275,000 MMBtu/year.

Name of Respondent:	Date of Reply:
Brian Barkwill	August 7, 2023

Exhibit F

Date of Request: January 8, 2024 Request No. KCT-01
Due Date: January 18, 2024 NG Request No. NG-1448

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Katherine Conkling Thompson

TO: National Grid

SUBJECT: Methane gas flaring at Newtown Creek Wastewater Treatment Plant

Request:

1. When does the company burn off methane gas?
    a. Is the methane flaring scheduled?
    b. Why does the system shut down periodically? Is it shut down automatically or is it shut down manually?
2. How often does the system shut down and burn off methane?
    a. Is there a record of dates? If so, can the company provide dates?
    b. Why does the company need to burn off methane gas?
    c. What would happen if the company did not burn off methane gas?
    d. When the company burns off methane how long does the process take?
3. Does the company have a method for measuring the intensity of the methane flaring?
    a. If so, what is the method?
    b. If not, what is the reason for not collecting this information?
4. What is the rate of methane flaring over the course of the past 5 years?
    a. How many hours a day is methane flared?
    b. What is the methane intensity of the flaring?
    c. What are the variables that affect the intensity of methane flaring?

5. Methane flaring has emissions of pollutants including, but not limited to, benzene and naphthalene which are released into the air.

    a. Is the company tracking the amount of methane emissions of pollutants into the air?

    b. If so, what pollutants have been recorded having been released into the air?

    c. What is the amount of the pollutants released into the air?

    d. How does the intensity of methane flaring affect the volume of emission pollutants released into the air?

Response:

1. The New York City Department of Environmental Protection ("NYCDEP") operates the Newtown Creek Wastewater Treatment Plant (the "Plant"). That facility contains four flare units managed by the NYCDEP. KEDNY does not operate the flare units nor does it conduct flaring at the Plant. Rather, KEDNY operates a purification system at the Plant. The purification system allows waste stream to be combusted; renewable natural gas is sent to the gas distribution system. If the system is offline for maintenance, the Plant will conduct flaring to burn excess methane produced by the Plant.

    a. See the response to question 1 above.

    b. The purification system is designed to automatically shut down if the system senses an unexpected process condition. The system can also be shut down manually for routine maintenance. Please see the Companies' response to WE-ACT-0139.

2. Please see the Companies' response to question 1, above.

    a. The RNG project was offline periodically beginning in mid-August to diagnose and address an unexpected process condition. Since January 5, it has been online and operational.

    b.-d. Please see the Companies' response to question 1, above.

3.-5. The Company does not operate the Plant, and therefore, does not measure the flaring intensity or otherwise track flaring emissions associated with the wastewater treatment process.

Name of Respondent:
Dennis Leyble

Date of Reply:
January 19, 2024

Exhibit G

Date of Request: July 21, 2023 Request No. DPS-859
Due Date: July 31, 2023 NG Request No. NG-1066

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Sara Orsino

TO: National Grid

SUBJECT: KEDNY - Newtown Creek

Request:

In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Regarding the KEDNY Newtown Creek project,

1. Provide the budgets and actual spend for the Newtown Creek project from the beginning of the project to present. If there are variances, explain why and what the Company did to mitigate costs.

2. Provide the original in-service date the Company was expecting this project to be commissioned and the actual date the project was commissioned. If the project was commissioned after the original expected commissioned date, explain what the delay was and what the Company did to mitigate the extended timeframe.

3. Was a benefit cost analysis (BCA) performed before the project began? If yes, provide those BCA results. If no, explain the cost benefits for customers for this project.

4. Provide a copy of the contract agreement between KEDNY and the City of New York regarding the Newtown Creek Project.

Response:

1. Please see Attachment 1 for the budgets and actual spend for the Newtown Creek project.

2. The Newtown Creek project was developed in collaboration with the City of New York at one of the most complex wastewater treatment plants in the country creating a set of unique challenges that escalated the project timeline. The original planned in-service

date of the biogas conditioning system at its final location at the wastewater treatment plant was August 6, 2019, in line with the EPC Agreement executed with the contractor. The date the system went online following commissioning and system performance testing is March 31, 2023. The delay in achieving online operation was due to delays caused by COVID 19, contractor performance, system design modification, equipment issues, and extended commissioning and testing of new technologies. The Company's efforts to mitigate these risks include engaging additional resources, procurement of spare parts for extended commissioning and anticipated equipment failures, extended work-hours during commissioning/testing, and continued collaboration with the City of New York.

The in-service date for the biogas conditioning system planned for the first location was not finalized due to pending design approvals from the New York City Fire Department and PDC. At the time, the estimated in-service date ranged from October 2016 to February 2017. However, the estimated date ranges were no longer applicable after the project location was moved to its final location and a new project schedule had to be developed.

3. This project was developed in partnership with the New York City ("NYC") Department of Environmental Protection ("NYC DEP") prior to the establishment of National Grid's Network Development Process, so a BCA was not performed. The benefits of this project are centered on the reduction of carbon emissions in NYC by converting surplus biogas generated at the Newtown Creek Wastewater Resource Recovery Facility ("WRRF") to renewable natural gas ("RNG") that otherwise would be burned in the WRRF's flare stacks. The project leveraged National Grid's existing natural gas distribution network to deliver the RNG to local residents and businesses, which provides an additional on-system supply source and displaces fossil gas. This demonstration project also provides a roadmap for developers to collaborate with NYC DEP to convert surplus biogas at other NYC WRRFs into RNG and assist NYC with continued efforts for reducing carbon emissions.

4. Please see Attachment 2. Attachment 2 is confidential and should be protected from disclosure pursuant to the terms of the Protective Order.

Name of Respondent:	Date of Reply:
Dennis Leyble	July 31, 2023

ATTACHMENT A - Project Annual Budget Versus Spend by Fiscal Year

REQUEST NO. DPS -895

Fiscal Year (FY)	FY Date Range	Budget $	Actual Spend **	Project Phase	Variance Exceedance Comments
FY14	4/2013 to 3/2014	NA	$ 1,350	Project set up	budget information not available
FY15	4/2014 to 3/2015	$ 1,500,000	$ 1,790,649	System design (Greenpoint Ave location 1)	Additional engineering system design requirements
FY 16	4/2015 to 3/2016	$ 5,388,998	$ 5,761,068	System design/permitting/equipment purchase(Greenpoint Ave location 1)	Change Orders for additional equipment
FY 17	4/2016 to 3/2017	$ 3,500,000	$ 3,391,232	New system design/ permitting/FDNY/PDC - for new location	Redesign of system required for relocation of system inside the WWTP. Changing conditions required relocation of system.
FY 18	4/2017 to 3/2018	$ 3,000,000	$ 2,926,125	Permitting/FDNY/PDC - new location	Project construction held up until May 2018 pending FDNY design approval.
FY 19	4/2018 to 3/2019	$ 17,228,000	$ 10,058,520	System construction start	Contractor behind schedule . Assisted Contractor with schedule management.
FY 20	4/2019 to 3/2020	$ 9,099,900	$ 15,136,931	System construction	Contractor change orders for out of scope work, design changes, schedule delays from FY19 and FY20
FY 21	4/2020 to 3/2021	$ 3,385,000	$ 10,323,259	System construction	Delays in project schedule due to COVID 19 site shutdown . Includes damaged equipment replacement, operating overhead costs during delays plus contractor change orders for schedule delays. Additional engineering design for system control systems and system modifications.
FY 22	4/2021 to 3/2022	$ 6,610,000	$ 5,385,942	System construction and equipment commissioning	Delays in project schedule due to system modifications, repairs, and precommissioning. Contractor change orders not submitted in FY22 and in negotiation
FY 23	4/2022 to 3/2023	$ 5,300,000	$ 1,396,791	Equipment commissioning/testing/equipment modification and repair	Delays in project schedule due to system modifications, system repairs, commissioning. Contractor change orders for FY23 in negotiation.
FY24	4/2023 to 3/2024	$ 15,563,000	$ 416,427	Commissioning/testing/equipment modification and replacement/ project close out with contractor	Spend as of 7/2023 shown. Planned system modifications and equipment replacement by National Grid in process. Contractor final bills and change orders (in negotiation) and potential project delay claims not yet received.
TOTAL		**$ 70,574,898**	**$ 56,588,295**		

Source: ** SAP

Exhibit H

Date of Request: April 19, 2024 Request No. WE ACT- 0162
Due Date: April 29, 2024 NG Request No. NG-1481

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Response to WE ACT-152(b), in which the Company stated that in April 2024 it would submit a report to the New York City Department of Environmental Protection with emissions data from the Newtown Creek RNG Facility.

a. Please share the report referenced in Response to WE ACT-152(b).

Response:

a. Attachment 1 is a copy of National Grid's Purification System Annual Report.

Name of Respondent: Date of Reply:
Dennis Leyble April 26, 2024

nationalgrid

April 19, 2024

New York City Department of Environmental Protection Bureau of Wastewater Treatment
96-05 Horace Harding Expressway
Corona, New York 11368

Re: National Grid Newtown Creek Biogas Purification System 2023 Concession Year Annual Report
DEP Construction License and Concession Agreement Between The City of New York and The Brooklyn Union Gas Company.

Deputy Commissioner:

Please find the attached Annual Report for National Grid's Newtown Creek Biogas Purification System. Pursuant to section 7.5.(b) of the Construction License and Concession Agreement (The Agreement) between the City of New York and The Brooklyn Union Gas Company (National Grid), National Grid is fulfilling its obligation to provide the City with a detailed written report that satisfies the criteria listed in section 7.5.(b)(ii).

The report covers all four sections within 7.5.(b)(ii) including a section that describes the accounting of all costs incurred by National Grid, a section describing the emissions reduction, a section that describes any incidents involving Environmental Health and Safety, and a section describing any interactions with Governmental Authorities.

As it is important to note, section 7.5.(b)(ii)(1) and 7.1.(b) of The Agreement states that a Monetary Compensation is required to The City and shall be calculated utilizing the prescribed format labeled ***Schedule 7.1.*** Schedule 7.1 is to be included within The Annual Report. At this time, National Grid is unable to complete Schedule 7.1 due to the fact that the electric bills have not been reconciled. It is with anticipation that the bills will be issued within the near future and National Grid will send an amended version of the Annual Report with Schedule 7.1 included.

Also included, please find the Title V Air Permit Report. Pursuant to section 7.5.(c) of The Agreement, National Grid is required to submit a report that includes all information and data concerning the Title V Air Permit that The City is required to submit to NYSDEC under applicable Legal Requirements.

Thank you,

Jason Buczek
Director of NYS Instrumentation and Regulation

1125 Broadway
Albany, NY 12204

nationalgrid

cc: General Counsel New York City Department of Environmental Protection
59-17 Junction Blvd., 19th Floor
Flushing, New York 11373

Certification for National Grid Purification System Annual Report and Title V Air Report

Jason Buczek, hereby certifies that the attached National Grid Annual Report and Title V Air Report for the Concession Year from March 31, 2023- April 1, 2024 prepared for the National Grid Purification System pursuant to the requirements of the Construction License and Concession Agreement between The City of New York and The Brooklyn Union Gas Company d/b/a National Grid NY are accurate and complete to the best of my knowledge.

Jason Buczek
Director of NYS Instrumentation and Regulation
National Grid
Dated: April 19, 2024

National Grid Purification System Annual Report dated April 19, 2024

Executive Summary

Pursuant to the requirements of Section 7.5 of the Construction License and Concession Agreement between the City of New York and National Grid ("Agreement"), we are hereby submitting this Annual Report to provide a comprehensive overview of National Grid's renewable natural gas (RNG) facility operating at Department of Environmental Protection's (DEP) Newtown Creek wastewater treatment plant. The report, covering twelve months from April 2023 to end of March 2024, will summarize and provide the following:

- Data from the monthly reports
- All costs incurred by National Grid
- Emission reduction
- Any incidents involving environmental, health and safety issues
- Interactions with governmental authorities

The Newtown Creek RNG facility commenced operations on March 31st, 2023. The project's overall construction cost, including start up and commissioning, was $56,567,940.00 to date. Over the course of the year, the Purification System produced 116,717 dekatherms (dth) of RNG, reducing emissions by over 30,400 MT of CO_2e.

Monthly Reports Information

The Annual Report summarizes the data provided in National Grid's Monthly Reports with respect to information on gas metering, electricity consumption, gas quality, efficiency, and operation time.

The National Grid Purification System does not draw water from the City's supply lines for operation.

During the concession year, the system produced 115,852 MCF of sales gas or 116,717 Dth.

Electricity Usage:

During the concession year (April 2023 to March 2024), the System used 2,384,065 kWh. A monthly summary can be found in the table below:

Table 1: Plant Monthly Energy Usage	
Month	Electricity Usage (kWh)
April 2023	301,875
May 2023	215,625
June 2023	225,938
July 2023	334,375
August 2023	130,625
September 2023	5,313
October 2023	6,875
November 2023	28,750
December 2023	218,750

January 2024	262,813
February 2024	359,063
March 2024	294,063

Efficiency of the purification system:

During this concession year, the National Grid Purification System had an average efficiency of ~ 90.6%. Efficiency was estimated as a ratio of the System's average methane output and the average methane feed to the System. Prior to the methane analyzers installation at the digester building in August 2023, ~65% methane was assumed in the dry feed composition to estimate the efficiency.

Purification System Hours of Operation and Downtime:

Between April 2023 to March 2024, the System has approximately 4,719 hours of operation and 4,065 hours of downtime.

Gas constituents:

The constituents measured on the sales gas line are moisture, sulfur, methane, carbon dioxide, nitrogen, and oxygen levels. Data was pulled from the System's historian to spreadsheets, formatted in 15-minute intervals.

Costs incurred by National Grid

Costs of construction and installation of the National Grid Purification System

- During the concession year, the cost associated with the Project is $1,617,778.00.

Any Impositions, utility costs for Concession Year

- National Grid paid to NYC Department of Finance $2,704,823.12 for property taxes in 2023
- National Grid has not received the electricity invoice(s) at the time of this report. National Grid has used 2,384,065 kWh during the concession year.
- Operations and maintenance costs are $263,648.50. These costs do not include electricity usage costs. We are awaiting bills from the DEP on electric usage.

Emissions Reductions

Over the course of the year, the Purification System produced 116,717 dekatherms of renewable natural gas, reducing emissions by over 30,400 MT of CO_2e. DEP has first right to all biogas the emissions calculations below only take into account the biogas conditioned to RNG.

To develop the emissions reductions calculations, we made the following assumptions:

- Mass Loading
  - Assumed 20/80 split Food waste to WWTP (wastewater treatment plant) Sludge in Digesters 1-4
  - 100% sludge in Digesters 5-8
  - Overall split of 10/90 Food waste to Sludge

- Emissions Factors based upon NYSERDA's Potential of Renewable Natural gas in New York State Report
  - Food Waste = -0.4221 MT CO2e/MMBtu
  - Wastewater Sludge = -0.1448 MT CO2e/MMBtu
  - Avoided Natural Gas Use = -0.08832 MT CO2e/MMBtu

Based on these assumptions

Wastewater Sludges Emissions Benefits = -0.1448 MT CO2e/MMBtu * 0.9 * 116,717 dth

-15,210.56 MT CO2e/MMBtu

Food Waste Emissions Benefits = -0.4221 MT CO2e/MMBtu * 0.1 * 116,717 dth

-4,926.62 MT CO2e/MMBtu

Avoided Natural Gas Use = -0.08832 MT CO2e/MMBtu * 116,717 dth

-10,308.45 MT CO2e/MMBtu

Total Emissions Reductions = -30,436.63 MT CO2e/MMBtu

Disposal of Matter

Waste was generated at the site due to work activities, such as equipment cleanouts, filter changes, and fluid replacement. National Grid contracted Veolia, Miller Environmental and Clean Harbors to assist with the waste disposal.

Please refer to Table 2 for a list of matter disposed in connection to the National Grid Purification System.

Table 2: Summary of Matter Disposed at the National Grid Biogas Plant

Ship Date	Uniform Manifest #	Quantity Shipped	Internal Profile Description	Disposal Method
12/26/2023	METRO2558	50 Gallons	OIL WITH WATER	RECYCLE
12/26/2023	METRO2636	60 Pounds	NON RCRA AND DOT NON-REGULATED SOLID	LANDFILL
11/3/2023	506200	600 Pounds	NON REGULATED MATERIAL	THERMAL TREATMENT
11/3/2023	506200	1650 Pounds	NON RCRA AND DOT NON-REGULATED LIQUID	THERMAL TREATMENT
10/11/2023	METRO1586	50 Pounds	NON RCRA AND DOT NON-REGULATED SOLID	LANDFILL
10/11/2023	METRO1606	100 Gallons	OIL WITH WATER	RECYCLE
6/23/2023	2303239691003	150 Gallons	OIL WITH WATER	RECYCLE
6/15/2023	969100	150 Pounds	NON RCRA AND DOT NON-REGULATED LIQUID	THERMAL TREATMENT
5/9/2023	ZZ00987204	400 Pounds	WASTE WATER	RECYCLE

Environmental Health and Safety

On June 27, 2023, a release of gas occurred due to crack in a Swagelok coupling fitting that connects tubing to pressure transmitter PT112A. National Grid closed the shut off valve supplying the device and replaced the fitting. The Plant was subsequently returned to service
Incident Event # 20230812-1

On August 14, 2023, a release of compressor fluid from the feed compressor skid occurred. National Grid applied absorbent material to the area and called Miller Environmental Group (MEG) to remediate the spill.

Interaction with Governmental Authorities

On June 20, 2023, the NYS Department of Public Service (DPS) conducted a review of the process and major pieces of equipment of the Purification System.

On August 10, 2023, Fire Department, City of New York (FDNY) issued a Fire Department Permit (Site-Specific) for the operation of the Digester Gas Conditioning System (DGCS), Liquid Odorant Storage, and Bulk Fire Protection System at 327 Greenpoint Avenue, Brooklyn NY. The Permit Expiration Date is 8/17/2024.

On August 14, 2023, National Grid reported the incident to the New York State Department of Environmental Conservation (NYSDEC) Spill Hot Line. The NYSDEC Spill Hotline assigned Spill # 2304131 to the incident. The cause of the release was reported as equipment failure. The estimated volume of the released fluid was reported as 10 gallons. NYSDEC closed out Spill # 2304131 on 8/15/2023.

On October 10, 2023, National Grid met with Assemblymember Emily Gallagher and Councilman Lincoln Restler. The purpose of the meeting was to brief the officials on the vibration issue of the Purification System first experienced on August 14th, 2023.

The New York State Public Service Commission (NYSPSC) is currently auditing the calendar year 2023 inspection records for the National Grid Purification System. The results of the audit will not be published until Summer 2024.

On October 17, 2023, and March 8, 2024, FDNY issued Hot Work Permits to National Grid for hot work activities associated with modification of the DGCS feed compressor outlet pipe and the installation of additional pipe supports for feed compressor outlet pipe.

On October 17, 2023, National Grid received correspondence from Alex Eng, PE (FDNY) approving plans submitted by National Grid on October 10, 2024, for the modification of the feed compressor outlet pipe and the installation of additional pipe supports would be an equipment upgrade/replacement in kind.

On March 5, 2024, National Grid received correspondence from Alex Eng, PE (FDNY) informing National Grid that the FDNY has no objections to National Grid's plans to modify the existing pipe supports for the feed compressor outlet pipe and install two orifice plates submitted on March 4, 2024

On March 14, 2024, the U.S. Energy Information Administration (EIA) contacted National Grid to complete form EIA-176 for the National Grid Purification System. National Grid confirmed with EIA that the information needed was reported under Brooklyn Union Gas filings.

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Title V Air Permit Report

Newtown Creek Biogas Facility
Brooklyn, New York

Introduction

The National Grid Purification System falls within the Department of Environmental Protection's (DEP) Title V air permit, permit ID 2-6101-00025/00057. National Grid contacted the DEP on February 9th, 2023 to review the air permit and to coordinate an emission stack test to establish a baseline emission level

Emission Stack Test

National Grid contracted AirNova to assist with stack testing of the National Grid Purification System's thermal oxidizer. As per the coordination call with DEP, the test protocol was submitted to DEP for their review prior to stack testing.

The stack test was conducted on March 13, 2023. AirNova prepared a report summarizing the event, including the methods used, data collected and results. The stack test shows that the thermal oxidizer has an emission rate was 0.044 lb of nitrogen oxides (NOx) per MMBtu.

The report can be found on Appendix A.

Thermal Oxidizer Emissions

The table below summarizes the NOx emission emitted from the National Grid Purification System's thermal oxidizer for the given concession year.

Month	Lb of NOx
2023-04	154
2023-05	130
2023-06	65
2023-07	119
2023-08	62
2023-09	0
2023-10	0
2023-11	8
2023-12	84
2024-01	105
2024-02	173
2024-03	160
Total	1060

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Appendix A

Emission Stack Test Report

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Title V Report - Appendix A .pdf

New York City Department of Environmental Protection
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York

Thermal Oxidizer
Emission Compliance Test Report

Facility NYSDEC ID 2610100025
Title V Permit ID 2-6101-00025/00057

Project No. 4872

Test Date: March 13, 2023

Prepared for:

Mr. Rex Chen
Engineer - Environmental Management
National Grid
175 East Country Road
Hicksville, New York 11801

Submitted to:

Mr. Randy Orr
Chief, Combustion Section
Division of Air Resources
New York State Department of Environmental Conservation
Bureau of Compliance Monitoring and Enforcement
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and

Mr. Sam Lieblich
Regional Air Pollution Control Engineer
New York State Department of Environmental Conservation - Region 2
1 Hunters Point Plaza
Bureau of Compliance Monitoring and Enforcement
47-40 21st Street, 2nd Floor
Long Island City, New York 11101-5407

Date submitted:

April 2023

TESTING FIRM CERTIFICATION
(AirNova, Inc.)

I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both for submitting false, inaccurate or incomplete information.

3/04/23
Date

Mr. Mark D. Daly
President, AirNova, Inc.

New York City Department of Environmental Protection
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Thermal Oxidizer
Emission Compliance Test Report
Facility NYSDEC ID 2610100025
Title V Permit ID: 2-6101-00025/00057
AirNova, Inc. Project No. 4872
Test Date: March 13, 2023

Air Emission Testing Body - Self-Certification

I certify that AirNova, Inc. is an Air Emission Testing Body (AETB) which operates in conformance with the standard practices of ASTM Method D7036.

24/04/23
Date

Mr. Mark D. Daly
President, AirNova, Inc.

AirNova Inc.
QI Program Information

QI	Andrew Mamrak
AETB	AirNova, Inc.
Phone	(856) 486-1500
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Exam Date	November 23, 2022
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1.0 Introduction

AirNova, Inc. conducted an Emission Compliance Test Program at the Newtown Creek Wastewater Treatment Plant located in Brooklyn, New York on March 13, 2023. The test program was conducted to demonstrate compliance with New York State Department of Environmental Conservation (NYSDEC) Title V Air Permit ID 2-6101-00025/00057 conditions for one (1) Thermal Oxidizer in operation at this site.

The test program determined emissions of nitrogen oxides (NO_x) at the exhaust stack associated with the Thermal Oxidizer. The test results provide the NO_x emission rate as lb/MMBtu.

AirNova, Inc. was responsible for the performance of the on-site sampling and sample analysis as well as preparation of this final report presenting the test results and discussions of all sampling and analytical methods utilized.

This report contains a description of the emission source, the test location, the test results and the test methodologies that were utilized in the performance of this program.

Questions or comments concerning this report may be directed to:

Testing Firm/Analytical Laboratory

AirNova, Inc.
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Source Contact

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327-69 Greenpoint Avenue
Brooklyn, New York 11222

Mr. Rex Chen
Engineer - Environmental Management
National Grid
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Email: rex.chen@nationalgrid.com

2.0 Source Description and Information

The Newtown Creek Wastewater Treatment Plant is a 310 million gallon per day secondary Wastewater Treatment Plant located in Brooklyn, New York. The facility is owned and operated by the New York City Department of Environmental Protection (NYCDEP). Four (4) new enclosed waste sludge digester gas burners were recently installed as part of an upgrade to flare excessive sludge digester gas generated by the facility. As part of this system, the facility also operates a separation system for collecting and injecting methane from the treated digester gas into the National Grid natural gas distribution system which is consumed by New York City customers. This separation system incorporates a Thermal Oxidizer which is used to destroy the unwanted constituents removed from the digester gas, referred to as Tail Gas. The Thermal Oxidizer was fired by natural gas during all emission testing. All testing was conducted at the maximum normal operating condition (MNOC) achievable at the time of testing.

2.1 Test Location Description

All emission sampling was performed in a vertical section of exhaust stack (Emission Point OXIDS) which is 36 inches in diameter. Two (2) test ports situated at 90° apart and located 126 inches downstream (3.5 duct diameters) and 36 inches upstream (1.0 duct diameter) from the nearest flow disturbance were utilized for all sampling.

Stratification was determined for all gaseous pollutants by measuring oxygen concentrations during an initial traverse situated along a measurement line passing through the centroidal area of the exhaust stack in accordance with EPA Reference Method 7E, Section 8.1.2. A total of three (3) traverse points, located at 16.7, 50 and 83.3% of the measurement line were utilized for the stratification traverse which was conducted during the first test run. The stratification results indicated that all subsequent sampling could be performed at a single point most representative of the average.

3.0 Test Results Summary

A complete summary of results for the Emission Compliance Test Program conducted at the Newtown Creek Wastewater Treatment Plant for the Thermal Oxidizer is provided in tabular format below.

Table 3-1
Newtown Creek Wastewater Treatment Plant
Thermal Oxidizer
Emission Compliance Test Program
Test Results Summary

Run No.	**1**	**2**	**3**	**Average**
Date	03/13/23	03/13/23	03/13/23	
Test Period	1230-1330	1335-1435	1448-1548	
Oxygen (% dry)	16.68	16.72	16.75	16.72
Nitrogen Oxides (as NO_2)				
Concentration (ppmV)	4.5	4.4	4.3	4.4
Emission Rate (lb/MMBtu)	0.045	0.044	0.043	0.044

4.0 Sampling and Analytical Methodologies

The Emission Compliance Test Program was conducted for the purpose of determining NO_x emissions resulting from the operation of a Thermal Oxidizer. All test runs were performed in triplicate. A complete description of all test procedures utilized as part of this program is provided in this section.

Table 4-1
Newtown Creek Wastewater Treatment Plant
Thermal Oxidizer
Emission Compliance Test Program
Sampling and Analytical Methodology Summary

Emission Parameters	No. of Test Runs	Sampling and Analytical Methodologies
Oxygen	3	EPA Reference Method 3A
Nitrogen Oxides	3	EPA Reference Method 7E
Emission Rate	NA	EPA Reference Method 19

4.1 Gaseous Emissions Sampling System

An extractive sampling system was used to continuously determine O_2 and NO_x concentrations. A representative sample of the flue gas was extracted through a heated (225°F) stainless steel probe and filter assembly and transported via a heat-traced Teflon sample line through a heated glass fiber filter and a Teflon-lined diaphragm sample pump to a condensation removal trap located in a mobile laboratory. A heated out-of-stack filter assembly was maintained at a sufficient temperature to prevent water condensation. A three-way valve was utilized to block sample gas flow and introduce calibration gases to the measurement system at the outlet of the sampling probe during system calibrations. The condensation trap was cooled to approximately 40°F. The sample was introduced into a constant-pressure manifold constructed of stainless steel and Teflon for metered distribution to the respective analyzers. The entire sampling system was leak checked prior to any calibration or sampling events. Output signals from all instrumental analyzers were stored on a personal computer (PC)-based data acquisition system (DAS). Analyzers utilized for the testing program provided a linear response to the DAS over the calibrated range. Instrument linearity was verified by the pre-test calibration results.

4.1.1 Calibration Gases

Calibration gas concentrations for O_2 and NO_x include low-level, mid-level and high-level NIST traceable protocol grade calibration gases. The low-level gas is less than 20% of the calibration span. A nitrogen zero-level gas was utilized as the low-level gas for this test program. The mid-level gas is 40-60% of the calibration span. The high-level gas sets the calibration span and results in the emission concentration measurements being 20-100% of the calibration span.

Immediately prior to the start of testing, the zero gas was introduced to the analyzer at the calibration valve followed by the mid-level calibration gas. The low-level and high-level calibration gases were then introduced successively. Before and after each sample run, the analyzer was calibrated with NIST traceable protocol grade calibration gases. A sampling system bias check was performed prior to the first test run by introducing the zero-level gas and the mid-level gas at the sample probe/sample line interface. The sampling system bias check was repeated after each test run to determine the instrument zero and calibration drift.

4.1.2 Oxygen

The oxygen concentrations in the stack gases were determined by EPA Reference Method 3A. The sampling system is described in Section 4.1. Oxygen concentrations were determined using a paramagnetic oxygen analyzer

4.1.3 Nitrogen Oxides

Nitrogen oxides concentrations were determined by EPA Reference Method 7E. The principle of this method is to continuously extract a gaseous sample of flue gas and introduce a portion of this sample into a chemiluminescent analyzer for determination of concentration. The principle of the analyzer is based on the following reaction: $NO + O_3 \rightarrow NO_2 + O_2 +$ a photon

The photons emitted by the reaction are measured by a photomultiplier tube. The photomultiplier signal is proportional to the number of NO molecules; therefore, the photomultiplier

signal is recorded as the concentration for NO_x. The sample flow rate is carefully controlled. NO_x is comprised of NO and NO_2. NO_2 present in the sample gas is converted into NO prior to entering the reaction chamber by a NO_2 to NO converter. The NO_2 to NO converter breaks one (1) of the two (2) nitrogen-oxygen bonds by passing the sample gas through capillary tubing into an electronically controlled, heated catalytic converter. A converter efficiency check was performed prior to testing utilizing Section 16.2.2 of EPA Reference Method 7E.

Table 4-2 below provides the actual gas concentrations and cylinder identification for each calibration gas utilized during the program.

Table 4-2
Newtown Creek Wastewater Treatment Plant
Thermal Oxidizer
Emission Compliance Test Program
Calibration Gas and PGVP Information

PGVP Information - Oxygen (%)			
Gas Level	**Zero**	**Mid**	**High**
Concentration	Zero - (N_2)	12.9	22.00
Vendor ID		F32022	A12019
Cylinder ID		CC103765	CC720555
Exp. Date		Aug. 31, 2030	Jan. 21, 2027
PGVP Information - Nitrogen Oxides (ppmV)			
Gas Level	**Zero**	**Mid**	**High**
Concentration	Zero - (N_2)	5.05	9.174
Vendor ID		F32022	B22021
Cylinder ID		CC350183	CC410868
Exp. Date		Sept. 09, 2025	Mar. 08, 2024

4.2 Reference Method Data Processing

All instrumental outputs from the Reference Method (RM) analyzers were transmitted to a data acquisition system (DAS) for digital conversion into the designated engineering units (% or ppmV). The DAS polls at ten (10)-second intervals. Data was stored on the hard drive of a personal computer and imported into a spreadsheet software program. The averages of the RM instrument outputs or 'apparent concentrations' were then determined using an integrated software averaging function.

The effluent gas concentration was determined in accordance with equation 7E-5b of 40 CFR, Part 60, Appendix A - Method 7E as follows:

$$Cgas = (C-C_o) \times \frac{C_{ma}}{(C_m - C_o)}$$

Where:

Cgas	=	Effluent gas concentration
C	=	Average gas concentration
C_o	=	Average of initial and final system response for the zero gas
C_m	=	Average of initial and final system response for the upscale span gas
C_{ma}	=	Actual concentration of the upscale span gas

4.3 Emission Calculations

The emission rate of NO_x (lb/MMBtu) was calculated through the use of an O_2 based F-factor in accordance with EPA Reference Method 19. F-factors are ratios of combustion gas volumes to heat inputs. The following equation was utilized.

O_2 based F-Factor Calculation

$$E = C_d \times F_d \times \left[\frac{20.9}{20.9 - \%O_2}\right]$$

Where:

E	=	emission rate (lb/MMBtu)
Cd	=	concentration of pollutant in lbs/scf
F_d	=	dry fuel factor

The F_d factor was calculated utilizing EPA Reference Method 19, Equation 19-16.

The K-factor which was utilized to calculate the emission rates of nitrogen oxides was as published in Section 2 of 40 CFR, Part 60 Appendix A - Method 19.

The K-factor utilized is as follows:

From	To	Multiply by
ppmV NO_x	lb/scf NO_x	1.194×10^{-7}

5.0 Quality Assurance/Quality Control Procedures

All of the source sampling and analytical procedures were performed in accordance with the US EPA's *Good Laboratory Practice* guidelines. AirNova, Inc. follows the requirements of the individual test methods to ensure the precision and accuracy of the source testing procedures. In addition, AirNova, Inc. follows the procedures provided in the *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, Stationary Sources*. Sampling equipment utilized in the test program was calibrated prior to the test performance. The following procedures were utilized.

5.1 Calibration Gases

NIST traceable protocol grade gas standards were utilized for calibration of the O_2 and NO_x analyzers.

6.0 Appendix Glossary

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Appendix A

Field Data

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Initial Calibrations
3/13/2023

3/13/2023	11:47:48	O2	21.72	%	NOx Out	0.00	ppm
3/13/2023	11:47:58	O2	1.74	%	NOx Out	0.00	ppm
3/13/2023	11:48:08	O2	0.16	%	NOx Out	0.03	ppm
3/13/2023	11:48:18	O2	0.05	%	NOx Out	0.03	ppm
3/13/2023	11:48:28	O2	0.03	%	NOx Out	0.03	ppm
3/13/2023	11:48:38	O2	-0.02	%	NOx-Out	-0.07	ppm
3/13/2023	11:48:48	O2	-0.07	%	NOx-Out	-0.02	ppm
3/13/2023	11:48:58	O2	0.00	%	NOx-Out	-0.02	ppm
3/13/2023	11:49:08	O2	11.00	%	NOx Out	0.02	ppm
3/13/2023	11:49:18	O2	13.05	%	NOx Out	0.02	ppm
3/13/2023	11:49:28	O2	12.90	%	NOx-Out	-0.07	ppm
3/13/2023	11:49:38	O2	12.85	%	NOx-Out	-0.02	ppm
3/13/2023	11:49:48	O2	12.90	%	NOx-Out	-0.02	ppm
3/13/2023	11:49:58	O2	12.90	%	NOx-Out	-0.01	ppm
3/13/2023	11:50:08	O2	12.90	%	NOx-Out	-0.01	ppm
3/13/2023	11:50:18	O2	12.85	%	NOx-Out	-0.02	ppm
3/13/2023	11:50:28	O2	21.24	%	NOx Out	0.02	ppm
3/13/2023	11:50:38	O2	21.68	%	NOx-Out	-0.07	ppm
3/13/2023	11:50:48	O2	21.83	%	NOx-Out	-0.03	ppm
3/13/2023	11:50:58	O2	21.90	%	NOx-Out	0.02	ppm
3/13/2023	11:51:08	O2	21.92	%	NOx Out	-0.02	ppm
3/13/2023	11:51:18	O2	21.94	%	NOx Out	0.02	ppm
3/13/2023	11:51:28	O2	21.94	%	NOx Out	0.03	ppm
3/13/2023	11:51:38	O2	20.79	%	NOx-Out	0.03	ppm
3/13/2023	11:51:48	O2	0.52	%	NOx-Out	4.54	ppm
3/13/2023	11:51:58	O2	0.25	%	NOx-Out	4.31	ppm
3/13/2023	11:52:08	O2	0.15	%	NOx Out	5.05	ppm
3/13/2023	11:52:18	O2	0.12	%	NOx Out	5.07	ppm
3/13/2023	11:52:28	O2	0.08	%	NOx Out	5.07	ppm
3/13/2023	11:52:38	O2	0.05	%	NOx-Out	5.08	ppm
3/13/2023	11:52:48	O2	0.10	%	NOx-Out	6.10	ppm
3/13/2023	11:52:58	O2	0.08	%	NOx-Out	7.35	ppm
3/13/2023	11:53:08	O2	0.02	%	NOx-Out	9.05	ppm
3/13/2023	11:53:18	O2	0.01	%	NOx-Out	9.11	ppm
3/13/2023	11:53:28	O2	0.00	%	NOx Out	9.11	ppm
3/13/2023	11:53:38	O2	0.01	%	NOx Out	9.12	ppm
3/13/2023	11:53:48	O2	0.00	%	NOx-Out	9.11	ppm
3/13/2023	11:53:58	O2	19.50	%	NOx Out	7.85	ppm

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Pre Run One
3/13/2023

3/13/2023	11:54:40	O2	12.97	%	NOx-Out	17.92	ppm
3/13/2023	11:54:50	O2	2.37	%	NOx-Out	0.09	ppm
3/13/2023	11:55:00	O2	0.95	%	NOx-Out	0.09	ppm
3/13/2023	11:55:10	O2	0.50	%	NOx-Out	0.05	ppm
3/13/2023	11:55:20	O2	0.30	%	NOx-Out	0.05	ppm
3/13/2023	11:55:30	O2	0.14	%	NOx-Out	0.05	ppm
3/13/2023	11:55:40	O2	0.01	%	NOx-Out	0.04	ppm
3/13/2023	11:55:50	O2	0.01	%	NOx-Out	0.04	ppm
3/13/2023	11:56:00	O2	0.01	%	NOx-Out	0.01	ppm
3/13/2023	11:56:10	O2	2.07	%	NOx-Out	0.01	ppm
3/13/2023	11:56:20	O2	12.92	%	NOx-Out	0.02	ppm
3/13/2023	11:56:30	O2	12.72	%	NOx-Out	0.18	ppm
3/13/2023	11:56:40	O2	12.87	%	NOx-Out	0.01	ppm
3/13/2023	11:56:50	O2	12.89	%	NOx-Out	0.01	ppm
3/13/2023	11:57:00	O2	12.89	%	NOx-Out	0.01	ppm
3/13/2023	11:57:10	O2	9.74	%	NOx-Out	0.14	ppm
3/13/2023	11:57:20	O2	0.17	%	NOx-Out	3.99	ppm
3/13/2023	11:57:30	O2	0.04	%	NOx-Out	4.82	ppm
3/13/2023	11:57:40	O2	0.00	%	NOx-Out	5.05	ppm
3/13/2023	11:57:50	O2	-0.03	%	NOx-Out	5.04	ppm
3/13/2023	11:58:00	O2	-0.05	%	NOx-Out	5.05	ppm
3/13/2023	11:58:10	O2	0.01	%	NOx-Out	5.05	ppm
3/13/2023	11:58:20	O2	14.54	%	NOx-Out	5.01	ppm

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
NOx Converter Check: Tedlar Bag Method (45.2 ppm NOx and air)
3/13/2023

3/13/2023	11:59:01	NOx	31.94	ppm
3/13/2023	11:59:11	NOx	31.85	ppm
3/13/2023	11:59:21	NOx	31.86	ppm
3/13/2023	11:59:31	NOx	31.84	ppm
3/13/2023	11:59:41	NOx	31.89	ppm
3/13/2023	11:59:51	NOx	31.89	ppm
3/13/2023	12:00:01	NOx	31.88	ppm
3/13/2023	12:00:11	NOx	31.94	ppm
3/13/2023	12:00:21	NOx	31.85	ppm
3/13/2023	12:00:31	NOx	31.86	ppm
3/13/2023	12:00:41	NOx	31.84	ppm
3/13/2023	12:00:51	NOx	31.89	ppm
3/13/2023	12:01:01	NOx	31.89	ppm
3/13/2023	12:01:11	NOx	31.88	ppm
3/13/2023	12:01:21	NOx	31.93	ppm
3/13/2023	12:01:31	NOx	31.94	ppm
3/13/2023	12:01:41	NOx	31.85	ppm
3/13/2023	12:01:51	NOx	31.81	ppm
3/13/2023	12:02:01	NOx	31.84	ppm
3/13/2023	12:02:11	NOx	31.89	ppm
3/13/2023	12:02:21	NOx	31.89	ppm
3/13/2023	12:02:31	NOx	31.88	ppm
3/13/2023	12:02:41	NOx	31.93	ppm
3/13/2023	12:02:51	NOx	31.94	ppm
3/13/2023	12:03:01	NOx	31.80	ppm
3/13/2023	12:03:11	NOx	31.81	ppm
3/13/2023	12:03:21	NOx	31.84	ppm
3/13/2023	12:03:31	NOx	31.89	ppm
3/13/2023	12:03:41	NOx	31.89	ppm
3/13/2023	12:03:51	NOx	31.88	ppm
3/13/2023	12:04:01	NOx	31.93	ppm
3/13/2023	12:04:11	NOx	31.89	ppm
3/13/2023	12:04:21	NOx	31.89	ppm
3/13/2023	12:04:31	NOx	31.88	ppm
3/13/2023	12:04:41	NOx	31.93	ppm
3/13/2023	12:04:51	NOx	31.94	ppm
3/13/2023	12:05:01	NOx	31.80	ppm
3/13/2023	12:05:11	NOx	31.81	ppm
3/13/2023	12:05:21	NOx	31.84	ppm
3/13/2023	12:05:31	NOx	31.89	ppm
3/13/2023	12:05:41	NOx	31.89	ppm
3/13/2023	12:05:51	NOx	31.88	ppm
3/13/2023	12:06:01	NOx	31.93	ppm
3/13/2023	12:06:11	NOx	31.97	ppm
3/13/2023	12:06:21	NOx	31.92	ppm
3/13/2023	12:06:31	NOx	31.89	ppm
3/13/2023	12:06:41	NOx	31.88	ppm
3/13/2023	12:06:51	NOx	31.93	ppm
3/13/2023	12:07:01	NOx	31.92	ppm
3/13/2023	12:07:11	NOx	31.89	ppm
3/13/2023	12:07:21	NOx	31.88	ppm

Peak Value	31.94
Final Value	31.87
Difference	0.07
2% of Peak Value	0.64
Pass/Fail	PASS

40CFR Part 60, Appendix A, Method 7E,
Section 12.9, Equation 7E-9

$$\% \text{ Decrease} = 100\% \frac{(\text{NOx Peak} - \text{NOx Final})}{\text{NOx Peak}}$$

3/13/2023	12:07:31	NOx	31.93	ppm
3/13/2023	12:07:41	NOx	31.92	ppm
3/13/2023	12:07:51	NOx	31.88	ppm
3/13/2023	12:08:01	NOx	31.87	ppm
3/13/2023	12:08:11	NOx	31.84	ppm
3/13/2023	12:08:21	NOx	31.89	ppm
3/13/2023	12:08:31	NOx	31.94	ppm
3/13/2023	12:08:41	NOx	31.85	ppm
3/13/2023	12:08:51	NOx	31.86	ppm
3/13/2023	12:09:01	NOx	31.84	ppm
3/13/2023	12:09:11	NOx	31.89	ppm
3/13/2023	12:09:21	NOx	31.89	ppm
3/13/2023	12:09:31	NOx	31.88	ppm
3/13/2023	12:09:41	NOx	31.93	ppm
3/13/2023	12:09:51	NOx	31.94	ppm
3/13/2023	12:10:01	NOx	31.85	ppm
3/13/2023	12:10:11	NOx	31.81	ppm
3/13/2023	12:10:21	NOx	31.84	ppm
3/13/2023	12:10:31	NOx	31.89	ppm
3/13/2023	12:10:41	NOx	31.89	ppm
3/13/2023	12:10:51	NOx	31.88	ppm
3/13/2023	12:11:01	NOx	31.93	ppm
3/13/2023	12:11:11	NOx	31.94	ppm
3/13/2023	12:11:21	NOx	31.80	ppm
3/13/2023	12:11:31	NOx	31.81	ppm
3/13/2023	12:11:41	NOx	31.84	ppm
3/13/2023	12:11:51	NOx	31.89	ppm
3/13/2023	12:12:01	NOx	31.89	ppm
3/13/2023	12:12:11	NOx	31.88	ppm
3/13/2023	12:12:21	NOx	31.93	ppm
3/13/2023	12:12:31	NOx	31.89	ppm
3/13/2023	12:12:41	NOx	31.89	ppm
3/13/2023	12:12:51	NOx	31.88	ppm
3/13/2023	12:13:01	NOx	31.93	ppm
3/13/2023	12:13:11	NOx	31.94	ppm
3/13/2023	12:13:21	NOx	31.80	ppm
3/13/2023	12:13:31	NOx	31.81	ppm
3/13/2023	12:13:41	NOx	31.84	ppm
3/13/2023	12:13:51	NOx	31.89	ppm
3/13/2023	12:14:01	NOx	31.89	ppm
3/13/2023	12:14:11	NOx	31.88	ppm
3/13/2023	12:14:21	NOx	31.93	ppm
3/13/2023	12:14:31	NOx	31.92	ppm
3/13/2023	12:14:41	NOx	31.92	ppm
3/13/2023	12:14:51	NOx	31.89	ppm
3/13/2023	12:15:01	NOx	31.88	ppm
3/13/2023	12:15:11	NOx	31.93	ppm
3/13/2023	12:15:21	NOx	31.92	ppm
3/13/2023	12:15:31	NOx	31.89	ppm
3/13/2023	12:15:41	NOx	31.88	ppm
3/13/2023	12:15:51	NOx	31.93	ppm
3/13/2023	12:16:01	NOx	31.92	ppm
3/13/2023	12:16:11	NOx	31.88	ppm
3/13/2023	12:16:21	NOx	31.87	ppm
3/13/2023	12:16:31	NOx	31.84	ppm
3/13/2023	12:16:41	NOx	31.89	ppm
3/13/2023	12:16:51	NOx	31.89	ppm
3/13/2023	12:17:01	NOx	31.88	ppm

3/13/2023	12:17:11	NOx	31.93	ppm
3/13/2023	12:17:22	NOx	31.84	ppm
3/13/2023	12:17:32	NOx	31.89	ppm
3/13/2023	12:17:42	NOx	31.90	ppm
3/13/2023	12:17:52	NOx	31.88	ppm
3/13/2023	12:18:02	NOx	31.84	ppm
3/13/2023	12:18:12	NOx	31.89	ppm
3/13/2023	12:18:22	NOx	31.89	ppm
3/13/2023	12:18:32	NOx	31.88	ppm
3/13/2023	12:18:42	NOx	31.93	ppm
3/13/2023	12:18:52	NOx	31.88	ppm
3/13/2023	12:19:02	NOx	31.93	ppm
3/13/2023	12:19:12	NOx	31.94	ppm
3/13/2023	12:19:22	NOx	31.85	ppm
3/13/2023	12:19:32	NOx	31.81	ppm
3/13/2023	12:19:42	NOx	31.84	ppm
3/13/2023	12:19:52	NOx	31.89	ppm
3/13/2023	12:20:02	NOx	31.89	ppm
3/13/2023	12:20:12	NOx	31.88	ppm
3/13/2023	12:20:22	NOx	31.93	ppm
3/13/2023	12:20:32	NOx	31.94	ppm
3/13/2023	12:20:42	NOx	31.80	ppm
3/13/2023	12:20:52	NOx	31.81	ppm
3/13/2023	12:21:02	NOx	31.88	ppm
3/13/2023	12:21:12	NOx	31.93	ppm
3/13/2023	12:21:22	NOx	31.94	ppm
3/13/2023	12:21:32	NOx	31.85	ppm
3/13/2023	12:21:42	NOx	31.81	ppm
3/13/2023	12:21:52	NOx	31.84	ppm
3/13/2023	12:22:02	NOx	31.89	ppm
3/13/2023	12:22:12	NOx	31.89	ppm
3/13/2023	12:22:22	NOx	31.88	ppm
3/13/2023	12:22:32	NOx	31.93	ppm
3/13/2023	12:22:42	NOx	31.94	ppm
3/13/2023	12:22:52	NOx	31.80	ppm
3/13/2023	12:23:02	NOx	31.81	ppm
3/13/2023	12:23:12	NOx	31.88	ppm
3/13/2023	12:23:22	NOx	31.93	ppm
3/13/2023	12:23:32	NOx	31.94	ppm
3/13/2023	12:23:42	NOx	31.85	ppm
3/13/2023	12:23:52	NOx	31.81	ppm
3/13/2023	12:24:02	NOx	31.84	ppm
3/13/2023	12:24:12	NOx	31.89	ppm
3/13/2023	12:24:22	NOx	31.89	ppm
3/13/2023	12:24:32	NOx	31.88	ppm
3/13/2023	12:24:42	NOx	31.93	ppm
3/13/2023	12:24:52	NOx	31.94	ppm
3/13/2023	12:25:02	NOx	31.80	ppm
3/13/2023	12:25:12	NOx	31.85	ppm
3/13/2023	12:25:22	NOx	31.86	ppm
3/13/2023	12:25:32	NOx	31.85	ppm
3/13/2023	12:25:42	NOx	31.86	ppm
3/13/2023	12:25:52	NOx	31.84	ppm
3/13/2023	12:26:02	NOx	31.89	ppm
3/13/2023	12:26:12	NOx	31.89	ppm
3/13/2023	12:26:22	NOx	31.88	ppm
3/13/2023	12:26:32	NOx	31.85	ppm
3/13/2023	12:26:42	NOx	31.86	ppm

3/13/2023	12:26:52	NOx	31.84	ppm
3/13/2023	12:27:02	NOx	31.89	ppm
3/13/2023	12:27:12	NOx	31.89	ppm
3/13/2023	12:27:22	NOx	31.88	ppm
3/13/2023	12:27:32	NOx	31.94	ppm
3/13/2023	12:27:42	NOx	31.85	ppm
3/13/2023	12:27:52	NOx	31.86	ppm
3/13/2023	12:28:02	NOx	31.84	ppm
3/13/2023	12:28:12	NOx	31.89	ppm
3/13/2023	12:28:22	NOx	31.89	ppm
3/13/2023	12:28:32	NOx	31.88	ppm
3/13/2023	12:28:42	NOx	31.87	ppm
			31.88	
			31.94	

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Run One
1230 - 1330
3/13/2023

Point One	12:30:07	O2	15.99	%	NOx-Out	5.21	ppm
3/13/2023	12:30:17	O2	16.36	%	NOx Out	5.10	ppm
3/13/2023	12:30:27	O2	16.62	%	NOx Out	4.84	ppm
3/13/2023	12:30:37	O2	16.21	%	NOx Out	4.59	ppm
3/13/2023	12:30:47	O2	15.68	%	NOx Out	4.68	ppm
3/13/2023	12:30:57	O2	16.19	%	NOx Out	4.76	ppm
3/13/2023	12:31:07	O2	16.14	%	NOx-Out	5.02	ppm
3/13/2023	12:31:17	O2	16.15	%	NOx-Out	5.12	ppm
3/13/2023	12:31:27	O2	16.50	%	NOx-Out	4.91	ppm
3/13/2023	12:31:37	O2	15.76	%	NOx Out	5.25	ppm
3/13/2023	12:31:47	O2	15.74	%	NOx Out	5.57	ppm
3/13/2023	12:31:57	O2	16.05	%	NOx-Out	5.37	ppm
3/13/2023	12:32:07	O2	16.34	%	NOx-Out	4.98	ppm
3/13/2023	12:32:17	O2	16.54	%	NOx-Out	4.43	ppm
3/13/2023	12:32:27	O2	16.62	%	NOx-Out	4.12	ppm
3/13/2023	12:32:37	O2	16.55	%	NOx Out	4.30	ppm
3/13/2023	12:32:47	O2	16.76	%	NOx Out	4.15	ppm
3/13/2023	12:32:57	O2	16.55	%	NOx-Out	4.18	ppm
3/13/2023	12:33:07	O2	16.43	%	NOx-Out	4.34	ppm
3/13/2023	12:33:17	O2	16.37	%	NOx-Out	4.58	ppm
3/13/2023	12:33:27	O2	16.42	%	NOx-Out	4.95	ppm
3/13/2023	12:33:37	O2	17.34	%	NOx-Out	4.07	ppm
3/13/2023	12:33:47	O2	17.46	%	NOx-Out	3.73	ppm
3/13/2023	12:33:57	O2	16.63	%	NOx-Out	3.94	ppm
3/13/2023	12:34:07	O2	16.65	%	NOx Out	4.39	ppm
3/13/2023	12:34:17	O2	16.62	%	NOx-Out	4.28	ppm
3/13/2023	12:34:27	O2	16.54	%	NOx-Out	4.21	ppm
3/13/2023	12:34:37	O2	16.64	%	NOx-Out	4.28	ppm
3/13/2023	12:34:47	O2	16.89	%	NOx-Out	4.50	ppm
3/13/2023	12:34:57	O2	16.46	%	NOx Out	4.82	ppm
3/13/2023	12:35:07	O2	17.16	%	NOx Out	4.44	ppm
3/13/2023	12:35:17	O2	16.82	%	NOx-Out	4.39	ppm
3/13/2023	12:35:27	O2	16.86	%	NOx-Out	4.15	ppm
3/13/2023	12:35:37	O2	16.42	%	NOx-Out	4.32	ppm
3/13/2023	12:35:47	O2	17.00	%	NOx-Out	4.24	ppm
3/13/2023	12:35:57	O2	16.96	%	NOx-Out	4.22	ppm
3/13/2023	12:36:07	O2	17.05	%	NOx-Out	4.00	ppm
3/13/2023	12:36:17	O2	16.41	%	NOx Out	4.56	ppm
3/13/2023	12:36:27	O2	16.77	%	NOx Out	4.67	ppm
3/13/2023	12:36:37	O2	16.83	%	NOx-Out	4.56	ppm
3/13/2023	12:36:47	O2	16.56	%	NOx-Out	4.62	ppm
3/13/2023	12:36:57	O2	16.72	%	NOx-Out	4.31	ppm
3/13/2023	12:37:07	O2	16.30	%	NOx Out	4.37	ppm
3/13/2023	12:37:17	O2	16.66	%	NOx-Out	4.50	ppm
3/13/2023	12:37:27	O2	16.88	%	NOx-Out	4.04	ppm
3/13/2023	12:37:37	O2	17.14	%	NOx Out	3.85	ppm
3/13/2023	12:37:47	O2	16.99	%	NOx-Out	4.09	ppm
3/13/2023	12:37:57	O2	16.80	%	NOx-Out	4.56	ppm
3/13/2023	12:38:07	O2	16.54	%	NOx-Out	4.56	ppm
3/13/2023	12:38:17	O2	16.98	%	NOx Out	4.33	ppm

3/13/2023	12:38:27	O2	16.60	%	NOx-Out	4.30	ppm
3/13/2023	12:38:37	O2	16.47	%	NOx-Out	4.36	ppm
3/13/2023	12:38:47	O2	16.84	%	NOx-Out	4.35	ppm
3/13/2023	12:38:57	O2	16.93	%	NOx-Out	3.94	ppm
3/13/2023	12:39:07	O2	17.41	%	NOx-Out	3.71	ppm
3/13/2023	12:39:17	O2	16.54	%	NOx-Out	4.38	ppm
3/13/2023	12:39:27	O2	16.63	%	NOx Out	4.46	ppm
3/13/2023	12:39:37	O2	16.62	%	NOx Out	4.74	ppm
3/13/2023	12:39:47	O2	16.69	%	NOx-Out	4.62	ppm
3/13/2023	12:39:57	O2	16.96	%	NOx-Out	3.90	ppm
3/13/2023	12:40:07	O2	17.00	%	NOx-Out	3.85	ppm
3/13/2023	12:40:17	O2	16.99	%	NOx-Out	3.83	ppm
3/13/2023	12:40:27	O2	16.52	%	NOx-Out	4.57	ppm
3/13/2023	12:40:37	O2	16.61	%	NOx Out	4.00	ppm
3/13/2023	12:40:47	O2	17.25	%	NOx Out	3.97	ppm
3/13/2023	12:40:57	O2	16.86	%	NOx Out	4.39	ppm
3/13/2023	12:41:07	O2	16.82	%	NOx-Out	4.11	ppm
3/13/2023	12:41:17	O2	16.33	%	NOx-Out	4.95	ppm
3/13/2023	12:41:27	O2	16.67	%	NOx-Out	4.76	ppm
3/13/2023	12:41:37	O2	16.86	%	NOx Out	4.47	ppm
3/13/2023	12:41:47	O2	16.72	%	NOx Out	4.02	ppm
3/13/2023	12:41:57	O2	16.78	%	NOx-Out	4.05	ppm
3/13/2023	12:42:07	O2	17.05	%	NOx-Out	4.12	ppm
3/13/2023	12:42:17	O2	16.78	%	NOx-Out	4.15	ppm
3/13/2023	12:42:27	O2	16.65	%	NOx-Out	4.53	ppm
3/13/2023	12:42:37	O2	16.48	%	NOx-Out	4.50	ppm
3/13/2023	12:42:47	O2	16.19	%	NOx Out	5.18	ppm
3/13/2023	12:42:57	O2	16.47	%	NOx-Out	5.15	ppm
3/13/2023	12:43:07	O2	16.84	%	NOx-Out	4.60	ppm
3/13/2023	12:43:17	O2	16.86	%	NOx-Out	4.28	ppm
3/13/2023	12:43:27	O2	16.91	%	NOx-Out	4.00	ppm
3/13/2023	12:43:37	O2	16.75	%	NOx-Out	4.18	ppm
3/13/2023	12:43:47	O2	16.47	%	NOx-Out	4.36	ppm
3/13/2023	12:43:57	O2	16.26	%	NOx Out	4.56	ppm
3/13/2023	12:44:07	O2	16.14	%	NOx Out	4.74	ppm
3/13/2023	12:44:17	O2	16.25	%	NOx-Out	4.99	ppm
3/13/2023	12:44:27	O2	16.49	%	NOx-Out	4.97	ppm
3/13/2023	12:44:37	O2	16.83	%	NOx Out	4.70	ppm
3/13/2023	12:44:47	O2	16.69	%	NOx Out	4.95	ppm
3/13/2023	12:44:57	O2	16.98	%	NOx Out	4.09	ppm
3/13/2023	12:45:07	O2	16.19	%	NOx Out	4.36	ppm
3/13/2023	12:45:17	O2	15.83	%	NOx-Out	5.02	ppm
3/13/2023	12:45:27	O2	16.23	%	NOx-Out	4.82	ppm
3/13/2023	12:45:37	O2	16.48	%	NOx Out	4.59	ppm
3/13/2023	12:45:47	O2	16.49	%	NOx Out	4.50	ppm
3/13/2023	12:45:57	O2	16.48	%	NOx-Out	4.40	ppm
3/13/2023	12:46:07	O2	16.46	%	NOx-Out	4.62	ppm
3/13/2023	12:46:17	O2	16.12	%	NOx Out	5.16	ppm
3/13/2023	12:46:27	O2	16.26	%	NOx-Out	4.95	ppm
3/13/2023	12:46:37	O2	16.63	%	NOx-Out	4.55	ppm
3/13/2023	12:46:47	O2	16.40	%	NOx-Out	4.21	ppm
3/13/2023	12:46:57	O2	16.88	%	NOx Out	4.07	ppm
3/13/2023	12:47:08	O2	16.08	%	NOx Out	5.01	ppm
3/13/2023	12:47:18	O2	16.47	%	NOx-Out	4.74	ppm
3/13/2023	12:47:28	O2	15.72	%	NOx-Out	5.22	ppm
3/13/2023	12:47:38	O2	15.97	%	NOx Out	5.05	ppm
3/13/2023	12:47:48	O2	16.70	%	NOx-Out	4.43	ppm
3/13/2023	12:47:58	O2	16.88	%	NOx-Out	4.03	ppm

3/13/2023	12:48:08	O2	16.18	%	NOx-Out	4.30	ppm
3/13/2023	12:48:18	O2	16.37	%	NOx-Out	4.48	ppm
3/13/2023	12:48:28	O2	16.89	%	NOx-Out	4.39	ppm
3/13/2023	12:48:38	O2	16.97	%	NOx-Out	4.02	ppm
3/13/2023	12:48:48	O2	16.78	%	NOx-Out	4.09	ppm
3/13/2023	12:48:58	O2	15.49	%	NOx-Out	5.03	ppm
3/13/2023	12:49:08	O2	16.29	%	NOx-Out	4.83	ppm
3/13/2023	12:49:18	O2	16.17	%	NOx-Out	4.91	ppm
3/13/2023	12:49:28	O2	16.97	%	NOx-Out	4.49	ppm
3/13/2023	12:49:38	O2	16.77	%	NOx-Out	4.37	ppm
3/13/2023	12:49:48	O2	16.68	%	NOx-Out	4.03	ppm
3/13/2023	12:49:58	O2	16.23	%	NOx-Out	4.73	ppm
Point Two	12:50:08	O2	16.38	%	NOx-Out	4.53	ppm
3/13/2023	12:50:18	O2	16.59	%	NOx-Out	4.45	ppm
3/13/2023	12:50:28	O2	16.64	%	NOx-Out	4.45	ppm
3/13/2023	12:50:38	O2	16.74	%	NOx-Out	4.59	ppm
3/13/2023	12:50:48	O2	16.71	%	NOx-Out	4.67	ppm
3/13/2023	12:50:58	O2	16.85	%	NOx-Out	4.35	ppm
3/13/2023	12:51:08	O2	16.85	%	NOx-Out	4.12	ppm
3/13/2023	12:51:18	O2	16.24	%	NOx-Out	4.29	ppm
3/13/2023	12:51:28	O2	16.58	%	NOx-Out	4.61	ppm
3/13/2023	12:51:38	O2	16.80	%	NOx-Out	4.65	ppm
3/13/2023	12:51:48	O2	17.07	%	NOx-Out	3.89	ppm
3/13/2023	12:51:58	O2	17.06	%	NOx-Out	4.24	ppm
3/13/2023	12:52:08	O2	16.93	%	NOx-Out	4.15	ppm
3/13/2023	12:52:18	O2	16.70	%	NOx-Out	4.45	ppm
3/13/2023	12:52:28	O2	16.71	%	NOx-Out	4.79	ppm
3/13/2023	12:52:38	O2	16.69	%	NOx-Out	4.76	ppm
3/13/2023	12:52:48	O2	16.57	%	NOx-Out	4.39	ppm
3/13/2023	12:52:58	O2	16.72	%	NOx-Out	4.18	ppm
3/13/2023	12:53:08	O2	16.80	%	NOx-Out	4.51	ppm
3/13/2023	12:53:18	O2	17.02	%	NOx-Out	4.31	ppm
3/13/2023	12:53:28	O2	16.83	%	NOx-Out	4.13	ppm
3/13/2023	12:53:38	O2	16.60	%	NOx-Out	4.50	ppm
3/13/2023	12:53:48	O2	16.45	%	NOx-Out	4.85	ppm
3/13/2023	12:53:58	O2	16.41	%	NOx-Out	4.88	ppm
3/13/2023	12:54:08	O2	16.74	%	NOx-Out	4.38	ppm
3/13/2023	12:54:18	O2	16.86	%	NOx-Out	4.14	ppm
3/13/2023	12:54:28	O2	16.65	%	NOx-Out	4.24	ppm
3/13/2023	12:54:38	O2	16.54	%	NOx-Out	4.43	ppm
3/13/2023	12:54:48	O2	16.96	%	NOx-Out	4.34	ppm
3/13/2023	12:54:58	O2	16.35	%	NOx-Out	4.82	ppm
3/13/2023	12:55:08	O2	16.59	%	NOx-Out	4.59	ppm
3/13/2023	12:55:18	O2	16.28	%	NOx-Out	4.68	ppm
3/13/2023	12:55:28	O2	16.42	%	NOx-Out	4.67	ppm
3/13/2023	12:55:38	O2	16.15	%	NOx-Out	5.07	ppm
3/13/2023	12:55:48	O2	16.45	%	NOx-Out	5.29	ppm
3/13/2023	12:55:58	O2	16.29	%	NOx-Out	4.96	ppm
3/13/2023	12:56:08	O2	16.31	%	NOx-Out	4.25	ppm
3/13/2023	12:56:18	O2	16.23	%	NOx-Out	4.47	ppm
3/13/2023	12:56:28	O2	16.58	%	NOx-Out	4.60	ppm
3/13/2023	12:56:38	O2	16.13	%	NOx-Out	4.81	ppm
3/13/2023	12:56:48	O2	16.10	%	NOx-Out	5.21	ppm
3/13/2023	12:56:58	O2	16.09	%	NOx-Out	5.21	ppm
3/13/2023	12:57:08	O2	16.24	%	NOx-Out	4.88	ppm
3/13/2023	12:57:18	O2	16.67	%	NOx-Out	4.71	ppm
3/13/2023	12:57:28	O2	16.70	%	NOx-Out	4.36	ppm
3/13/2023	12:57:38	O2	16.81	%	NOx-Out	4.12	ppm

3/13/2023	12:57:48	O2	16.31	%	NOx-Out	4.50	ppm
3/13/2023	12:57:58	O2	16.40	%	NOx-Out	4.74	ppm
3/13/2023	12:58:08	O2	17.02	%	NOx-Out	3.93	ppm
3/13/2023	12:58:18	O2	16.76	%	NOx-Out	3.99	ppm
3/13/2023	12:58:28	O2	16.51	%	NOx Out	4.47	ppm
3/13/2023	12:58:38	O2	16.53	%	NOx Out	4.68	ppm
3/13/2023	12:58:48	O2	16.13	%	NOx-Out	5.01	ppm
3/13/2023	12:58:58	O2	16.19	%	NOx-Out	4.97	ppm
3/13/2023	12:59:08	O2	16.31	%	NOx-Out	4.60	ppm
3/13/2023	12:59:18	O2	16.45	%	NOx-Out	4.50	ppm
3/13/2023	12:59:28	O2	16.88	%	NOx-Out	4.34	ppm
3/13/2023	12:59:38	O2	17.13	%	NOx-Out	3.95	ppm
3/13/2023	12:59:48	O2	16.52	%	NOx Out	4.65	ppm
3/13/2023	12:59:58	O2	16.15	%	NOx Out	4.95	ppm
3/13/2023	13:00:08	O2	16.50	%	NOx-Out	5.22	ppm
3/13/2023	13:00:18	O2	16.57	%	NOx-Out	4.66	ppm
3/13/2023	13:00:28	O2	16.63	%	NOx-Out	4.52	ppm
3/13/2023	13:00:38	O2	16.92	%	NOx-Out	4.26	ppm
3/13/2023	13:00:48	O2	16.37	%	NOx-Out	4.28	ppm
3/13/2023	13:00:58	O2	16.40	%	NOx Out	4.57	ppm
3/13/2023	13:01:08	O2	16.71	%	NOx-Out	4.65	ppm
3/13/2023	13:01:18	O2	17.01	%	NOx-Out	4.31	ppm
3/13/2023	13:01:28	O2	16.82	%	NOx-Out	4.08	ppm
3/13/2023	13:01:38	O2	16.10	%	NOx-Out	4.70	ppm
3/13/2023	13:01:48	O2	16.21	%	NOx Out	5.36	ppm
3/13/2023	13:01:58	O2	15.84	%	NOx Out	5.51	ppm
3/13/2023	13:02:08	O2	16.81	%	NOx Out	4.88	ppm
3/13/2023	13:02:18	O2	17.12	%	NOx-Out	4.17	ppm
3/13/2023	13:02:28	O2	16.71	%	NOx-Out	4.15	ppm
3/13/2023	13:02:38	O2	16.82	%	NOx-Out	4.13	ppm
3/13/2023	13:02:48	O2	17.03	%	NOx-Out	4.13	ppm
3/13/2023	13:02:58	O2	16.97	%	NOx Out	4.15	ppm
3/13/2023	13:03:08	O2	16.88	%	NOx Out	4.15	ppm
3/13/2023	13:03:18	O2	16.25	%	NOx Out	5.07	ppm
3/13/2023	13:03:28	O2	15.89	%	NOx-Out	5.18	ppm
3/13/2023	13:03:38	O2	16.78	%	NOx-Out	4.75	ppm
3/13/2023	13:03:48	O2	17.02	%	NOx-Out	4.07	ppm
3/13/2023	13:03:58	O2	16.50	%	NOx Out	4.15	ppm
3/13/2023	13:04:08	O2	15.85	%	NOx Out	4.30	ppm
3/13/2023	13:04:18	O2	15.89	%	NOx-Out	5.19	ppm
3/13/2023	13:04:28	O2	16.78	%	NOx-Out	4.65	ppm
3/13/2023	13:04:38	O2	16.85	%	NOx-Out	4.28	ppm
3/13/2023	13:04:48	O2	16.57	%	NOx Out	4.73	ppm
3/13/2023	13:04:58	O2	16.65	%	NOx-Out	5.12	ppm
3/13/2023	13:05:08	O2	16.78	%	NOx-Out	4.91	ppm
3/13/2023	13:05:18	O2	16.90	%	NOx-Out	4.08	ppm
3/13/2023	13:05:28	O2	16.61	%	NOx Out	4.22	ppm
3/13/2023	13:05:38	O2	16.59	%	NOx Out	4.19	ppm
3/13/2023	13:05:48	O2	16.43	%	NOx-Out	4.57	ppm
3/13/2023	13:05:58	O2	16.70	%	NOx-Out	4.41	ppm
3/13/2023	13:06:08	O2	16.86	%	NOx Out	4.30	ppm
3/13/2023	13:06:18	O2	16.97	%	NOx-Out	3.87	ppm
3/13/2023	13:06:28	O2	16.61	%	NOx-Out	4.34	ppm
3/13/2023	13:06:38	O2	16.48	%	NOx Out	4.53	ppm
3/13/2023	13:06:48	O2	16.71	%	NOx Out	4.56	ppm
3/13/2023	13:06:58	O2	16.93	%	NOx-Out	4.24	ppm
3/13/2023	13:07:08	O2	16.92	%	NOx-Out	3.84	ppm
3/13/2023	13:07:18	O2	16.73	%	NOx-Out	3.75	ppm

3/13/2023	13:07:28	O2	17.03	%	NOx Out	3.97	ppm
3/13/2023	13:07:38	O2	16.90	%	NOx Out	4.12	ppm
3/13/2023	13:07:48	O2	16.57	%	NOx Out	4.27	ppm
3/13/2023	13:07:58	O2	16.58	%	NOx Out	4.56	ppm
3/13/2023	13:08:08	O2	16.84	%	NOx Out	4.62	ppm
3/13/2023	13:08:18	O2	16.79	%	NOx Out	4.40	ppm
3/13/2023	13:08:28	O2	17.34	%	NOx Out	4.05	ppm
3/13/2023	13:08:38	O2	17.06	%	NOx Out	3.80	ppm
3/13/2023	13:08:48	O2	16.53	%	NOx Out	4.09	ppm
3/13/2023	13:08:58	O2	16.19	%	NOx Out	4.68	ppm
3/13/2023	13:09:08	O2	16.71	%	NOx Out	4.30	ppm
3/13/2023	13:09:18	O2	16.76	%	NOx Out	4.54	ppm
3/13/2023	13:09:28	O2	16.66	%	NOx Out	4.25	ppm
3/13/2023	13:09:38	O2	16.53	%	NOx Out	4.56	ppm
3/13/2023	13:09:48	O2	16.63	%	NOx Out	4.77	ppm
3/13/2023	13:09:58	O2	16.21	%	NOx Out	5.25	ppm
Point Three	13:10:08	O2	16.36	%	NOx Out	5.00	ppm
3/13/2023	13:10:18	O2	16.39	%	NOx Out	4.42	ppm
3/13/2023	13:10:28	O2	16.68	%	NOx Out	4.05	ppm
3/13/2023	13:10:38	O2	16.80	%	NOx Out	4.14	ppm
3/13/2023	13:10:48	O2	17.06	%	NOx Out	4.09	ppm
3/13/2023	13:10:58	O2	16.78	%	NOx Out	4.30	ppm
3/13/2023	13:11:08	O2	16.74	%	NOx Out	4.53	ppm
3/13/2023	13:11:18	O2	16.63	%	NOx Out	4.66	ppm
3/13/2023	13:11:28	O2	16.57	%	NOx Out	4.91	ppm
3/13/2023	13:11:38	O2	16.65	%	NOx Out	4.90	ppm
3/13/2023	13:11:48	O2	16.68	%	NOx Out	4.45	ppm
3/13/2023	13:11:58	O2	16.65	%	NOx Out	4.27	ppm
3/13/2023	13:12:08	O2	16.84	%	NOx Out	4.39	ppm
3/13/2023	13:12:18	O2	16.87	%	NOx Out	4.33	ppm
3/13/2023	13:12:28	O2	16.89	%	NOx Out	4.27	ppm
3/13/2023	13:12:38	O2	16.66	%	NOx Out	4.36	ppm
3/13/2023	13:12:48	O2	16.41	%	NOx Out	4.66	ppm
3/13/2023	13:12:58	O2	16.27	%	NOx Out	5.04	ppm
3/13/2023	13:13:08	O2	16.82	%	NOx Out	4.52	ppm
3/13/2023	13:13:18	O2	16.93	%	NOx Out	4.07	ppm
3/13/2023	13:13:28	O2	16.23	%	NOx Out	4.08	ppm
3/13/2023	13:13:38	O2	16.25	%	NOx Out	4.82	ppm
3/13/2023	13:13:48	O2	16.91	%	NOx Out	4.35	ppm
3/13/2023	13:13:58	O2	16.84	%	NOx Out	4.23	ppm
3/13/2023	13:14:08	O2	16.64	%	NOx Out	4.47	ppm
3/13/2023	13:14:18	O2	16.77	%	NOx Out	4.51	ppm
3/13/2023	13:14:28	O2	16.52	%	NOx Out	4.62	ppm
3/13/2023	13:14:38	O2	16.66	%	NOx Out	4.65	ppm
3/13/2023	13:14:48	O2	16.93	%	NOx Out	4.33	ppm
3/13/2023	13:14:58	O2	16.45	%	NOx Out	4.98	ppm
3/13/2023	13:15:08	O2	16.12	%	NOx Out	4.38	ppm
3/13/2023	13:15:18	O2	16.38	%	NOx Out	4.64	ppm
3/13/2023	13:15:28	O2	16.45	%	NOx Out	4.65	ppm
3/13/2023	13:15:38	O2	16.41	%	NOx Out	4.64	ppm
3/13/2023	13:15:48	O2	15.88	%	NOx Out	4.80	ppm
3/13/2023	13:15:58	O2	15.89	%	NOx Out	4.99	ppm
3/13/2023	13:16:08	O2	16.66	%	NOx Out	4.85	ppm
3/13/2023	13:16:18	O2	16.32	%	NOx Out	4.49	ppm
3/13/2023	13:16:28	O2	16.55	%	NOx Out	4.64	ppm
3/13/2023	13:16:38	O2	16.13	%	NOx Out	4.39	ppm
3/13/2023	13:16:48	O2	16.41	%	NOx Out	4.77	ppm
3/13/2023	13:16:58	O2	16.81	%	NOx Out	4.02	ppm

3/13/2023	13:17:08	O2	17.05	%	NOx-Out	3.77	ppm
3/13/2023	13:17:18	O2	16.60	%	NOx-Out	4.29	ppm
3/13/2023	13:17:28	O2	16.01	%	NOx-Out	5.08	ppm
3/13/2023	13:17:38	O2	16.07	%	NOx-Out	5.19	ppm
3/13/2023	13:17:48	O2	16.85	%	NOx-Out	4.59	ppm
3/13/2023	13:17:58	O2	16.96	%	NOx Out	3.97	ppm
3/13/2023	13:18:08	O2	16.76	%	NOx Out	4.29	ppm
3/13/2023	13:18:18	O2	16.84	%	NOx-Out	3.75	ppm
3/13/2023	13:18:28	O2	16.54	%	NOx-Out	4.31	ppm
3/13/2023	13:18:38	O2	16.88	%	NOx-Out	4.14	ppm
3/13/2023	13:18:48	O2	16.55	%	NOx-Out	4.79	ppm
3/13/2023	13:18:58	O2	16.80	%	NOx-Out	4.33	ppm
3/13/2023	13:19:08	O2	16.78	%	NOx-Out	4.60	ppm
3/13/2023	13:19:19	O2	16.46	%	NOx-Out	4.56	ppm
3/13/2023	13:19:29	O2	16.37	%	NOx Out	5.31	ppm
3/13/2023	13:19:39	O2	16.53	%	NOx-Out	4.55	ppm
3/13/2023	13:19:49	O2	16.63	%	NOx-Out	4.32	ppm
3/13/2023	13:19:59	O2	16.61	%	NOx-Out	4.54	ppm
3/13/2023	13:20:09	O2	16.67	%	NOx-Out	4.20	ppm
3/13/2023	13:20:19	O2	16.87	%	NOx Out	4.27	ppm
3/13/2023	13:20:29	O2	16.80	%	NOx-Out	4.26	ppm
3/13/2023	13:20:39	O2	16.73	%	NOx-Out	4.73	ppm
3/13/2023	13:20:49	O2	16.85	%	NOx-Out	4.77	ppm
3/13/2023	13:20:59	O2	17.20	%	NOx-Out	4.22	ppm
3/13/2023	13:21:09	O2	16.91	%	NOx-Out	4.08	ppm
3/13/2023	13:21:19	O2	16.80	%	NOx Out	4.20	ppm
3/13/2023	13:21:29	O2	16.46	%	NOx-Out	4.36	ppm
3/13/2023	13:21:39	O2	16.45	%	NOx-Out	4.60	ppm
3/13/2023	13:21:49	O2	17.09	%	NOx-Out	4.19	ppm
3/13/2023	13:21:59	O2	17.23	%	NOx-Out	3.86	ppm
3/13/2023	13:22:09	O2	16.56	%	NOx-Out	4.07	ppm
3/13/2023	13:22:19	O2	15.86	%	NOx-Out	5.12	ppm
3/13/2023	13:22:29	O2	15.99	%	NOx-Out	5.46	ppm
3/13/2023	13:22:39	O2	16.59	%	NOx Out	5.04	ppm
3/13/2023	13:22:49	O2	16.93	%	NOx Out	4.14	ppm
3/13/2023	13:22:59	O2	16.47	%	NOx-Out	4.38	ppm
3/13/2023	13:23:09	O2	16.59	%	NOx-Out	4.43	ppm
3/13/2023	13:23:19	O2	16.99	%	NOx-Out	3.99	ppm
3/13/2023	13:23:29	O2	16.79	%	NOx Out	4.00	ppm
3/13/2023	13:23:39	O2	16.33	%	NOx Out	4.56	ppm
3/13/2023	13:23:49	O2	16.40	%	NOx-Out	5.06	ppm
3/13/2023	13:23:59	O2	15.98	%	NOx-Out	5.01	ppm
3/13/2023	13:24:09	O2	16.69	%	NOx-Out	5.01	ppm
3/13/2023	13:24:19	O2	17.04	%	NOx Out	4.35	ppm
3/13/2023	13:24:29	O2	16.73	%	NOx-Out	4.27	ppm
3/13/2023	13:24:39	O2	16.74	%	NOx-Out	4.21	ppm
3/13/2023	13:24:49	O2	16.48	%	NOx-Out	4.43	ppm
3/13/2023	13:24:59	O2	16.39	%	NOx-Out	4.73	ppm
3/13/2023	13:25:09	O2	16.88	%	NOx Out	4.15	ppm
3/13/2023	13:25:19	O2	16.93	%	NOx Out	4.19	ppm
3/13/2023	13:25:29	O2	16.53	%	NOx-Out	4.47	ppm
3/13/2023	13:25:39	O2	16.27	%	NOx-Out	4.85	ppm
3/13/2023	13:25:49	O2	16.69	%	NOx-Out	4.43	ppm
3/13/2023	13:25:59	O2	16.43	%	NOx Out	4.35	ppm
3/13/2023	13:26:09	O2	16.51	%	NOx-Out	4.16	ppm
3/13/2023	13:26:19	O2	16.39	%	NOx-Out	4.48	ppm
3/13/2023	13:26:29	O2	16.94	%	NOx Out	3.75	ppm
3/13/2023	13:26:39	O2	17.12	%	NOx-Out	3.83	ppm

3/13/2023	13:26:49	O2	16.09	%	NOx-Out	4.47	ppm
3/13/2023	13:26:59	O2	16.17	%	NOx-Out	5.20	ppm
3/13/2023	13:27:09	O2	16.49	%	NOx-Out	4.95	ppm
3/13/2023	13:27:19	O2	16.97	%	NOx-Out	4.51	ppm
3/13/2023	13:27:29	O2	16.82	%	NOx-Out	4.02	ppm
3/13/2023	13:27:39	O2	16.71	%	NOx Out	4.44	ppm
3/13/2023	13:27:49	O2	16.55	%	NOx-Out	4.26	ppm
3/13/2023	13:27:59	O2	16.28	%	NOx Out	4.54	ppm
3/13/2023	13:28:09	O2	16.35	%	NOx Out	4.42	ppm
3/13/2023	13:28:19	O2	16.90	%	NOx-Out	4.29	ppm
3/13/2023	13:28:29	O2	16.35	%	NOx-Out	4.08	ppm
3/13/2023	13:28:39	O2	16.57	%	NOx-Out	4.66	ppm
3/13/2023	13:28:49	O2	16.34	%	NOx-Out	4.52	ppm
3/13/2023	13:28:59	O2	16.54	%	NOx-Out	5.14	ppm
3/13/2023	13:29:09	O2	16.84	%	NOx Out	4.45	ppm
3/13/2023	13:29:19	O2	16.41	%	NOx Out	4.12	ppm
3/13/2023	13:29:29	O2	16.24	%	NOx-Out	4.75	ppm
3/13/2023	13:29:39	O2	16.62	%	NOx-Out	4.43	ppm
3/13/2023	13:29:49	O2	16.64	%	NOx-Out	4.27	ppm
3/13/2023	13:29:59	O2	16.37	%	NOx Out	4.43	ppm
	Average:		**16.60**			**4.49**	

ification Check			
Point One	**16.58**	0.00	
Point Two	**16.61**	0.00	% Difference from average
Point Three	**16.60**	0.00	

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Post Run One
3/13/2023

3/13/2023	13:30:20	O2	16.52	%	NOx-Out	4.76	ppm
3/13/2023	13:30:30	O2	14.84	%	NOx Out	4.61	ppm
3/13/2023	13:30:40	O2	0.83	%	NOx-Out	0.34	ppm
3/13/2023	13:30:50	O2	0.24	%	NOx-Out	0.25	ppm
3/13/2023	13:31:00	O2	0.16	%	NOx-Out	0.25	ppm
3/13/2023	13:31:10	O2	0.10	%	NOx-Out	0.22	ppm
3/13/2023	13:31:20	O2	0.05	%	NOx-Out	0.23	ppm
3/13/2023	13:31:30	O2	0.03	%	NOx-Out	0.18	ppm
3/13/2023	13:31:40	O2	0.03	%	NOx-Out	0.16	ppm
3/13/2023	13:31:50	O2	1.89	%	NOx Out	0.16	ppm
3/13/2023	13:32:00	O2	12.30	%	NOx Out	0.13	ppm
3/13/2023	13:32:10	O2	12.62	%	NOx-Out	0.11	ppm
3/13/2023	13:32:20	O2	12.71	%	NOx-Out	0.07	ppm
3/13/2023	13:32:30	O2	12.79	%	NOx-Out	0.07	ppm
3/13/2023	13:32:40	O2	12.80	%	NOx Out	0.08	ppm
3/13/2023	13:32:50	O2	12.80	%	NOx-Out	0.05	ppm
3/13/2023	13:33:00	O2	12.09	%	NOx-Out	0.05	ppm
3/13/2023	13:33:10	O2	0.24	%	NOx-Out	5.15	ppm
3/13/2023	13:33:20	O2	0.10	%	NOx-Out	5.02	ppm
3/13/2023	13:33:30	O2	0.04	%	NOx-Out	5.07	ppm
3/13/2023	13:33:40	O2	0.02	%	NOx Out	5.10	ppm
3/13/2023	13:33:50	O2	0.00	%	NOx-Out	5.10	ppm
3/13/2023	13:34:00	O2	14.35	%	NOx-Out	5.09	ppm
3/13/2023	13:34:10	O2	16.18	%	NOx-Out	3.78	ppm

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Run Two
1335 - 1435
3/13/2023

3/13/2023	13:35:07	O2	16.37	%	NOx-Out	4.51	ppm
3/13/2023	13:35:17	O2	16.46	%	NOx Out	4.33	ppm
3/13/2023	13:35:27	O2	16.73	%	NOx-Out	3.84	ppm
3/13/2023	13:35:37	O2	16.00	%	NOx-Out	4.07	ppm
3/13/2023	13:35:47	O2	16.01	%	NOx-Out	5.10	ppm
3/13/2023	13:35:57	O2	16.64	%	NOx-Out	4.30	ppm
3/13/2023	13:36:07	O2	17.07	%	NOx-Out	3.87	ppm
3/13/2023	13:36:17	O2	16.67	%	NOx Out	4.01	ppm
3/13/2023	13:36:28	O2	16.46	%	NOx-Out	4.50	ppm
3/13/2023	13:36:38	O2	16.10	%	NOx-Out	5.01	ppm
3/13/2023	13:36:48	O2	16.69	%	NOx-Out	4.54	ppm
3/13/2023	13:36:58	O2	16.80	%	NOx-Out	4.09	ppm
3/13/2023	13:37:08	O2	16.72	%	NOx-Out	3.98	ppm
3/13/2023	13:37:18	O2	16.49	%	NOx Out	3.78	ppm
3/13/2023	13:37:28	O2	16.72	%	NOx Out	4.15	ppm
3/13/2023	13:37:38	O2	17.13	%	NOx Out	3.69	ppm
3/13/2023	13:37:48	O2	16.77	%	NOx-Out	4.18	ppm
3/13/2023	13:37:58	O2	16.86	%	NOx-Out	4.18	ppm
3/13/2023	13:38:08	O2	16.74	%	NOx-Out	4.35	ppm
3/13/2023	13:38:18	O2	16.63	%	NOx Out	4.36	ppm
3/13/2023	13:38:28	O2	16.70	%	NOx Out	4.42	ppm
3/13/2023	13:38:38	O2	16.84	%	NOx-Out	4.23	ppm
3/13/2023	13:38:48	O2	16.62	%	NOx-Out	4.00	ppm
3/13/2023	13:38:58	O2	16.45	%	NOx-Out	4.33	ppm
3/13/2023	13:39:08	O2	16.87	%	NOx-Out	4.09	ppm
3/13/2023	13:39:18	O2	17.06	%	NOx-Out	3.93	ppm
3/13/2023	13:39:28	O2	17.11	%	NOx Out	4.12	ppm
3/13/2023	13:39:38	O2	16.58	%	NOx Out	4.21	ppm
3/13/2023	13:39:48	O2	16.66	%	NOx-Out	4.59	ppm
3/13/2023	13:39:58	O2	16.32	%	NOx-Out	4.82	ppm
3/13/2023	13:40:08	O2	16.80	%	NOx-Out	4.24	ppm
3/13/2023	13:40:18	O2	16.89	%	NOx Out	4.39	ppm
3/13/2023	13:40:28	O2	16.60	%	NOx Out	4.13	ppm
3/13/2023	13:40:38	O2	16.29	%	NOx-Out	4.85	ppm
3/13/2023	13:40:48	O2	17.07	%	NOx-Out	3.95	ppm
3/13/2023	13:40:58	O2	16.73	%	NOx-Out	4.15	ppm
3/13/2023	13:41:08	O2	16.61	%	NOx Out	4.42	ppm
3/13/2023	13:41:18	O2	16.45	%	NOx-Out	4.65	ppm
3/13/2023	13:41:28	O2	16.50	%	NOx-Out	4.70	ppm
3/13/2023	13:41:38	O2	16.20	%	NOx Out	4.85	ppm
3/13/2023	13:41:48	O2	16.38	%	NOx-Out	4.62	ppm
3/13/2023	13:41:58	O2	16.80	%	NOx-Out	4.24	ppm
3/13/2023	13:42:08	O2	16.34	%	NOx-Out	4.36	ppm
3/13/2023	13:42:18	O2	16.30	%	NOx Out	4.66	ppm
3/13/2023	13:42:28	O2	16.79	%	NOx-Out	4.12	ppm
3/13/2023	13:42:38	O2	16.83	%	NOx-Out	4.03	ppm
3/13/2023	13:42:48	O2	16.58	%	NOx Out	4.38	ppm
3/13/2023	13:42:58	O2	16.66	%	NOx-Out	4.39	ppm
3/13/2023	13:43:08	O2	16.17	%	NOx-Out	4.91	ppm
3/13/2023	13:43:18	O2	16.66	%	NOx-Out	5.13	ppm

3/13/2023	13:43:28	O2	16.63	%	NOx-Out	4.52	ppm
3/13/2023	13:43:38	O2	16.64	%	NOx-Out	4.33	ppm
3/13/2023	13:43:48	O2	16.11	%	NOx-Out	4.78	ppm
3/13/2023	13:43:58	O2	16.32	%	NOx-Out	4.70	ppm
3/13/2023	13:44:08	O2	15.98	%	NOx-Out	4.62	ppm
3/13/2023	13:44:18	O2	16.38	%	NOx-Out	4.75	ppm
3/13/2023	13:44:28	O2	16.37	%	NOx-Out	4.77	ppm
3/13/2023	13:44:38	O2	16.71	%	NOx-Out	4.67	ppm
3/13/2023	13:44:48	O2	17.07	%	NOx-Out	4.06	ppm
3/13/2023	13:44:58	O2	16.82	%	NOx-Out	4.00	ppm
3/13/2023	13:45:08	O2	16.08	%	NOx-Out	4.18	ppm
3/13/2023	13:45:18	O2	16.27	%	NOx-Out	4.59	ppm
3/13/2023	13:45:28	O2	16.79	%	NOx-Out	4.28	ppm
3/13/2023	13:45:38	O2	17.13	%	NOx-Out	3.98	ppm
3/13/2023	13:45:48	O2	17.03	%	NOx-Out	4.08	ppm
3/13/2023	13:45:58	O2	16.67	%	NOx-Out	4.21	ppm
3/13/2023	13:46:08	O2	16.35	%	NOx-Out	5.01	ppm
3/13/2023	13:46:18	O2	16.74	%	NOx-Out	4.36	ppm
3/13/2023	13:46:28	O2	16.54	%	NOx Out	4.24	ppm
3/13/2023	13:46:38	O2	16.87	%	NOx-Out	3.94	ppm
3/13/2023	13:46:48	O2	16.66	%	NOx-Out	3.81	ppm
3/13/2023	13:46:58	O2	16.24	%	NOx-Out	4.47	ppm
3/13/2023	13:47:08	O2	16.78	%	NOx-Out	4.36	ppm
3/13/2023	13:47:18	O2	16.72	%	NOx Out	4.08	ppm
3/13/2023	13:47:28	O2	16.77	%	NOx Out	3.99	ppm
3/13/2023	13:47:38	O2	16.85	%	NOx-Out	4.09	ppm
3/13/2023	13:47:48	O2	16.67	%	NOx-Out	4.30	ppm
3/13/2023	13:47:58	O2	16.26	%	NOx-Out	4.83	ppm
3/13/2023	13:48:08	O2	16.75	%	NOx-Out	4.46	ppm
3/13/2023	13:48:18	O2	16.77	%	NOx Out	3.98	ppm
3/13/2023	13:48:28	O2	16.86	%	NOx Out	4.03	ppm
3/13/2023	13:48:38	O2	16.79	%	NOx Out	4.15	ppm
3/13/2023	13:48:48	O2	16.87	%	NOx-Out	4.21	ppm
3/13/2023	13:48:58	O2	16.87	%	NOx Out	4.30	ppm
3/13/2023	13:49:08	O2	16.40	%	NOx Out	4.33	ppm
3/13/2023	13:49:18	O2	16.65	%	NOx-Out	4.63	ppm
3/13/2023	13:49:28	O2	16.75	%	NOx-Out	4.50	ppm
3/13/2023	13:49:38	O2	16.66	%	NOx-Out	4.43	ppm
3/13/2023	13:49:48	O2	16.41	%	NOx Out	4.42	ppm
3/13/2023	13:49:58	O2	16.25	%	NOx-Out	4.67	ppm
3/13/2023	13:50:08	O2	16.87	%	NOx-Out	4.42	ppm
3/13/2023	13:50:18	O2	16.79	%	NOx Out	4.13	ppm
3/13/2023	13:50:28	O2	16.74	%	NOx Out	4.06	ppm
3/13/2023	13:50:38	O2	16.42	%	NOx-Out	4.59	ppm
3/13/2023	13:50:48	O2	16.59	%	NOx-Out	4.80	ppm
3/13/2023	13:50:58	O2	16.07	%	NOx-Out	5.06	ppm
3/13/2023	13:51:08	O2	16.11	%	NOx Out	5.34	ppm
3/13/2023	13:51:18	O2	16.59	%	NOx-Out	4.46	ppm
3/13/2023	13:51:28	O2	16.04	%	NOx-Out	4.91	ppm
3/13/2023	13:51:38	O2	16.15	%	NOx Out	4.52	ppm
3/13/2023	13:51:48	O2	16.41	%	NOx Out	4.75	ppm
3/13/2023	13:51:58	O2	16.36	%	NOx-Out	4.29	ppm
3/13/2023	13:52:08	O2	16.89	%	NOx-Out	4.16	ppm
3/13/2023	13:52:18	O2	16.94	%	NOx-Out	4.09	ppm
3/13/2023	13:52:28	O2	15.86	%	NOx Out	4.98	ppm
3/13/2023	13:52:38	O2	16.24	%	NOx-Out	5.37	ppm
3/13/2023	13:52:48	O2	16.30	%	NOx-Out	4.68	ppm
3/13/2023	13:57:58	O2	16.25	%	NOx Out	4.73	ppm

3/13/2023	13:53:08	O2	16.36	%	NOx Out	4.45	ppm
3/13/2023	13:53:18	O2	16.45	%	NOx Out	4.23	ppm
3/13/2023	13:53:28	O2	16.39	%	NOx Out	4.36	ppm
3/13/2023	13:53:38	O2	16.52	%	NOx Out	4.62	ppm
3/13/2023	13:53:48	O2	16.63	%	NOx Out	4.24	ppm
3/13/2023	13:53:58	O2	16.77	%	NOx Out	4.81	ppm
3/13/2023	13:54:08	O2	16.69	%	NOx Out	4.75	ppm
3/13/2023	13:54:18	O2	17.15	%	NOx Out	4.09	ppm
3/13/2023	13:54:28	O2	17.05	%	NOx Out	3.57	ppm
3/13/2023	13:54:38	O2	16.65	%	NOx Out	3.67	ppm
3/13/2023	13:54:48	O2	16.18	%	NOx Out	4.46	ppm
3/13/2023	13:54:58	O2	16.39	%	NOx Out	4.67	ppm
3/13/2023	13:55:08	O2	16.59	%	NOx Out	4.05	ppm
3/13/2023	13:55:18	O2	16.68	%	NOx Out	4.15	ppm
3/13/2023	13:55:28	O2	16.29	%	NOx Out	4.63	ppm
3/13/2023	13:55:38	O2	15.81	%	NOx Out	5.36	ppm
3/13/2023	13:55:48	O2	16.41	%	NOx Out	5.24	ppm
3/13/2023	13:55:58	O2	16.50	%	NOx Out	4.51	ppm
3/13/2023	13:56:08	O2	16.47	%	NOx Out	3.99	ppm
3/13/2023	13:56:18	O2	15.99	%	NOx Out	4.53	ppm
3/13/2023	13:56:28	O2	16.44	%	NOx Out	4.47	ppm
3/13/2023	13:56:38	O2	16.16	%	NOx Out	4.47	ppm
3/13/2023	13:56:48	O2	16.32	%	NOx Out	4.49	ppm
3/13/2023	13:56:58	O2	16.75	%	NOx Out	4.42	ppm
3/13/2023	13:57:08	O2	16.39	%	NOx Out	4.65	ppm
3/13/2023	13:57:18	O2	16.42	%	NOx Out	4.86	ppm
3/13/2023	13:57:28	O2	16.47	%	NOx Out	4.70	ppm
3/13/2023	13:57:38	O2	16.63	%	NOx Out	4.84	ppm
3/13/2023	13:57:48	O2	16.24	%	NOx Out	4.33	ppm
3/13/2023	13:57:58	O2	16.29	%	NOx Out	4.68	ppm
3/13/2023	13:58:08	O2	16.56	%	NOx Out	4.14	ppm
3/13/2023	13:58:18	O2	16.54	%	NOx Out	4.28	ppm
3/13/2023	13:58:28	O2	16.10	%	NOx Out	4.45	ppm
3/13/2023	13:58:38	O2	16.34	%	NOx Out	5.24	ppm
3/13/2023	13:58:48	O2	15.96	%	NOx Out	5.12	ppm
3/13/2023	13:58:58	O2	16.52	%	NOx Out	4.67	ppm
3/13/2023	13:59:08	O2	16.44	%	NOx Out	4.40	ppm
3/13/2023	13:59:18	O2	16.25	%	NOx Out	4.89	ppm
3/13/2023	13:59:28	O2	15.86	%	NOx Out	4.85	ppm
3/13/2023	13:59:38	O2	16.44	%	NOx Out	4.27	ppm
3/13/2023	13:59:48	O2	16.40	%	NOx Out	4.54	ppm
3/13/2023	13:59:58	O2	16.22	%	NOx Out	4.73	ppm
3/13/2023	14:00:08	O2	16.13	%	NOx Out	4.88	ppm
3/13/2023	14:00:18	O2	16.26	%	NOx Out	4.89	ppm
3/13/2023	14:00:28	O2	16.44	%	NOx Out	5.10	ppm
3/13/2023	14:00:38	O2	16.08	%	NOx Out	5.00	ppm
3/13/2023	14:00:48	O2	16.86	%	NOx Out	4.25	ppm
3/13/2023	14:00:58	O2	15.96	%	NOx Out	4.80	ppm
3/13/2023	14:01:08	O2	16.42	%	NOx Out	5.06	ppm
3/13/2023	14:01:18	O2	16.60	%	NOx Out	4.43	ppm
3/13/2023	14:01:28	O2	16.26	%	NOx Out	4.76	ppm
3/13/2023	14:01:38	O2	16.11	%	NOx Out	4.83	ppm
3/13/2023	14:01:48	O2	16.13	%	NOx Out	4.79	ppm
3/13/2023	14:01:58	O2	15.48	%	NOx Out	5.25	ppm
3/13/2023	14:02:08	O2	16.25	%	NOx Out	4.93	ppm
3/13/2023	14:02:18	O2	16.37	%	NOx Out	4.80	ppm
3/13/2023	14:02:28	O2	16.60	%	NOx Out	4.50	ppm
3/13/2023	14:02:38	O2	16.25	%	NOx Out	4.28	ppm

3/13/2023	14:02:48	O2	15.85	%	NOx-Out	4.57	ppm
3/13/2023	14:02:58	O2	16.09	%	NOx-Out	4.88	ppm
3/13/2023	14:03:08	O2	16.31	%	NOx-Out	4.36	ppm
3/13/2023	14:03:18	O2	16.55	%	NOx-Out	4.45	ppm
3/13/2023	14:03:28	O2	16.48	%	NOx Out	4.31	ppm
3/13/2023	14:03:38	O2	16.27	%	NOx-Out	4.43	ppm
3/13/2023	14:03:48	O2	16.17	%	NOx-Out	5.03	ppm
3/13/2023	14:03:58	O2	16.47	%	NOx-Out	4.56	ppm
3/13/2023	14:04:08	O2	16.42	%	NOx-Out	4.27	ppm
3/13/2023	14:04:18	O2	16.52	%	NOx-Out	4.19	ppm
3/13/2023	14:04:28	O2	16.85	%	NOx-Out	4.16	ppm
3/13/2023	14:04:38	O2	16.77	%	NOx-Out	3.90	ppm
3/13/2023	14:04:48	O2	15.80	%	NOx Out	4.70	ppm
3/13/2023	14:04:58	O2	16.24	%	NOx-Out	5.01	ppm
3/13/2023	14:05:08	O2	16.36	%	NOx-Out	5.00	ppm
3/13/2023	14:05:18	O2	16.86	%	NOx-Out	4.71	ppm
3/13/2023	14:05:28	O2	16.81	%	NOx-Out	4.25	ppm
3/13/2023	14:05:38	O2	16.51	%	NOx-Out	3.97	ppm
3/13/2023	14:05:48	O2	16.15	%	NOx Out	4.61	ppm
3/13/2023	14:05:58	O2	16.17	%	NOx Out	4.51	ppm
3/13/2023	14:06:08	O2	16.36	%	NOx Out	4.15	ppm
3/13/2023	14:06:18	O2	16.42	%	NOx-Out	4.17	ppm
3/13/2023	14:06:28	O2	16.46	%	NOx-Out	3.86	ppm
3/13/2023	14:06:38	O2	16.82	%	NOx-Out	4.82	ppm
3/13/2023	14:06:48	O2	16.32	%	NOx Out	4.51	ppm
3/13/2023	14:06:58	O2	16.16	%	NOx-Out	4.80	ppm
3/13/2023	14:07:08	O2	15.94	%	NOx-Out	5.31	ppm
3/13/2023	14:07:18	O2	17.14	%	NOx-Out	4.12	ppm
3/13/2023	14:07:28	O2	16.76	%	NOx-Out	4.06	ppm
3/13/2023	14:07:38	O2	16.40	%	NOx-Out	3.79	ppm
3/13/2023	14:07:48	O2	16.69	%	NOx Out	4.60	ppm
3/13/2023	14:07:58	O2	16.47	%	NOx Out	4.29	ppm
3/13/2023	14:08:08	O2	16.40	%	NOx-Out	4.85	ppm
3/13/2023	14:08:19	O2	16.83	%	NOx-Out	4.50	ppm
3/13/2023	14:08:29	O2	16.85	%	NOx-Out	4.46	ppm
3/13/2023	14:08:39	O2	16.41	%	NOx Out	4.41	ppm
3/13/2023	14:08:49	O2	16.36	%	NOx Out	4.23	ppm
3/13/2023	14:08:59	O2	15.61	%	NOx Out	5.10	ppm
3/13/2023	14:09:09	O2	16.03	%	NOx Out	4.96	ppm
3/13/2023	14:09:19	O2	16.59	%	NOx Out	4.38	ppm
3/13/2023	14:09:29	O2	16.66	%	NOx-Out	4.00	ppm
3/13/2023	14:09:39	O2	16.20	%	NOx Out	4.84	ppm
3/13/2023	14:09:49	O2	15.99	%	NOx Out	5.22	ppm
3/13/2023	14:09:59	O2	15.84	%	NOx-Out	5.18	ppm
3/13/2023	14:10:09	O2	16.65	%	NOx-Out	4.70	ppm
3/13/2023	14:10:19	O2	16.88	%	NOx Out	4.30	ppm
3/13/2023	14:10:29	O2	16.23	%	NOx Out	4.70	ppm
3/13/2023	14:10:39	O2	15.92	%	NOx-Out	4.58	ppm
3/13/2023	14:10:49	O2	16.46	%	NOx-Out	4.65	ppm
3/13/2023	14:10:59	O2	16.76	%	NOx Out	4.27	ppm
3/13/2023	14:11:09	O2	16.96	%	NOx-Out	4.15	ppm
3/13/2023	14:11:19	O2	16.56	%	NOx-Out	4.42	ppm
3/13/2023	14:11:29	O2	16.82	%	NOx-Out	4.30	ppm
3/13/2023	14:11:39	O2	16.55	%	NOx Out	4.59	ppm
3/13/2023	14:11:49	O2	16.60	%	NOx-Out	4.39	ppm
3/13/2023	14:11:59	O2	16.61	%	NOx-Out	4.72	ppm
3/13/2023	14:12:09	O2	16.07	%	NOx-Out	4.79	ppm
3/13/2023	14:12:19	O2	16.30	%	NOx-Out	4.77	ppm

3/13/2023	14:12:29	O2	16.74	%	NOx-Out	4.48	ppm
3/13/2023	14:12:39	O2	16.94	%	NOx-Out	4.10	ppm
3/13/2023	14:12:49	O2	16.66	%	NOx-Out	4.24	ppm
3/13/2023	14:12:59	O2	16.66	%	NOx-Out	4.34	ppm
3/13/2023	14:13:09	O2	16.71	%	NOx-Out	4.29	ppm
3/13/2023	14:13:19	O2	17.05	%	NOx-Out	4.15	ppm
3/13/2023	14:13:29	O2	16.91	%	NOx-Out	4.09	ppm
3/13/2023	14:13:39	O2	16.62	%	NOx-Out	4.17	ppm
3/13/2023	14:13:49	O2	16.60	%	NOx-Out	4.15	ppm
3/13/2023	14:13:59	O2	17.09	%	NOx-Out	3.87	ppm
3/13/2023	14:14:09	O2	16.88	%	NOx-Out	3.78	ppm
3/13/2023	14:14:19	O2	16.25	%	NOx-Out	4.36	ppm
3/13/2023	14:14:29	O2	16.29	%	NOx-Out	4.67	ppm
3/13/2023	14:14:39	O2	16.28	%	NOx-Out	5.21	ppm
3/13/2023	14:14:49	O2	16.58	%	NOx-Out	4.87	ppm
3/13/2023	14:14:59	O2	16.73	%	NOx-Out	4.53	ppm
3/13/2023	14:15:09	O2	16.87	%	NOx-Out	4.17	ppm
3/13/2023	14:15:19	O2	16.27	%	NOx-Out	4.35	ppm
3/13/2023	14:15:29	O2	16.23	%	NOx-Out	4.50	ppm
3/13/2023	14:15:39	O2	16.27	%	NOx-Out	4.24	ppm
3/13/2023	14:15:49	O2	16.37	%	NOx-Out	4.51	ppm
3/13/2023	14:15:59	O2	16.63	%	NOx-Out	4.32	ppm
3/13/2023	14:16:09	O2	16.88	%	NOx-Out	4.00	ppm
3/13/2023	14:16:19	O2	16.60	%	NOx-Out	4.66	ppm
3/13/2023	14:16:29	O2	16.54	%	NOx-Out	4.51	ppm
3/13/2023	14:16:39	O2	16.67	%	NOx-Out	4.62	ppm
3/13/2023	14:16:49	O2	16.81	%	NOx-Out	4.24	ppm
3/13/2023	14:16:59	O2	16.57	%	NOx-Out	4.23	ppm
3/13/2023	14:17:09	O2	16.74	%	NOx-Out	4.03	ppm
3/13/2023	14:17:19	O2	16.96	%	NOx-Out	4.05	ppm
3/13/2023	14:17:29	O2	16.60	%	NOx-Out	4.27	ppm
3/13/2023	14:17:39	O2	16.54	%	NOx-Out	4.49	ppm
3/13/2023	14:17:49	O2	16.37	%	NOx-Out	4.97	ppm
3/13/2023	14:17:59	O2	16.41	%	NOx-Out	4.86	ppm
3/13/2023	14:18:09	O2	16.71	%	NOx-Out	4.37	ppm
3/13/2023	14:18:19	O2	16.27	%	NOx-Out	4.39	ppm
3/13/2023	14:18:29	O2	15.97	%	NOx-Out	4.62	ppm
3/13/2023	14:18:39	O2	16.50	%	NOx-Out	5.09	ppm
3/13/2023	14:18:49	O2	16.84	%	NOx-Out	4.08	ppm
3/13/2023	14:18:59	O2	17.27	%	NOx-Out	4.02	ppm
3/13/2023	14:19:09	O2	16.88	%	NOx-Out	4.17	ppm
3/13/2023	14:19:19	O2	16.53	%	NOx-Out	4.25	ppm
3/13/2023	14:19:29	O2	16.50	%	NOx-Out	4.66	ppm
3/13/2023	14:19:39	O2	16.72	%	NOx-Out	4.58	ppm
3/13/2023	14:19:49	O2	16.81	%	NOx-Out	4.23	ppm
3/13/2023	14:19:59	O2	16.50	%	NOx-Out	4.01	ppm
3/13/2023	14:20:09	O2	16.57	%	NOx-Out	4.09	ppm
3/13/2023	14:20:19	O2	16.54	%	NOx-Out	4.23	ppm
3/13/2023	14:20:29	O2	16.70	%	NOx-Out	4.03	ppm
3/13/2023	14:20:39	O2	16.55	%	NOx-Out	4.15	ppm
3/13/2023	14:20:49	O2	16.48	%	NOx-Out	4.59	ppm
3/13/2023	14:20:59	O2	16.83	%	NOx-Out	4.51	ppm
3/13/2023	14:21:09	O2	16.93	%	NOx-Out	4.58	ppm
3/13/2023	14:21:19	O2	17.12	%	NOx-Out	4.24	ppm
3/13/2023	14:21:29	O2	16.71	%	NOx-Out	3.95	ppm
3/13/2023	14:21:39	O2	16.82	%	NOx-Out	4.15	ppm
3/13/2023	14:21:49	O2	16.49	%	NOx-Out	4.30	ppm
3/13/2023	14:21:59	O2	16.97	%	NOx-Out	4.09	ppm

3/13/2023	14:22:09	O2	16.67	%	NOx-Out	4.09	ppm
3/13/2023	14:22:19	O2	16.64	%	NOx Out	4.33	ppm
3/13/2023	14:22:29	O2	16.42	%	NOx Out	4.41	ppm
3/13/2023	14:22:39	O2	16.00	%	NOx Out	4.86	ppm
3/13/2023	14:22:49	O2	16.56	%	NOx-Out	4.69	ppm
3/13/2023	14:22:59	O2	17.00	%	NOx-Out	4.25	ppm
3/13/2023	14:23:09	O2	16.60	%	NOx-Out	4.03	ppm
3/13/2023	14:23:19	O2	16.56	%	NOx-Out	4.27	ppm
3/13/2023	14:23:29	O2	17.05	%	NOx-Out	3.92	ppm
3/13/2023	14:23:39	O2	17.09	%	NOx-Out	3.70	ppm
3/13/2023	14:23:49	O2	16.62	%	NOx Out	4.13	ppm
3/13/2023	14:23:59	O2	16.57	%	NOx Out	4.49	ppm
3/13/2023	14:24:09	O2	16.16	%	NOx-Out	4.91	ppm
3/13/2023	14:24:19	O2	17.01	%	NOx-Out	4.44	ppm
3/13/2023	14:24:29	O2	17.01	%	NOx-Out	4.27	ppm
3/13/2023	14:24:39	O2	16.80	%	NOx-Out	4.04	ppm
3/13/2023	14:24:49	O2	16.22	%	NOx-Out	4.29	ppm
3/13/2023	14:24:59	O2	16.32	%	NOx Out	4.37	ppm
3/13/2023	14:25:09	O2	16.72	%	NOx Out	4.21	ppm
3/13/2023	14:25:19	O2	16.97	%	NOx-Out	3.96	ppm
3/13/2023	14:25:29	O2	16.51	%	NOx-Out	4.32	ppm
3/13/2023	14:25:39	O2	16.38	%	NOx-Out	4.53	ppm
3/13/2023	14:25:49	O2	16.03	%	NOx Out	5.19	ppm
3/13/2023	14:25:59	O2	16.56	%	NOx Out	4.91	ppm
3/13/2023	14:26:09	O2	16.53	%	NOx Out	4.33	ppm
3/13/2023	14:26:19	O2	16.69	%	NOx Out	3.87	ppm
3/13/2023	14:26:29	O2	16.49	%	NOx-Out	4.06	ppm
3/13/2023	14:26:39	O2	16.54	%	NOx-Out	4.22	ppm
3/13/2023	14:26:49	O2	16.61	%	NOx-Out	4.41	ppm
3/13/2023	14:26:59	O2	16.72	%	NOx Out	4.52	ppm
3/13/2023	14:27:09	O2	16.94	%	NOx Out	4.13	ppm
3/13/2023	14:27:19	O2	16.85	%	NOx-Out	4.21	ppm
3/13/2023	14:27:29	O2	16.68	%	NOx-Out	4.48	ppm
3/13/2023	14:27:39	O2	16.48	%	NOx-Out	4.39	ppm
3/13/2023	14:27:49	O2	16.68	%	NOx-Out	4.64	ppm
3/13/2023	14:27:59	O2	16.81	%	NOx-Out	4.26	ppm
3/13/2023	14:28:09	O2	16.46	%	NOx Out	4.47	ppm
3/13/2023	14:28:19	O2	16.95	%	NOx Out	3.93	ppm
3/13/2023	14:28:29	O2	16.86	%	NOx-Out	4.10	ppm
3/13/2023	14:28:39	O2	16.57	%	NOx-Out	4.43	ppm
3/13/2023	14:28:49	O2	16.44	%	NOx-Out	4.58	ppm
3/13/2023	14:28:59	O2	16.86	%	NOx Out	4.58	ppm
3/13/2023	14:29:09	O2	17.06	%	NOx Out	4.15	ppm
3/13/2023	14:29:19	O2	17.15	%	NOx-Out	3.96	ppm
3/13/2023	14:29:29	O2	16.34	%	NOx-Out	4.12	ppm
3/13/2023	14:29:39	O2	15.78	%	NOx-Out	4.76	ppm
3/13/2023	14:29:49	O2	16.66	%	NOx Out	4.49	ppm
3/13/2023	14:29:59	O2	17.18	%	NOx-Out	3.93	ppm
3/13/2023	14:30:09	O2	16.86	%	NOx-Out	3.75	ppm
3/13/2023	14:30:19	O2	16.50	%	NOx-Out	4.24	ppm
3/13/2023	14:30:29	O2	16.33	%	NOx Out	4.89	ppm
3/13/2023	14:30:39	O2	16.89	%	NOx-Out	4.67	ppm
3/13/2023	14:30:49	O2	16.79	%	NOx-Out	4.12	ppm
3/13/2023	14:30:59	O2	16.85	%	NOx-Out	3.98	ppm
3/13/2023	14:31:09	O2	16.16	%	NOx Out	3.97	ppm
3/13/2023	14:31:19	O2	16.32	%	NOx-Out	4.52	ppm
3/13/2023	14:31:29	O2	16.79	%	NOx-Out	4.55	ppm
3/13/2023	14:31:39	O2	16.75	%	NOx Out	4.09	ppm

3/13/2023	14:31:49	O2	17.10	%	NOx-Out	4.13	ppm
3/13/2023	14:31:59	O2	16.42	%	NOx-Out	4.18	ppm
3/13/2023	14:32:09	O2	16.53	%	NOx-Out	4.45	ppm
3/13/2023	14:32:19	O2	16.53	%	NOx-Out	4.60	ppm
3/13/2023	14:32:29	O2	16.71	%	NOx Out	4.47	ppm
3/13/2023	14:32:39	O2	16.75	%	NOx-Out	3.90	ppm
3/13/2023	14:32:49	O2	16.91	%	NOx-Out	3.68	ppm
3/13/2023	14:32:59	O2	17.23	%	NOx-Out	3.46	ppm
3/13/2023	14:33:09	O2	16.78	%	NOx-Out	3.70	ppm
3/13/2023	14:33:19	O2	16.61	%	NOx-Out	4.14	ppm
3/13/2023	14:33:29	O2	16.44	%	NOx Out	4.55	ppm
3/13/2023	14:33:39	O2	16.46	%	NOx Out	4.66	ppm
3/13/2023	14:33:49	O2	16.72	%	NOx-Out	4.41	ppm
3/13/2023	14:33:59	O2	16.61	%	NOx-Out	3.91	ppm
3/13/2023	14:34:09	O2	16.58	%	NOx-Out	4.21	ppm
3/13/2023	14:34:19	O2	16.53	%	NOx-Out	3.96	ppm
3/13/2023	14:34:29	O2	16.68	%	NOx-Out	4.28	ppm
3/13/2023	14:34:39	O2	16.66	%	NOx-Out	4.37	ppm
3/13/2023	14:34:49	O2	16.70	%	NOx-Out	4.05	ppm
3/13/2023	14:34:59	O2	16.80	%	NOx-Out	4.01	ppm
	Average:		**16.55**			**4.41**	

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Post Run Two
3/13/2023

3/13/2023	14:35:19	O2	16.48	%	NOx-Out	4.73	ppm
3/13/2023	14:35:29	O2	11.83	%	NOx-Out	4.16	ppm
3/13/2023	14:35:39	O2	0.33	%	NOx-Out	0.24	ppm
3/13/2023	14:35:49	O2	0.15	%	NOx-Out	0.20	ppm
3/13/2023	14:35:59	O2	0.10	%	NOx-Out	0.15	ppm
3/13/2023	14:36:09	O2	0.05	%	NOx-Out	0.16	ppm
3/13/2023	14:36:19	O2	0.01	%	NOx-Out	0.13	ppm
3/13/2023	14:36:29	O2	0.01	%	NOx-Out	0.13	ppm
3/13/2023	14:36:39	O2	8.33	%	NOx-Out	0.11	ppm
3/13/2023	14:36:49	O2	12.47	%	NOx-Out	0.13	ppm
3/13/2023	14:36:59	O2	12.61	%	NOx-Out	0.11	ppm
3/13/2023	14:37:09	O2	12.71	%	NOx-Out	0.11	ppm
3/13/2023	14:37:19	O2	12.75	%	NOx-Out	0.09	ppm
3/13/2023	14:37:29	O2	12.75	%	NOx-Out	0.08	ppm
3/13/2023	14:37:39	O2	12.69	%	NOx-Out	0.08	ppm
3/13/2023	14:37:49	O2	0.42	%	NOx-Out	4.50	ppm
3/13/2023	14:37:59	O2	0.11	%	NOx-Out	5.00	ppm
3/13/2023	14:38:09	O2	0.06	%	NOx-Out	5.04	ppm
3/13/2023	14:38:19	O2	0.03	%	NOx-Out	5.03	ppm
3/13/2023	14:38:29	O2	0.01	%	NOx-Out	5.06	ppm
3/13/2023	14:38:39	O2	12.75	%	NOx-Out	5.06	ppm
3/13/2023	14:38:49	O2	16.24	%	NOx-Out	4.33	ppm

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Run Three
1448 - 1548
3/13/2023

3/13/2023	14:48:06	O2	16.92	%	NOx-Out	4.27	ppm
3/13/2023	14:48:16	O2	16.77	%	NOx-Out	4.35	ppm
3/13/2023	14:48:26	O2	16.40	%	NOx Out	4.21	ppm
3/13/2023	14:48:36	O2	16.59	%	NOx-Out	4.26	ppm
3/13/2023	14:48:46	O2	16.81	%	NOx-Out	4.12	ppm
3/13/2023	14:48:56	O2	16.85	%	NOx-Out	4.23	ppm
3/13/2023	14:49:06	O2	16.56	%	NOx-Out	4.27	ppm
3/13/2023	14:49:16	O2	16.43	%	NOx-Out	4.60	ppm
3/13/2023	14:49:26	O2	16.46	%	NOx-Out	4.90	ppm
3/13/2023	14:49:36	O2	16.64	%	NOx-Out	4.52	ppm
3/13/2023	14:49:46	O2	16.96	%	NOx-Out	4.06	ppm
3/13/2023	14:49:56	O2	16.60	%	NOx Out	4.13	ppm
3/13/2023	14:50:06	O2	16.59	%	NOx-Out	4.02	ppm
3/13/2023	14:50:16	O2	16.13	%	NOx-Out	4.69	ppm
3/13/2023	14:50:26	O2	16.44	%	NOx-Out	4.21	ppm
3/13/2023	14:50:36	O2	16.65	%	NOx Out	4.27	ppm
3/13/2023	14:50:46	O2	16.48	%	NOx-Out	4.56	ppm
3/13/2023	14:50:56	O2	16.43	%	NOx-Out	4.39	ppm
3/13/2023	14:51:06	O2	16.48	%	NOx-Out	4.58	ppm
3/13/2023	14:51:16	O2	16.53	%	NOx-Out	4.68	ppm
3/13/2023	14:51:26	O2	16.70	%	NOx Out	4.21	ppm
3/13/2023	14:51:36	O2	16.48	%	NOx Out	3.78	ppm
3/13/2023	14:51:46	O2	16.45	%	NOx-Out	4.12	ppm
3/13/2023	14:51:56	O2	16.51	%	NOx-Out	4.17	ppm
3/13/2023	14:52:06	O2	16.52	%	NOx-Out	4.12	ppm
3/13/2023	14:52:16	O2	16.58	%	NOx-Out	4.37	ppm
3/13/2023	14:52:26	O2	16.37	%	NOx-Out	4.41	ppm
3/13/2023	14:52:36	O2	16.42	%	NOx-Out	4.56	ppm
3/13/2023	14:52:46	O2	16.70	%	NOx Out	4.47	ppm
3/13/2023	14:52:56	O2	16.85	%	NOx-Out	4.26	ppm
3/13/2023	14:53:06	O2	16.93	%	NOx-Out	3.92	ppm
3/13/2023	14:53:16	O2	16.83	%	NOx-Out	3.82	ppm
3/13/2023	14:53:26	O2	16.72	%	NOx-Out	4.06	ppm
3/13/2023	14:53:36	O2	16.55	%	NOx-Out	4.25	ppm
3/13/2023	14:53:46	O2	16.39	%	NOx-Out	4.55	ppm
3/13/2023	14:53:56	O2	16.85	%	NOx Out	4.09	ppm
3/13/2023	14:54:06	O2	17.00	%	NOx-Out	3.97	ppm
3/13/2023	14:54:16	O2	16.81	%	NOx-Out	4.32	ppm
3/13/2023	14:54:26	O2	16.66	%	NOx-Out	4.28	ppm
3/13/2023	14:54:36	O2	16.63	%	NOx-Out	4.39	ppm
3/13/2023	14:54:46	O2	16.25	%	NOx-Out	4.43	ppm
3/13/2023	14:54:56	O2	16.11	%	NOx-Out	4.70	ppm
3/13/2023	14:55:06	O2	16.80	%	NOx Out	4.13	ppm
3/13/2023	14:55:16	O2	17.02	%	NOx Out	4.13	ppm
3/13/2023	14:55:26	O2	15.93	%	NOx-Out	5.18	ppm
3/13/2023	14:55:36	O2	16.52	%	NOx-Out	4.66	ppm
3/13/2023	14:55:46	O2	16.32	%	NOx-Out	4.89	ppm
3/13/2023	14:55:56	O2	16.42	%	NOx Out	4.99	ppm
3/13/2023	14:56:06	O2	16.84	%	NOx-Out	4.40	ppm
3/13/2023	14:56:16	O2	16.11	%	NOx-Out	4.71	ppm

3/13/2023	14:56:26	O2	16.71	%	NOx-Out	4.21	ppm
3/13/2023	14:56:36	O2	16.36	%	NOx Out	4.39	ppm
3/13/2023	14:56:46	O2	16.80	%	NOx Out	4.13	ppm
3/13/2023	14:56:56	O2	16.84	%	NOx-Out	3.90	ppm
3/13/2023	14:57:06	O2	16.25	%	NOx-Out	4.32	ppm
3/13/2023	14:57:16	O2	15.93	%	NOx-Out	4.98	ppm
3/13/2023	14:57:26	O2	16.06	%	NOx-Out	4.82	ppm
3/13/2023	14:57:36	O2	16.71	%	NOx Out	4.53	ppm
3/13/2023	14:57:46	O2	16.74	%	NOx Out	4.29	ppm
3/13/2023	14:57:56	O2	16.74	%	NOx Out	3.74	ppm
3/13/2023	14:58:06	O2	16.48	%	NOx Out	4.18	ppm
3/13/2023	14:58:16	O2	16.38	%	NOx Out	4.54	ppm
3/13/2023	14:58:26	O2	16.03	%	NOx Out	4.68	ppm
3/13/2023	14:58:36	O2	16.34	%	NOx-Out	4.40	ppm
3/13/2023	14:58:46	O2	16.72	%	NOx-Out	4.28	ppm
3/13/2023	14:58:56	O2	16.37	%	NOx-Out	4.46	ppm
3/13/2023	14:59:06	O2	15.97	%	NOx Out	4.94	ppm
3/13/2023	14:59:16	O2	16.42	%	NOx-Out	4.55	ppm
3/13/2023	14:59:26	O2	16.65	%	NOx-Out	4.12	ppm
3/13/2023	14:59:36	O2	16.46	%	NOx-Out	3.91	ppm
3/13/2023	14:59:47	O2	16.51	%	NOx-Out	4.21	ppm
3/13/2023	14:59:57	O2	16.45	%	NOx-Out	4.30	ppm
3/13/2023	15:00:07	O2	16.38	%	NOx Out	4.41	ppm
3/13/2023	15:00:17	O2	15.95	%	NOx-Out	4.73	ppm
3/13/2023	15:00:27	O2	16.15	%	NOx-Out	4.87	ppm
3/13/2023	15:00:37	O2	16.53	%	NOx-Out	4.55	ppm
3/13/2023	15:00:47	O2	16.89	%	NOx-Out	4.03	ppm
3/13/2023	15:00:57	O2	16.70	%	NOx-Out	3.92	ppm
3/13/2023	15:01:07	O2	16.43	%	NOx-Out	4.35	ppm
3/13/2023	15:01:17	O2	16.19	%	NOx Out	4.47	ppm
3/13/2023	15:01:27	O2	16.93	%	NOx Out	4.00	ppm
3/13/2023	15:01:37	O2	16.96	%	NOx-Out	3.42	ppm
3/13/2023	15:01:47	O2	16.54	%	NOx-Out	4.25	ppm
3/13/2023	15:01:57	O2	16.14	%	NOx-Out	4.73	ppm
3/13/2023	15:02:07	O2	16.16	%	NOx-Out	4.91	ppm
3/13/2023	15:02:17	O2	16.70	%	NOx Out	4.76	ppm
3/13/2023	15:02:27	O2	16.84	%	NOx Out	4.28	ppm
3/13/2023	15:02:37	O2	16.84	%	NOx-Out	3.84	ppm
3/13/2023	15:02:47	O2	16.45	%	NOx-Out	3.97	ppm
3/13/2023	15:02:57	O2	16.14	%	NOx-Out	4.52	ppm
3/13/2023	15:03:07	O2	16.41	%	NOx Out	4.52	ppm
3/13/2023	15:03:17	O2	16.81	%	NOx-Out	4.08	ppm
3/13/2023	15:03:27	O2	16.92	%	NOx-Out	4.17	ppm
3/13/2023	15:03:37	O2	16.33	%	NOx-Out	4.40	ppm
3/13/2023	15:03:47	O2	16.77	%	NOx-Out	4.26	ppm
3/13/2023	15:03:57	O2	16.32	%	NOx-Out	4.71	ppm
3/13/2023	15:04:07	O2	16.63	%	NOx-Out	4.40	ppm
3/13/2023	15:04:17	O2	16.57	%	NOx-Out	4.42	ppm
3/13/2023	15:04:27	O2	16.71	%	NOx-Out	4.07	ppm
3/13/2023	15:04:37	O2	17.05	%	NOx-Out	3.83	ppm
3/13/2023	15:04:47	O2	17.02	%	NOx-Out	3.90	ppm
3/13/2023	15:04:57	O2	16.53	%	NOx Out	4.42	ppm
3/13/2023	15:05:07	O2	16.47	%	NOx-Out	4.46	ppm
3/13/2023	15:05:17	O2	16.58	%	NOx-Out	4.70	ppm
3/13/2023	15:05:27	O2	16.72	%	NOx-Out	4.38	ppm
3/13/2023	15:05:37	O2	16.80	%	NOx Out	4.21	ppm
3/13/2023	15:05:47	O2	16.63	%	NOx Out	4.23	ppm
3/13/2023	15:05:57	O2	16.18	%	NOx Out	4.30	ppm

3/13/2023	15:06:07	O2	16.46	%	NOx-Out	4.32	ppm
3/13/2023	15:06:17	O2	16.76	%	NOx-Out	4.05	ppm
3/13/2023	15:06:27	O2	16.92	%	NOx-Out	4.14	ppm
3/13/2023	15:06:37	O2	16.73	%	NOx-Out	4.24	ppm
3/13/2023	15:06:47	O2	16.44	%	NOx-Out	4.54	ppm
3/13/2023	15:06:57	O2	16.28	%	NOx Out	4.52	ppm
3/13/2023	15:07:07	O2	16.45	%	NOx-Out	4.73	ppm
3/13/2023	15:07:17	O2	16.78	%	NOx-Out	4.27	ppm
3/13/2023	15:07:27	O2	16.62	%	NOx-Out	4.17	ppm
3/13/2023	15:07:37	O2	16.32	%	NOx-Out	4.30	ppm
3/13/2023	15:07:47	O2	16.53	%	NOx-Out	4.11	ppm
3/13/2023	15:07:57	O2	16.46	%	NOx-Out	4.44	ppm
3/13/2023	15:08:07	O2	16.73	%	NOx Out	4.20	ppm
3/13/2023	15:08:17	O2	16.33	%	NOx-Out	4.62	ppm
3/13/2023	15:08:27	O2	16.47	%	NOx-Out	4.38	ppm
3/13/2023	15:08:37	O2	16.48	%	NOx-Out	4.69	ppm
3/13/2023	15:08:47	O2	17.06	%	NOx-Out	4.03	ppm
3/13/2023	15:08:57	O2	16.84	%	NOx-Out	4.02	ppm
3/13/2023	15:09:07	O2	16.65	%	NOx-Out	3.96	ppm
3/13/2023	15:09:17	O2	16.52	%	NOx-Out	4.44	ppm
3/13/2023	15:09:27	O2	16.39	%	NOx-Out	4.45	ppm
3/13/2023	15:09:37	O2	16.73	%	NOx-Out	3.95	ppm
3/13/2023	15:09:47	O2	16.23	%	NOx-Out	4.42	ppm
3/13/2023	15:09:57	O2	16.03	%	NOx-Out	5.16	ppm
3/13/2023	15:10:07	O2	15.97	%	NOx-Out	5.15	ppm
3/13/2023	15:10:17	O2	16.64	%	NOx-Out	4.54	ppm
3/13/2023	15:10:27	O2	16.63	%	NOx-Out	4.44	ppm
3/13/2023	15:10:37	O2	16.64	%	NOx-Out	4.00	ppm
3/13/2023	15:10:47	O2	16.56	%	NOx-Out	4.12	ppm
3/13/2023	15:10:57	O2	17.06	%	NOx-Out	3.52	ppm
3/13/2023	15:11:07	O2	17.17	%	NOx-Out	3.69	ppm
3/13/2023	15:11:17	O2	16.35	%	NOx Out	4.06	ppm
3/13/2023	15:11:27	O2	16.05	%	NOx-Out	5.01	ppm
3/13/2023	15:11:37	O2	16.30	%	NOx-Out	4.82	ppm
3/13/2023	15:11:47	O2	16.87	%	NOx-Out	4.21	ppm
3/13/2023	15:11:57	O2	16.65	%	NOx-Out	4.05	ppm
3/13/2023	15:12:07	O2	16.43	%	NOx-Out	3.99	ppm
3/13/2023	15:12:17	O2	16.47	%	NOx Out	4.32	ppm
3/13/2023	15:12:27	O2	16.45	%	NOx Out	4.30	ppm
3/13/2023	15:12:37	O2	16.81	%	NOx Out	3.83	ppm
3/13/2023	15:12:47	O2	17.14	%	NOx-Out	3.83	ppm
3/13/2023	15:12:57	O2	16.73	%	NOx-Out	4.05	ppm
3/13/2023	15:13:07	O2	16.45	%	NOx-Out	4.61	ppm
3/13/2023	15:13:17	O2	16.18	%	NOx-Out	4.82	ppm
3/13/2023	15:13:27	O2	16.58	%	NOx-Out	4.53	ppm
3/13/2023	15:13:37	O2	17.10	%	NOx-Out	3.99	ppm
3/13/2023	15:13:47	O2	16.81	%	NOx Out	3.82	ppm
3/13/2023	15:13:57	O2	16.56	%	NOx-Out	4.06	ppm
3/13/2023	15:14:07	O2	16.80	%	NOx-Out	4.12	ppm
3/13/2023	15:14:17	O2	16.91	%	NOx Out	4.16	ppm
3/13/2023	15:14:27	O2	16.92	%	NOx Out	4.03	ppm
3/13/2023	15:14:37	O2	16.87	%	NOx-Out	4.09	ppm
3/13/2023	15:14:47	O2	16.52	%	NOx-Out	4.56	ppm
3/13/2023	15:14:57	O2	16.45	%	NOx Out	4.72	ppm
3/13/2023	15:15:07	O2	16.81	%	NOx-Out	4.47	ppm
3/13/2023	15:15:17	O2	16.81	%	NOx-Out	4.02	ppm
3/13/2023	15:15:27	O2	16.71	%	NOx-Out	3.86	ppm
3/13/2023	15:15:37	O2	16.96	%	NOx Out	3.91	ppm

3/13/2023	15:15:47	O2	16.75	%	NOx-Out	4.10	ppm
3/13/2023	15:15:57	O2	16.74	%	NOx-Out	4.27	ppm
3/13/2023	15:16:07	O2	16.74	%	NOx-Out	4.23	ppm
3/13/2023	15:16:17	O2	16.71	%	NOx-Out	4.42	ppm
3/13/2023	15:16:27	O2	16.52	%	NOx-Out	4.60	ppm
3/13/2023	15:16:37	O2	16.07	%	NOx-Out	4.92	ppm
3/13/2023	15:16:47	O2	16.74	%	NOx-Out	4.21	ppm
3/13/2023	15:16:57	O2	16.24	%	NOx-Out	4.44	ppm
3/13/2023	15:17:07	O2	16.10	%	NOx-Out	4.47	ppm
3/13/2023	15:17:17	O2	16.70	%	NOx-Out	4.23	ppm
3/13/2023	15:17:27	O2	17.03	%	NOx-Out	3.81	ppm
3/13/2023	15:17:37	O2	16.65	%	NOx-Out	4.21	ppm
3/13/2023	15:17:47	O2	16.48	%	NOx-Out	4.45	ppm
3/13/2023	15:17:57	O2	16.52	%	NOx-Out	4.70	ppm
3/13/2023	15:18:07	O2	16.93	%	NOx-Out	4.51	ppm
3/13/2023	15:18:17	O2	16.92	%	NOx-Out	4.00	ppm
3/13/2023	15:18:27	O2	16.86	%	NOx-Out	3.92	ppm
3/13/2023	15:18:37	O2	16.44	%	NOx-Out	4.06	ppm
3/13/2023	15:18:47	O2	16.25	%	NOx-Out	4.57	ppm
3/13/2023	15:18:57	O2	16.65	%	NOx-Out	4.34	ppm
3/13/2023	15:19:07	O2	16.90	%	NOx-Out	4.21	ppm
3/13/2023	15:19:17	O2	16.08	%	NOx-Out	4.43	ppm
3/13/2023	15:19:27	O2	16.59	%	NOx-Out	4.35	ppm
3/13/2023	15:19:37	O2	16.13	%	NOx-Out	5.10	ppm
3/13/2023	15:19:47	O2	16.64	%	NOx-Out	4.39	ppm
3/13/2023	15:19:57	O2	16.48	%	NOx-Out	4.44	ppm
3/13/2023	15:20:07	O2	16.51	%	NOx-Out	4.14	ppm
3/13/2023	15:20:17	O2	16.75	%	NOx-Out	4.09	ppm
3/13/2023	15:20:27	O2	17.14	%	NOx-Out	3.67	ppm
3/13/2023	15:20:37	O2	17.01	%	NOx-Out	3.54	ppm
3/13/2023	15:20:47	O2	16.15	%	NOx-Out	4.56	ppm
3/13/2023	15:20:57	O2	16.19	%	NOx-Out	4.47	ppm
3/13/2023	15:21:07	O2	16.38	%	NOx-Out	4.52	ppm
3/13/2023	15:21:17	O2	16.56	%	NOx-Out	4.41	ppm
3/13/2023	15:21:27	O2	16.71	%	NOx-Out	4.17	ppm
3/13/2023	15:21:37	O2	16.49	%	NOx-Out	4.37	ppm
3/13/2023	15:21:47	O2	16.83	%	NOx-Out	3.90	ppm
3/13/2023	15:21:57	O2	16.55	%	NOx-Out	4.37	ppm
3/13/2023	15:22:07	O2	16.68	%	NOx-Out	4.14	ppm
3/13/2023	15:22:17	O2	16.93	%	NOx-Out	4.06	ppm
3/13/2023	15:22:27	O2	16.88	%	NOx-Out	3.89	ppm
3/13/2023	15:22:37	O2	16.65	%	NOx-Out	4.20	ppm
3/13/2023	15:22:47	O2	16.29	%	NOx-Out	4.66	ppm
3/13/2023	15:22:57	O2	16.65	%	NOx-Out	4.49	ppm
3/13/2023	15:23:07	O2	16.62	%	NOx-Out	4.47	ppm
3/13/2023	15:23:17	O2	16.85	%	NOx-Out	3.83	ppm
3/13/2023	15:23:27	O2	16.50	%	NOx-Out	4.08	ppm
3/13/2023	15:23:37	O2	16.63	%	NOx-Out	4.27	ppm
3/13/2023	15:23:47	O2	16.69	%	NOx-Out	4.14	ppm
3/13/2023	15:23:57	O2	16.96	%	NOx-Out	3.90	ppm
3/13/2023	15:24:07	O2	16.56	%	NOx-Out	4.20	ppm
3/13/2023	15:24:17	O2	16.49	%	NOx-Out	4.56	ppm
3/13/2023	15:24:27	O2	16.36	%	NOx-Out	4.56	ppm
3/13/2023	15:24:37	O2	16.83	%	NOx-Out	4.46	ppm
3/13/2023	15:24:47	O2	16.79	%	NOx-Out	4.22	ppm
3/13/2023	15:24:57	O2	16.46	%	NOx-Out	4.52	ppm
3/13/2023	15:25:07	O2	16.82	%	NOx-Out	4.04	ppm
3/13/2023	15:25:17	O2	16.94	%	NOx-Out	3.97	ppm

3/13/2023	15:25:27	O2	16.65	%	NOx-Out	4.02	ppm
3/13/2023	15:25:37	O2	16.20	%	NOx-Out	4.60	ppm
3/13/2023	15:25:47	O2	16.34	%	NOx Out	4.81	ppm
3/13/2023	15:25:57	O2	16.23	%	NOx Out	5.13	ppm
3/13/2023	15:26:07	O2	16.10	%	NOx-Out	5.20	ppm
3/13/2023	15:26:17	O2	16.65	%	NOx-Out	4.43	ppm
3/13/2023	15:26:27	O2	16.61	%	NOx-Out	4.00	ppm
3/13/2023	15:26:37	O2	16.85	%	NOx-Out	4.24	ppm
3/13/2023	15:26:47	O2	16.75	%	NOx-Out	4.27	ppm
3/13/2023	15:26:57	O2	17.16	%	NOx-Out	3.89	ppm
3/13/2023	15:27:07	O2	16.99	%	NOx Out	4.01	ppm
3/13/2023	15:27:17	O2	16.70	%	NOx Out	4.31	ppm
3/13/2023	15:27:27	O2	16.53	%	NOx-Out	4.79	ppm
3/13/2023	15:27:37	O2	16.64	%	NOx-Out	4.81	ppm
3/13/2023	15:27:47	O2	16.98	%	NOx-Out	4.36	ppm
3/13/2023	15:27:57	O2	17.00	%	NOx-Out	3.89	ppm
3/13/2023	15:28:07	O2	16.60	%	NOx-Out	3.72	ppm
3/13/2023	15:28:17	O2	16.64	%	NOx Out	4.01	ppm
3/13/2023	15:28:27	O2	16.79	%	NOx Out	4.11	ppm
3/13/2023	15:28:37	O2	16.80	%	NOx-Out	4.12	ppm
3/13/2023	15:28:47	O2	16.54	%	NOx-Out	4.26	ppm
3/13/2023	15:28:57	O2	16.91	%	NOx-Out	4.27	ppm
3/13/2023	15:29:08	O2	16.80	%	NOx-Out	4.54	ppm
3/13/2023	15:29:18	O2	16.83	%	NOx-Out	4.09	ppm
3/13/2023	15:29:28	O2	16.80	%	NOx Out	4.13	ppm
3/13/2023	15:29:38	O2	16.41	%	NOx Out	3.99	ppm
3/13/2023	15:29:48	O2	16.58	%	NOx-Out	4.18	ppm
3/13/2023	15:29:58	O2	16.97	%	NOx-Out	4.07	ppm
3/13/2023	15:30:08	O2	16.94	%	NOx-Out	3.78	ppm
3/13/2023	15:30:18	O2	16.25	%	NOx-Out	4.33	ppm
3/13/2023	15:30:28	O2	16.19	%	NOx Out	4.86	ppm
3/13/2023	15:30:38	O2	16.57	%	NOx-Out	4.54	ppm
3/13/2023	15:30:48	O2	16.71	%	NOx-Out	4.41	ppm
3/13/2023	15:30:58	O2	16.76	%	NOx-Out	4.26	ppm
3/13/2023	15:31:08	O2	16.80	%	NOx-Out	4.06	ppm
3/13/2023	15:31:18	O2	16.47	%	NOx-Out	4.01	ppm
3/13/2023	15:31:28	O2	16.49	%	NOx-Out	4.02	ppm
3/13/2023	15:31:38	O2	16.31	%	NOx-Out	4.39	ppm
3/13/2023	15:31:48	O2	16.62	%	NOx-Out	4.09	ppm
3/13/2023	15:31:58	O2	16.46	%	NOx-Out	3.90	ppm
3/13/2023	15:32:08	O2	16.73	%	NOx-Out	4.18	ppm
3/13/2023	15:32:18	O2	16.10	%	NOx Out	4.63	ppm
3/13/2023	15:32:28	O2	16.41	%	NOx-Out	4.58	ppm
3/13/2023	15:32:38	O2	16.45	%	NOx-Out	4.55	ppm
3/13/2023	15:32:48	O2	16.50	%	NOx-Out	4.31	ppm
3/13/2023	15:32:58	O2	16.51	%	NOx-Out	4.43	ppm
3/13/2023	15:33:08	O2	16.88	%	NOx Out	4.09	ppm
3/13/2023	15:33:18	O2	17.10	%	NOx-Out	3.82	ppm
3/13/2023	15:33:28	O2	16.79	%	NOx-Out	4.01	ppm
3/13/2023	15:33:38	O2	16.41	%	NOx Out	4.56	ppm
3/13/2023	15:33:48	O2	16.28	%	NOx-Out	5.25	ppm
3/13/2023	15:33:58	O2	16.66	%	NOx-Out	4.61	ppm
3/13/2023	15:34:08	O2	16.87	%	NOx Out	4.32	ppm
3/13/2023	15:34:18	O2	16.50	%	NOx-Out	4.37	ppm
3/13/2023	15:34:28	O2	16.53	%	NOx-Out	4.17	ppm
3/13/2023	15:34:38	O2	16.69	%	NOx-Out	4.45	ppm
3/13/2023	15:34:48	O2	16.85	%	NOx Out	3.90	ppm
3/13/2023	15:34:58	O2	16.77	%	NOx-Out	3.96	ppm

3/13/2023	15:35:08	O2	16.46	%	NOx-Out	4.20	ppm
3/13/2023	15:35:18	O2	16.00	%	NOx-Out	4.97	ppm
3/13/2023	15:35:28	O2	16.11	%	NOx-Out	4.98	ppm
3/13/2023	15:35:38	O2	16.55	%	NOx Out	5.00	ppm
3/13/2023	15:35:48	O2	16.71	%	NOx-Out	4.24	ppm
3/13/2023	15:35:58	O2	16.52	%	NOx-Out	4.17	ppm
3/13/2023	15:36:08	O2	16.02	%	NOx-Out	4.42	ppm
3/13/2023	15:36:18	O2	16.26	%	NOx Out	4.49	ppm
3/13/2023	15:36:28	O2	15.94	%	NOx Out	4.65	ppm
3/13/2023	15:36:38	O2	16.45	%	NOx Out	4.24	ppm
3/13/2023	15:36:48	O2	16.30	%	NOx-Out	4.47	ppm
3/13/2023	15:36:58	O2	16.15	%	NOx-Out	5.03	ppm
3/13/2023	15:37:08	O2	16.02	%	NOx-Out	4.73	ppm
3/13/2023	15:37:18	O2	15.96	%	NOx-Out	4.94	ppm
3/13/2023	15:37:28	O2	15.99	%	NOx-Out	4.95	ppm
3/13/2023	15:37:38	O2	16.14	%	NOx Out	4.67	ppm
3/13/2023	15:37:48	O2	16.48	%	NOx Out	4.26	ppm
3/13/2023	15:37:58	O2	16.89	%	NOx Out	4.11	ppm
3/13/2023	15:38:08	O2	16.18	%	NOx Out	4.11	ppm
3/13/2023	15:38:18	O2	15.96	%	NOx-Out	4.70	ppm
3/13/2023	15:38:28	O2	15.65	%	NOx-Out	5.05	ppm
3/13/2023	15:38:38	O2	16.69	%	NOx-Out	4.42	ppm
3/13/2023	15:38:48	O2	16.58	%	NOx-Out	4.56	ppm
3/13/2023	15:38:58	O2	16.79	%	NOx-Out	4.02	ppm
3/13/2023	15:39:08	O2	16.91	%	NOx-Out	3.70	ppm
3/13/2023	15:39:18	O2	16.81	%	NOx-Out	3.98	ppm
3/13/2023	15:39:28	O2	17.21	%	NOx-Out	3.49	ppm
3/13/2023	15:39:38	O2	16.86	%	NOx Out	3.78	ppm
3/13/2023	15:39:48	O2	16.33	%	NOx Out	4.29	ppm
3/13/2023	15:39:58	O2	16.26	%	NOx Out	4.80	ppm
3/13/2023	15:40:08	O2	16.51	%	NOx-Out	4.69	ppm
3/13/2023	15:40:18	O2	16.71	%	NOx-Out	4.36	ppm
3/13/2023	15:40:28	O2	16.58	%	NOx-Out	4.36	ppm
3/13/2023	15:40:38	O2	16.52	%	NOx Out	3.95	ppm
3/13/2023	15:40:48	O2	16.40	%	NOx Out	4.25	ppm
3/13/2023	15:40:58	O2	16.42	%	NOx Out	4.29	ppm
3/13/2023	15:41:08	O2	16.82	%	NOx-Out	4.15	ppm
3/13/2023	15:41:18	O2	16.92	%	NOx-Out	3.93	ppm
3/13/2023	15:41:28	O2	17.00	%	NOx-Out	3.79	ppm
3/13/2023	15:41:38	O2	16.77	%	NOx-Out	4.00	ppm
3/13/2023	15:41:48	O2	16.54	%	NOx Out	4.37	ppm
3/13/2023	15:41:58	O2	16.72	%	NOx-Out	4.44	ppm
3/13/2023	15:42:08	O2	16.81	%	NOx-Out	4.33	ppm
3/13/2023	15:42:18	O2	16.94	%	NOx Out	3.92	ppm
3/13/2023	15:42:28	O2	16.75	%	NOx Out	3.91	ppm
3/13/2023	15:42:38	O2	16.80	%	NOx-Out	4.03	ppm
3/13/2023	15:42:48	O2	16.52	%	NOx-Out	4.31	ppm
3/13/2023	15:42:58	O2	15.86	%	NOx Out	5.04	ppm
3/13/2023	15:43:08	O2	16.31	%	NOx-Out	4.83	ppm
3/13/2023	15:43:18	O2	15.85	%	NOx-Out	5.24	ppm
3/13/2023	15:43:28	O2	16.64	%	NOx-Out	4.63	ppm
3/13/2023	15:43:38	O2	16.67	%	NOx Out	4.56	ppm
3/13/2023	15:43:48	O2	15.80	%	NOx-Out	5.08	ppm
3/13/2023	15:43:58	O2	15.77	%	NOx-Out	4.68	ppm
3/13/2023	15:44:08	O2	16.55	%	NOx-Out	4.70	ppm
3/13/2023	15:44:18	O2	16.73	%	NOx Out	4.16	ppm
3/13/2023	15:44:28	O2	16.98	%	NOx Out	4.01	ppm
3/13/2023	15:44:38	O2	16.47	%	NOx-Out	4.18	ppm

3/13/2023	15:44:48	O2	16.28	%	NOx-Out	4.95	ppm
3/13/2023	15:44:58	O2	16.11	%	NOx-Out	5.11	ppm
3/13/2023	15:45:08	O2	16.74	%	NOx-Out	4.56	ppm
3/13/2023	15:45:18	O2	16.96	%	NOx-Out	4.34	ppm
3/13/2023	15:45:28	O2	16.81	%	NOx-Out	3.97	ppm
3/13/2023	15:45:38	O2	16.39	%	NOx-Out	4.20	ppm
3/13/2023	15:45:48	O2	16.88	%	NOx-Out	4.32	ppm
3/13/2023	15:45:58	O2	16.95	%	NOx-Out	4.18	ppm
3/13/2023	15:46:08	O2	16.43	%	NOx-Out	4.15	ppm
3/13/2023	15:46:18	O2	16.32	%	NOx-Out	4.42	ppm
3/13/2023	15:46:28	O2	16.53	%	NOx-Out	4.38	ppm
3/13/2023	15:46:38	O2	16.42	%	NOx-Out	4.65	ppm
3/13/2023	15:46:48	O2	16.45	%	NOx-Out	4.85	ppm
3/13/2023	15:46:58	O2	16.57	%	NOx-Out	4.47	ppm
3/13/2023	15:47:08	O2	16.48	%	NOx-Out	4.27	ppm
3/13/2023	15:47:18	O2	16.92	%	NOx-Out	4.03	ppm
3/13/2023	15:47:28	O2	16.85	%	NOx-Out	3.91	ppm
3/13/2023	15:47:38	O2	16.42	%	NOx-Out	4.35	ppm
3/13/2023	15:47:48	O2	15.92	%	NOx-Out	4.97	ppm
3/13/2023	15:47:58	O2	15.58	%	NOx-Out	5.00	ppm
	Average:		**16.57**			**4.33**	

National Grid
Newtown Creek Wastewater Treatment Plant
Brooklyn, New York
Oxidizer Outlet
Post Run Three
3/13/2023

3/13/2023	15:48:21	O2	17.00	%	NOx Out	4.91	ppm
3/13/2023	15:48:31	O2	5.19	%	NOx Out	3.69	ppm
3/13/2023	15:48:41	O2	0.26	%	NOx Out	0.27	ppm
3/13/2023	15:48:51	O2	0.13	%	NOx Out	0.19	ppm
3/13/2023	15:49:01	O2	0.08	%	NOx Out	0.15	ppm
3/13/2023	15:49:11	O2	0.04	%	NOx Out	0.12	ppm
3/13/2023	15:49:21	O2	0.01	%	NOx Out	0.18	ppm
3/13/2023	15:49:31	O2	0.00	%	NOx Out	0.17	ppm
3/13/2023	15:49:41	O2	0.00	%	NOx Out	0.14	ppm
3/13/2023	15:49:51	O2	11.97	%	NOx Out	0.14	ppm
3/13/2023	15:50:01	O2	12.54	%	NOx Out	0.11	ppm
3/13/2023	15:50:11	O2	12.67	%	NOx Out	0.11	ppm
3/13/2023	15:50:21	O2	12.71	%	NOx Out	0.04	ppm
3/13/2023	15:50:31	O2	12.77	%	NOx Out	0.05	ppm
3/13/2023	15:50:41	O2	12.77	%	NOx Out	0.01	ppm
3/13/2023	15:50:51	O2	12.76	%	NOx Out	0.01	ppm
3/13/2023	15:51:01	O2	1.07	%	NOx Out	1.79	ppm
3/13/2023	15:51:11	O2	0.14	%	NOx Out	4.97	ppm
3/13/2023	15:51:21	O2	0.06	%	NOx Out	5.00	ppm
3/13/2023	15:51:31	O2	0.07	%	NOx Out	5.05	ppm
3/13/2023	15:51:41	O2	0.01	%	NOx Out	5.06	ppm
3/13/2023	15:51:51	O2	-0.01	%	NOx Out	5.03	ppm
3/13/2023	15:52:01	O2	-0.02	%	NOx Out	5.07	ppm
3/13/2023	15:52:11	O2	5.00	%	NOx Out	5.07	ppm
3/13/2023	15:52:21	O2	16.09	%	NOx Out	4.55	ppm

Appendix B

Laboratory Data

Certificate of Analysis

SINCE 1985
Quality Controlled Through Analysis

10630 FALLSTONE RD. HOUSTON, TEXAS 77099
P.O. BOX 741905, HOUSTON, TEXAS 77274
TEL: (281) 495-2400
FAX: (281) 495-2410

CLIENT:	AirNova, Inc.	**REQUESTED BY:**	Mr. Joe Jackson
CLIENT PROJECT:	4872	**PURCHASE ORDER NO:**	AN-7238
LABORATORY NO:	99440-001	**REPORT DATE:**	March 20, 2023
SAMPLE:	Tail Biogas Run 1 2023-03-13 15:45		

Composition of Natural Gas by Gas Chromatography, ASTM D 1945.a

	Results, Mol %
Hydrogen	0.000
Oxygen	0.004
Nitrogen	0.017
Carbon Dioxide	90.757
Methane	9.222
Ethane	0.000
Propane	0.000
iso-Butane	0.000
n-Butane	0.000
iso-Pentane	0.000
n-Pentane	0.000
Hexane Plus	0.000
TOTAL	**100.000**

Calorific Value and Specific Gravity, Calculated at 14.696 psia and 60°F, ASTM D 3588.e

	Results
Specific Gravity at 60°F (air=1)	1.4303
NET (Dry basis), BTU/scf	83.9
Gross (Dry basis), BTU/scf	93.1
NET (Dry basis), BTU/lb	768.3
Gross (Dry basis), BTU/lb	853.2

Respectfully submitted
For Texas OilTech Laboratories, L.P.

Mr. Ikenna "Ike" Ezeji
Laboratory Director

Certificate of Analysis

SINCE 1985
Quality Controlled Through Analysis

10630 FALLSTONE RD HOUSTON, TEXAS 77099
P.O. BOX 741905, HOUSTON, TEXAS 77274
TEL: (281) 495-2400
FAX: (281) 495-2410

CLIENT:	AirNova, Inc.	**REQUESTED BY:**	Mr. Joe Jackson
CLIENT PROJECT:	4872	**PURCHASE ORDER NO:**	AN-7238
LABORATORY NO:	99440-002	**REPORT DATE:**	March 20, 2023
SAMPLE:	Tail Biogas Run 2 2023-03-13 15:48		

Parameter	***Results***
Total Sulfur in Petroleum Gas by Microcoulometry, ASTM D 3246, ppm	1.2

Respectfully submitted
For Texas OilTech Laboratories, L.P.

Mr. Ikenna "Ike" Ezeji
Laboratory Director

CHAIN OF CUSTODY

SINCE 1985

Quality Controlled Through Analysis

10630 FALLSTONE RD. HOUSTON, TEXAS 77099
P.O. BOX 741905, HOUSTON, TEXAS 77274
TEL: (281) 495-2400
FAX: (281) 495-2410
www.tol-lp.com

Date 2023/03/15

Page 1 of 1

Lab Number 99440

CONTACT NAME: Mr. Joe Jackson

COMPANY: AirNova, Inc.

ADDRESS: 3485 Haddonfield Rd.
Pennsauken, New Jersey (NJ) 08109
United States of America

E-MAIL: jackson@airnova.com

4872
PROJECT NAME

AN-7238
PURCHASE ORDER

PHONE: 856-486-1500

FAX: 856-486-9896

Sample No. Identification	Date MM DD YYYY	Time HH:MM	Lab Sample Number	SAMPLE TYPE (Matrix)	No. of Containers	TESTS: ASTM D 1945.a Composition of Natural Gas by Gas Chromatography	ASTM D 3588.e Calorific Value and Specific Gravity, Calculated at 1	ASTM D 3246 Total Sulfur in Petroleum Gas by Microcoulometry						REMARKS
Tail Biogas Run 1	03/13/2023	15:45	99440-001	Gas	1	✓	✓							
Tail Biogas Run 2	03/13/2023	15:48	99440-002	Gas	1			✓						

Relinquished by: (Print)	Relinquished by: (Signature)	Date	Time	
Received for Laboratory by: (Print) Gary Morrow	Received by: (Signature)	Date RECEIVED 2023/03/15	Time 15:33	
Method of Shipment:		**SAMPLE DISPOSITION:**		
Special Instructions:		1. Storage time requested: _____ days (Samples will be stored for 30 days without additional charges, thereafter storage charges will be billed at the published rates.)		
		2. Samples to be returned to client: ○ Y ● N		

3

4872 APP B

SINCE 1985
Quality Controlled Through Analysis

10630 FALLSTONE RD. HOUSTON, TEXAS 77099
P. O. BOX 741905, HOUSTON TEXAS 77274
TEL: (281) 495-2400
FAX: (281) 495-2410
www.tol-lp.com

CHAIN OF CUSTODY

Date 3/13/23 Page 1 of 1

Lab Number _____

CONTACT NAME: Joe Jackson
COMPANY: AirNova, Inc.
ADDRESS: 3485 Haddonfield Road
Pennsauken, NJ 08109

4872
PROJECT NAME
AN-7238
CONTRACT/PURCHASE ORDER/QUOTE #
PHONE: 856 486 1500
FAX:

TESTS: Composition of Nat. Gas ASTM D1945 | Calorific Value Spec Grav D 3588 | Total Sulfur in Natural Gas ASTM D3246

Sample No. Identification	Date MM / DD / YY	Time	Lab Sample Number	SAMPLE TYPE: LIQ.	GAS	SOLID	Number of Containers	Sample Condition REMARKS
Tail Biogas RUN 1	03/13/23	3:45 PM	~3psi		BIO		1	AIRNOVA SILONITE "B"
Tail Biogas RUN 2	03/13/23	3:48 PM	~3psi		BIO		1	"A"

LOW PRESSURE IN CYLINDERS

SAMPLERS:(Signature) AIRNOVA

Relinquished by:(Signature) Joe Jackson

Relinquished by:(Signature)

Received by:(Signature) Joe Jackson AIRNOVA — Date 3/14/23 — Time 0730

Received by:(Signature) FedEx Priority — Date 3/14/23 — Time 1000

Biogas (will be different than Nat. Gas)

Date	Time	Received for Laboratory by:	Date RECEIVED	Time

4872 APP B

Method of Shipment:

Special Instructions:

SAMPLE DISPOSITION:
1. Storage time requested: 0 days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Samples to be returned to client: (Y) N Cylinders

Appendix C

Emission Calculations

AirNova, Inc.

EPA Method 7E Calculations

(Cal. Error, Bias Drift and Bias Adjustment)

Client *National Grid @ Newton Wastewater Treatment Center*
Project No. *4872*
Test Location *Oxidizer Outlet*
Test Date *3/13/2023*

Parameter: **Oxygen**
Instrument Span (% O2): 22.00

	Analyzer Calib. Gases				Upscale
	zero	low	mid	high	Sys. Cal. Gas
Actual Calibration Gas Value (% O2):	0.00	N/A	12.90	22.00	12.90
Analyzer Calibration Response (% O2):	-0.02	N/A	12.90	21.94	12.89
Analyzer Calibration Error (% Span):	-0.09	0.00	0.00	-0.27	-------

		Zero System Calibration Gas						Upscale System Calibration Gas					
	Run	Apparent Stack Conc.	Init. Sys. Calib. Response	Init. Sys. Cal. Bias (% span)	Final Sys. Calib. Response	Final Sys. Cal. Bias (% span)	Calib. Drift (% span)	Init. Sys. Calib. Response	Init. Sys. Cal. Bias (% span)	Final Sys. Calib. Response	Final Sys. Cal. Bias (% span)	Calib. Drift (% span)	Actual Stack Conc.
1	1	16.60	0.01	0.14	0.03	0.23	0.09	12.89	0.00	12.80	-0.41	-0.41	**16.68**
	2	16.55	0.03	0.23	0.01	0.14	-0.09	12.80	-0.41	12.75	-0.64	-0.23	**16.72**
	3	16.57	0.01	0.14	0.00	0.09	-0.05	12.75	-0.64	12.77	-0.55	0.09	**16.75**

AirNova, Inc.

EPA Method 7E Calculations

(Cal. Error, Bias Drift and Bias Adjustment)

Client	National Grid @ Newton Wastewater Treatment Center
Project No.	4872
Test Location	Oxidizer Outlet
Test Date	3/13/2023

Parameter: **Nitrogen Oxides (as NO2)**

Instrument Span (ppmV NOx): 9.174

	Analyzer Calib. Gases				Upscale
	zero	*low*	*mid*	*high*	*Sys. Cal. Gas*
Actual Calibration Gas Value (ppmV NOx):	0.00	N/A	5.05	9.17	5.05
Analyzer Calibration Response (ppmV NOx):	-0.02	N/A	5.07	9.11	5.05
Analyzer Calibration Error (% Span):	-0.22	0.00	0.22	-0.70	--------

			Zero System Calibration Gas					Upscale System Calibration Gas					
	Run	*Apparent Stack Conc.*	*Init. Sys. Calib. Response*	*Init. Sys. Cal. Bias (% span)*	*Final Sys. Calib. Response*	*Final Sys. Cal. Bias (% span)*	*Calib. Drift (% span)*	*Init. Sys. Calib. Response*	*Init. Sys. Cal. Bias (% span)*	*Final Sys. Calib. Response*	*Final Sys. Cal. Bias (% span)*	*Calib. Drift (% span)*	*Actual Stack Conc.*
2	1	4.49	0.01	0.33	0.05	0.76	0.44	5.05	0.00	5.10	0.55	0.55	4.46
	2	4.41	0.05	0.76	0.08	1.09	0.33	5.10	0.55	5.06	0.11	-0.44	4.38
	3	4.33	0.08	1.09	0.01	0.33	-0.76	5.06	0.11	5.07	0.22	0.11	4.31

Project 4872 - National Grid @ Newtown WWTP AirNova, Inc

Oxidizer
Tailgas
03/13/23
Run No.'s 1, 2 and 3

% Composition of Gas for H,C,N,O,&S

based on gas composition analysis.

Gas Components Compound list	MW (lb/lb-mol)	percent of each sample component	Comp mass correction	mass H in Comp	mass correction H	mass C in Comp	mass correction C	mass O in Comp	mass correction O	mass N in Comp	mass correction N	mass S in Comp	mass correction S
Methane	16.038	9.222	1.479	4.028	0.371	12.010	1.108	0.000	0.000	0.000	0.000	0.000	0.000
Ethane	30.062	0.000	0.000	6.042	0.000	24.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Propane	44.086	0.000	0.000	8.056	0.000	36.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Iso-Butane	58.110	0.000	0.000	10.070	0.000	48.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Normal-Butane	58.110	0.000	0.000	10.070	0.000	48.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pentanes	72.134	0.000	0.000	12.084	0.000	60.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hexanes	86.158	0.000	0.000	14.098	0.000	72.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Carbon Dioxide	44.009	90.757	39.941	0.000	0.000	12.010	10.900	31.999	29.041	0.000	0.000	0.000	0.000
Nitrogen	28.013	0.017	0.005	0.000	0.000	0.000	0.000	0.000	0.000	28.013	0.005	0.000	0.000
Oxygen	31.999	0.004	0.001	0.000	0.000	0.000	0.000	31.999	0.001	0.000	0.000	0.000	0.000
Hydrogen	2.014	0.000	0.000	2.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hydrogen sulfide	34.080	0.000	0.000	2.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.066	0.000
Carbon monoxide	28.009	0.000	0.000	0.000	0.000	12.010	0.000	15.999	0.000	0.000	0.000	0.000	0.000
column total	532.822	100.000	41.426	68.476	0.371	324.270	12.007	79.997	29.042	28.013	0.005	32.066	0.000

Gas Composition (% elemental by wt.) % H= 0.90 % C= 28.99 % O= 70.11 % N= 0.01 % S= 0.00

* Enter 0% for untargeted compounds

F FACTOR CALCULATION

% H =	0.90	Hydrogen Content (%)
% C =	28.99	Carbon Content (%)
% N =	0.01	Nitrogen Content (%)
% O =	70.11	Oxygen Content (%)
% S =	0.00	Sulfur Content (%)
GCV=	853.2	Gross Calorific Value (Btu/lb)

Fd = 10^6 * [(3.64*%H) + (1.53*%C) + (0.57*%S) + (0.14*%N) - (0.46*%O2)] / GCV

Fd = 18008 scf/MMBtu

National Grid @ Newtown WWTPO

Fuel Factor Calculation for Combined Fuels

	TailGas Flow Rate (SCFM)	TailGas Flow Rate (SCFH)	Natural Gas Flow Rate (CCFH)	Tail Gas Usage (%)	Natural Gas Usage (%)	TailGas Fuel Factor (DSCF/MMBtu)	TailGas Fuel Factor (DSCF/MMBtu)	Combined Fuel Factor* (DSCF/MMBtu)
Run No. 1	337.7	20262	3100	86.73	13.27	18008	8710	16774
Run No. 2	336.6	20196	3100	86.69	13.31	18008	8710	16771
Run No. 3	336.1	20166	3100	86.68	13.32	18008	8710	16769

* In accordance with EPA Reference Method 19, Equation 19-16.

AirNova, Inc.

EPA Methods 3A and 7E)
(O2 and NOx)

Client	National Grid
Project No.	4872
Test Location	Newtown Wastewater Treatment Plant
Emission Source	Thermal Oxidizer
Fuel	TailGas/Natural Gas
Test Date	03/13/2023
Test Run	One
Time Period	1230-1330

Emission Data

INPUT	Tstd=	527.7 R	Standard temperature
INPUT	Fd =	16774 scf/MMBtu	From EPA Reference Method 19

Instrumental Data

INPUT	[O2]	16.68 %-dry	Oxygen concentration
INPUT	[NOx]	4.5 ppmV-dry	Nitrogen Oxides concentration

Calculations

1) Nitrogen Oxides concentrations and emissions

Corr. C[NOx] = ((20.9-O2% corr. value)/(20.9-actual avg. O2% value))*Avg. raw NOx value
E[NOx lb/MMBtu] = ppmVd * Cd * Fd * (20.9/(20.9-actual O2%))

C[NOx] =	4.5	ppmVd		
C[NOx] =	6.3	ppmVd corrected to	15	% O2
Conv Factor.	1.19E-07	convert ppmV to lb/scf NOx		
E[NOx] =	0.045	lb/MMBtu		

AirNova, Inc.

EPA Methods 3A and 7E
(O2 and NOx)

Client	National Grid
Project No.	4872
Test Location	Newtown Wastewater Treatment Plant
Emission Source	Thermal Oxidizer
Fuel	TailGas/Natural Gas
Test Date	03/13/2023
Test Run	Two
Time Period	1335-1435

Emission Data

INPUT	Tstd=	527.7	R	Standard temperature
INPUT	Fd =	16771	scf/MMBtu	From EPA Reference Method 19

Instrumental Data

INPUT	[O2]	16.72	%-dry	Oxygen concentration
INPUT	[NOx]	4.4	ppmV-dry	Nitrogen Oxides concentration

Calculations

1) Nitrogen Oxides concentrations and emissions

Corr. C[NOx] = ((20.9-O2% corr. value)/(20.9-actual avg. O2% value))*Avg. raw NOx value
E[NOx lb/MMBtu] = ppmVd * Cd * Fd * (20.9/(20.9-actual O2%))

C[NOx] =	4.4	ppmVd		
C[NOx] =	6.2	ppmVd corrected to	15	% O2
Conv Factor	1.19E-07	convert ppmV to lb/scf NOx		
E[NOx] =	0.044	lb/MMBtu		

AirNova, Inc.

EPA Methods 3A and 7E
(O2 and NOx)

Client	National Grid
Project No.	4872
Test Location	Newtown Wastewater Treatment Plant
Emission Source	Thermal Oxidizer
Fuel	TailGas/Natural Gas
Test Date	03/13/2023
Test Run	Three
Time Period	1448-1548

Emission Data

INPUT	Tstd=	527.7	R	Standard temperature
INPUT	Fd =	16769	scf/MMBtu	From EPA Reference Method 19

Instrumental Data

INPUT	[O2]	16.75	%-dry	Oxygen concentration
INPUT	[NOx]	4.3	ppmV-dry	Nitrogen Oxides concentration

Calculations

1) Nitrogen Oxides concentrations and emissions

Corr. C[NOx] = ((20.9-O2% corr. value)/(20.9-actual avg. O2% value))*Avg. raw NOx value
E[NOx lb/MMBtu] = ppmVd * Cd * Fd * (20.9/(20.9-actual O2%))

C[NOx] =	4.3	ppmVd		
C[NOx] =	6.1	ppmVd corrected to	15	% O2
Conv Factor.	1.19E-07	convert ppmV to lb/scf NOx		
E[NOx] =	0.043	lb/MMBtu		

Appendix D

Calibration Data

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DocNumber: 502223

Linde Gas & Equipment Inc.
One Steel Road East
Morrisville PA 19067
Tel: 1-800-638-6360
Fax: 1-215-736-5237
PGVP ID: F32022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

AIRNOVA INC
3485 HADDONFIELD RD
PENNSAUKEN NJ 08109-3805

Certificate Issuance Date 09/01/2022
Linde Order Number 78936239
Part Number NI CD7 5O12E-AS
Customer PO Number AN-7159

Fill Date 08/25/2022
Lot Number 301608237202
Cylinder Style & Outlet AS CGA 590
Cylinder Pressure and Volume 2000 psig 140 ft3

Certified Concentration

Expiration Date	08/31/2030	NIST Traceable
Cylinder Number	CC103765	Expanded Uncertainty
7.70 %	Carbon dioxide	± 0.02 %
12.9 %	Oxygen	± 0.1 %
Balance	Nitrogen	

ProSpec EZ Cert

Certification Information: Certification Date 08/31/2022 Term 96 Months Expiration Date 08/31/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol Document #EPA-600/R-12/531 using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data: (R=Reference Standard Z=Zero Gas C=Gas Candidate)

1. Component: Carbon dioxide

Requested Concentration 7.5 %
Certified Concentration 7.70 %
Instrument Used HORIBA VIA-510
Analytical Method NDIR
Last Multipoint Calibration 08/15/2022

Reference Standard Type / Cylinder # GMIS / CC305989
Concentration / Uncertainty 10.03 % ±0.01 %
Expiration Date 10/17/2025
Traceable to SRM # / Sample # / Cylinder # 2745 / 9-D-11 / FF13591
SRM Concentration / Uncertainty 16.08% / ±0.02 %
SRM Expiration Date 04/08/2021

First Analysis Data:						Date	08/31/2022
Z:	0	R:	10	C:	7.69	Conc:	7.71
R:	10.01	Z:	0	C:	7.68	Conc:	7.7
Z:	0	C:	7.69	R:	10.01	Conc:	7.7
UOM	%			Mean Test Assay:		7.7	%

Second Analysis Data						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM	%			Mean Test Assay			%

2. Component: Oxygen

Requested Concentration 12.5 %
Certified Concentration 12.9 %
Instrument Used SIEMENS OXYMAT 6F
Analytical Method Paramagnetic
Last Multipoint Calibration 08/15/2022

Reference Standard Type / Cylinder # GMIS / CC63322
Concentration / Uncertainty 12.00 % ±0.01 %
Expiration Date 06/06/2027
Traceable to SRM # / Sample # / Cylinder # 2659A / 71-E-24 / FF16300
SRM Concentration / Uncertainty 20.86% / ±0.021%
SRM Expiration Date 08/23/2021

First Analysis Data:						Date	08/31/2022
Z:	0	R:	12	C:	12.9	Conc:	12.9
R:	12	Z:	0	C:	12.9	Conc:	12.9
Z:	0	C:	12.9	R:	12	Conc:	12.9
UOM	%			Mean Test Assay:		12.9	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM	%			Mean Test Assay:			%

Analyzed By Remy Jomat

Certified By Megha Patel

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA, LLC
6141 Easton Road
Bldg 1
Plumsteadville, PA 18949
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E03NI65E15A1094	Reference Number:	160-401399891-1
Cylinder Number:	CC720555	Cylinder Volume:	154.0 CF
Laboratory:	124 - Plumsteadville - PA	Cylinder Pressure:	2015 PSIG
PGVP Number:	A12019	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Jan 21, 2019

Expiration Date: Jan 21, 2027

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	12.50 %	12.48 %	G1	+/- 0.6% NIST Traceable	01/21/2019
OXYGEN	22.00 %	22.00 %	G1	+/- 0.2% NIST Traceable	01/21/2019
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	06011807	K008272	23.04 % CARBON DIOXIDE/NITROGEN	0.5%	Jun 27, 2022
NTRM	16060507	CC401541	23.204 % OXYGEN/NITROGEN	0.2%	Dec 24, 2021

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
HORIBA VA5011 T5V8VU9P NDIR CO2	NDIR	Jan 09, 2019
SIEMENS OXYMAT 61 S01062 O2	PARAMAGNETIC	Jan 15, 2019

Triad Data Available Upon Request

Approved for Release

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DocNumber: 502408

Linde Gas & Equipment Inc.
One Steel Road East
Morrisville PA 19067
Tel: 1-800-638-6360
Fax: 1-215-736-5237
PGVP ID: F32022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

AIRNOVA INC
3485 HADDONFIELD RD
PENNSAUKEN NJ 08109-3605

Certificate Issuance Date: 09/06/2022
Linde Order Number: 70936739
Part Number: NI NOSME-AS
Customer PO Number: AN-7159

Fill Date: 08/25/2022
Cal Number: 304613217.01
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft³

Certified Concentration

ProSpec EZ Cert

Expiration Date:	09/06/2025	NIST Traceable
Cylinder Number:	CC350183	Expanded Uncertainty
5.05 ppm	Nitric oxide	± 0.03 ppm
Balance	Nitrogen	

For Reference Only: NOx 5.05 ppm

Certification Information: Certification Date: 09/06/2022 Term: 36 Months Expiration Date: 09/06/2025

This cylinder was certified according to the 2012 EPA Traceability Protocol Document #EPA-600/R-12/531 using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG

Analytical Data: (R=Reference Standard Z=Zero Gas C=Gas Candidate)

1. Component: Nitric oxide

Requested Concentration: 5 ppm
Certified Concentration: 5.05 ppm
Instrument Used: TECO MODEL 42I
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 08/19/2022

Reference Standard Type / Cylinder #: GMIS / CC352885
Concentration / Uncertainty: 9.90 ppm ±0.05 ppm
Expiration Date: 05/20/2025
Traceable to: SRM # / Sample # / Cylinder #: PRM# C2103901 / APEX1324280 /
SRM Concentration / Uncertainty: 20.01 PPM ±0.10
SRM Expiration Date: 05/20/2024

First Analysis Data:					Date: 08/30/2022
Z: 0	R: 9.89	C: 5.04	Conc: 5.05		
R: 9.89	Z: 0	C: 5.05	Conc: 5.00		
Z: 0	C: 5.05	R: 9.88	Conc: 5.06		
UOM: ppm		Mean Test Assay:	5.00	ppm	

Second Analysis Data:					Date: 09/06/2022
Z: 0	R: 9.89	C: 5.03	Conc: 5.04		
R: 9.89	Z: 0	C: 5.03	Conc: 5.04		
Z: 0	C: 5.04	R: 9.89	Conc: 5.05		
UOM: ppm		Mean Test Assay:	5.04	ppm	

Analyzed By: Ramzy Jaimoukha

Certified By: Megha Patel

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA, LLC
630 United Drive
Durham, NC 27713
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E02NI99E15A3470	Reference Number:	122-402045324-1
Cylinder Number:	CC410868	Cylinder Volume:	144.3 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22021	Valve Outlet:	660
Gas Code:	NO,NOX,BALN	Certification Date:	Mar 08, 2021

Expiration Date: Mar 08, 2024

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
NOX	9.500 PPM	9.174 PPM	G1	+/- 1.3% NIST Traceable	03/01/2021, 03/08/2021
NITRIC OXIDE	9.500 PPM	9.150 PPM	G1	+/- 1.2% NIST Traceable	03/01/2021, 03/08/2021
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12010524	ND44753	20.00 PPM NITRIC OXIDE/NITROGEN	+/-1.1%	Feb 13, 2024
NTRM	12010524	ND44753 NOX	20.01 PPM NOx/NITROGEN	+/-1.1%	Feb 13, 2024

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
THERMO NO 42I-1202839462	Chemiluminescence	Feb 10, 2021
THERMO NOX 42I-1202839462	Chemiluminescence	Feb 10, 2021

Triad Data Available Upon Request

Approved for Release

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DocNumber: 533300

Linde Gas & Equipment Inc.
One Steel Road East
Morrisville PA 19067
Tel: 1-800-638-6360
Fax: 1-215-736-5237
PGVP ID: F32023

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

AIRNOVA INC
3485 HADDONFIELD RD
PENNSAUKEN NJ 08109-3805

Certificate Issued Date: 02/01/2023
Linde Order Number: 8435973
Part Number: NI NO45ME-AS
Customer PO Number: AE-7208

Fill Date: 01/18/2021
Lot Number: X461301B3B7
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2400 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	02/01/2026	NIST Traceable
Cylinder Number:	CC423870	Expanded Uncertainty
45.2 ppm	Nitric oxide	± 0.3 ppm
Balance	Nitrogen	

For Reference Only: NOx 45.2 ppm

Certification Information: Certification Date: 02/01/2023 Term: 36 Months Expiration Date: 02/01/2026

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty shown is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG

Analytical Data: (Reference Standard: Z=Zero Gas C=Gas Candidate)

1. Component: Nitric oxide

Requested Concentration: 45 ppm
Certified Concentration: 45.2 ppm
Instrument Used: MKS Multigas 2031
Analytical Method: FTIR
Last Multipoint Calibration: 01/30/2023

Reference Standard: Type / Cylinder #: GMIS / CC207321
Concentration / Uncertainty: 50.5 ppm ±0.5 ppm
Expiration Date: 04/14 2025
Traceable to: SRM # / Sample # / Cylinder #: 1683b / 45-V-58 / CAL018029
SRM Concentration / Uncertainty: 48.79 PPM / ±0.31 ppm
SRM Expiration Date: 03-25-2019

First Analysis Data:						Date: 01/25/2023
Z:	0.05	R:	69.2	C:	44.8	Conc: 45
R:	69.2	Z:	0.11	C:	45	Conc: 45.2
Z:	-0.11	C:	45	R:	69.2	Conc: 45.2
UOM: ppm						Mean Test Assay: 45.1 ppm

Second Analysis Data:						Date: 02/01/2023
Z:	0.01	R:	68.9	C:	44.9	Conc: 45.3
R:	68.8	Z:	0.08	C:	45	Conc: 45.4
Z:	-0.09	C:	44.7	R:	69	Conc: 45.1
UOM: ppm						Mean Test Assay: 45.3 ppm

Analyzed By: Megha Patel

Certified By: Ramzy Jamal

Appendix E

Process Operating Data

Ta: 1 gas

Stack temps

	Time	SCFM Flow	Temp - 190 probe	Temp - 191 probe	
R1	12:30	322.85	1441	1430	
	12:45	355.3	1460	1447	
	13:00	321.83	1433	1422	
	13:15	362.87	1463	1450	
	13:30	325.65	1439	1428	
R2	13:35	329.01	1455	1444	
	13:50	344.33	1450	1439	
	14:05	323.91	1440	1429	
	14:20	361.29	1452	1439	
	14:35	322.77	1445	1435	
R3	14:48	335.26	1459	1446	Natural gas start 28611CCF
	15:03	337.21	1452	1437	
	15:18	337.02	1458	1445	
	15:33	343.1	1450	1440	
	15:48	327.79	1448	1437	end 28642CCF

Fresh Air Blower - max 3800CFM

Damper 35% open

VFD 75%

Exhibit I

Date of Request: February 9, 2024 Request No. WE ACT-0155
Due Date: February 20, 2024 NG Request No. NG-1472

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project & Proposed RNG Interconnection Projects

Request:

Please state when the Company received the initial approval for cost recovery for the conditioning system/purification system and RNG interconnection at Newtown Creek.

a. Please state the date when the purification system was first operational.

b. How many days in total, has the Company's conditioning system/purification system been fully operational?

c. How many days in total has the Company's conditioning system/purification system been fully operational and remained online (i.e. flaring did not occur as a result of the system being offline).

Response:

The Company received approval for the Newtown Creek project in its 2016 rate case (Case 16-G-0059).

a. The system was commissioned on March 31, 2023.

b. The system has been operating for an estimated 123 days in total for 2023.

c. See above response. National Grid does not have visibility to the wastewater treatment plant’s flare operation.

Name of Respondent: Date of Reply:
Dennis Leyble February 20, 2024

Exhibit J

Date of Request: November 15, 2023 Request No. WE ACT-0139
Due Date: November 27, 2023 NG Request No. NG-1442

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: RNG interconnections

Request:

According to a story published in Gothamist on November 11, 2023, National Grid spokesperson Karen Young stated that the Newtown Creek Wastewater Treatment Plant renewable natural gas facility is currently flaring methane because the project is offline while undergoing maintenance work.

a. What type of maintenance is the project undergoing?

b. Was the maintenance work planned?

c. Was any notice provided to the local community regarding the maintenance work?

d. Are the costs of this maintenance work included in the anticipated project costs in KEDNY's rate plan?

e. Do the Companies anticipate that similar maintenance work will be required at any of the proposed RNG interconnection sites? Why or why not?

    i. If so, will any of the projects go offline while maintenance work is occurring?

    ii. If so, how will the Companies notify the surrounding communities of planned maintenance?

    iii. If so, will flaring occur when the projects are offline?

    iv. How often and for how long will the projects require maintenance work?

Response:

a. The Company is performing work to address an issue with the facility's feed-gas compressor skid.

b. No, the work was not planned.

c. No. Due to the unplanned nature of the work, the Company did not provide prior notice to the community. Upon identifying the issue, the Company notified the New York City Department of Environmental Protection regarding the required repairs and anticipated outage timeline. In addition, the Company informed elected officials of the outage, including updates on the timeline to complete the work.

d. The revenue requirements include forecast O&M related to the Newtown Creek Project. The specific work referenced, however, is not expressly included. See the response to WE ACT-0142.

e. No. National Grid is only proposing to interconnect the RNG projects identified in the rate case – the Companies are not developing the underlying RNG projects. The maintenance work being performed at Newtown Creek is on components that are distinct from the interconnection equipment; therefore, the Companies do not anticipate performing similar work at the RNG interconnection sites.

i.-iv. Not Applicable.

Name of Respondent:
Pradheep Kileti

Date of Reply:
November 27, 2023

Exhibit K

Date of Request: January 30, 2024 Request No. WE ACT-0146
Due Date: February 9, 2024 NG Request No. NG-1464

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Response to KCT-01(2)(a). In response to Ms. Thompson's request for a record of dates on which the purification system was shut down, the Company responded "[t]he RNG project was offline periodically beginning in mid-August to diagnose and address an unexpected process condition."

a. Please provide the dates on which the purification system was offline in 2023.

b. If the dates are not available, please explain why.

Response:

a. The Newtown Creek Renewable Natural Gas ("RNG") project was offline from August 12th through November 27th. The purification system was offline as follows:

- In April 2023, the purification system was intermittently offline from 4/12 to 4/14, from 4/17 to 4/24, on 4/27, and on 4/30.
- In May 2023, the purification system was intermittently offline from 5/2 to 5/4, on 5/8, and from 5/14 to 5/24.
- In June 2023, the purification system was intermittently offline on 6/1, from 6/4 to 6/6, between 6/8 to 6/19, and from 6/26 to 6/30.
- In July 2023, the purification system was intermittently offline on 7/6, from 07/09 to 07/10, on 7/15, from 7/17 and 7/19, and from 7/24 to 7/27.
- In August 2023, the purification system was intermittently offline on 8/3 and 8/10. The purification system was offline from 8/12 through 11/27.

- In November 2023, the purification system was intermittently offline from 11/27 to 11/30.

- In December 2023, the purification system was intermittently offline from 12/1 to 12/15, on 12/18, and on 12/25.

Name of Respondent:
Dennis Leyble

Date of Reply:
February 9, 2024

Exhibit L

Date of Request: March 28, 2024 Request No. WE ACT- 0160
Due Date: April 8, 2024 NG Request No. NG-1477

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Response to WE ACT-146, in which the Companies provided a list of the days on which the Newtown Creek purification system was offline between April 12 and November 27, 2023.

a. Please provide a list of the days on which the Newtown Creek purification system was offline (for part of the day or the whole day) between November 27, 2023 and April 1, 2024.

Response:

The purification system was offline as follows:

- After November 27, 2023, the purification system was intermittently offline on 11/28 to 11/30.
- In December 2023, the purification system was intermittently offline from 12/1 to 12/11, 12/13 to 12/15, 12/18. The purification system was completely offline on 12/25 to the end of the month.
- In January 2024, the purification system was intermittently offline on 1/6, 1/24 and 1/25. The purification system was completely offline from 1/1 through 1/5, and from 1/17 to 1/22.
- In February 2024, the purification system was intermittently offline on 2/20.

- In March 2024, the purification system was intermittently offline on 3/3, 3/7 to 3/8, 3/16, 3/19, 3/21, 3/23, 3/27, 3/28. The purification system was completely offline from 3/10 to 3/15.

Name of Respondent:	Date of Reply:
Dennis Leyble	April 8, 2024

Exhibit M

Date of Request: April 9, 2024 Request No. WE ACT- 0161
Due Date: April 19, 2024 NG Request No. NG-1478

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Noemi Fana

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Response to WE ACT-158, in which the Companies stated that as of January 2024, the Newtown Creek RNG project had injected approximately 75,000 dekatherms of RNG into the National Grid system.

a. How many dekatherms of RNG has the project injected into the National Grid system as of April 1, 2024?

Response:

From the period between April 1, 2023 to March 31, 2024 the Newtown Creek RNG system has injected approximately 116,000 dth into the distribution system.

Name of Respondent: Date of Reply:
Dennis Leyble April 17, 2024

Exhibit N

Date of Request: February 23, 2024 Request No. WE ACT- 0158
Due Date: March 4, 2024 NG Request No. NG-1475

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Noemi Fana

TO: National Grid

SUBJECT: Newtown Creek Project & Proposed RNG Interconnection Projects

Request:

Please refer to the attached link, National Grid's Newtown Creek Renewable Gas Project, https://www.nationalgridus.com/News/2023/06/easset_upload_file62978_262676_e.pdf, where the Company states the Newtown Creek Project has "the potential to produce enough renewable energy to heat over 5,200 New York City homes."

a. How many homes are currently supplied with RNG produced at the Newtown Creek RNG project?

b. How many homes does the Company currently anticipate would be supplied with RNG if the project were continuously operating?

Response:

a. As of January 2024, the Newtown Creek RNG project had injected approximately 75,000 dekatherms, the equivalent annual gas usage of approximately 625 residential homes in New York City.

b. Newtown Creek could produce the equivalent annual gas usage of approximately 5,200 homes.

Name of Respondent: Date of Reply:
Pradheep Kileti March 4, 2024

Exhibit O

Date of Request: November 16, 2023 Request No. WE ACT- 0143
Due Date: November 27, 2023 NG Request No. NG-1446

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Noemi Fana

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Page 82 of the KEDNY GIOP panel's direct testimony, in which the panel states that "[t]he Company has contracted with a firm to market and monetize environmental credits generated from the [Newtown Creek] project."

a. Does KEDNY claim any emissions benefits from using RNG produced at the Newtown Creek project?

b. Has KEDNY sold any environmental credits associated with Newtown Creek thus far?

   i. If so, how many?

   ii. If so, how much revenue has been generated from the environmental credits?

Response:

a. No. Under the New York State Department of Environmental Conservation's methodology for calculating greenhouse gas ("GHG") emissions, local production and injection of renewable natural gas ("RNG") into the gas system would result in GHG emissions reductions associated with avoided upstream emissions; however, KEDNY did not include the avoided upstream GHG emissions reductions associated with the production of RNG at the Newtown Creek Wastewater Treatment Plant (the "Newtown Creek RNG Project") in its rate case testimony or exhibits. Direct emissions reduction benefits associated with RNG produced from the Newtown Creek RNG Project are tied to the environmental attributes being sold, and are therefore transferred with the sale of the attributes.

b. Yes. KEDNY contracted with a third party to monetize, market, and sell environmental attribute credits associated with the Newtown Creek RNG Project.

i. As of September 30, 2023, the Company sold 74,951 credits based on environmental attributes from the Newtown Creek RNG Project.

ii. As of September 30, 2023, the sale of credits from the Newtown Creek RNG Project has generated approximately $966,867.90 in total revenue from the environmental attributes, a portion of which is used to pay the third party the Company engaged to monetize the attributes, with the remainder applied to offset the cost of service for the benefit of customers.

Name of Respondent:
Pradheep Kileti
Samara Jaffe

Date of Reply:
November 27, 2023

Exhibit P

Date of Request: February 9, 2024 Request No. WE ACT- 0152
Due Date: February 20, 2024 NG Request No. NG-1469

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project & Proposed RNG Interconnection Projects

Request:

Please state whether the Company is tracking or recording emissions from each and every stage of the process of the purification system. If the Company does track and record these emissions:

a. Please state what pollutants are emitted from the purification system when operational. Please explain which pollutants are emitted during each stage of the process.

b. Please state the quantity of each pollutant that is emitted per day or per month when the system is operational. Please provide quantities for each stage of the process.

c. If the Company does not track or record those emissions, please explain why not.

d. Does the Company hold a Title V permit to operate the purification system?

    i. If so, please provide the permit.

e. Does the Company hold an air state facility permit to operate the purification system?

    i. If so, please provide the permit.

f. Does the Company hold any air emissions permit to operate the purification system?

    i. If so, please provide the permit.

Response:

a. The Company's purification system is regulated under the Newtown Creek Waste Water Treatment Plant DEP's Title V Air Permit (ID# 2-6101-00025/00057). The pollutant regulated is NOx.

b. The Company is in the process of compiling emissions data in accordance with its

agreement with the NYC Department of Environmental Protection ("DEP"). The report is scheduled to be submitted to the City in April 2024. The NYC DEP will use this information for reporting and compliance with its Title V Air Permit requirements. Under the Title V Air Permit, the source that includes both the NYC DEP's flares and the TOX is limited to 38,800 pounds NOx, annually.

c. See the response to part b above.

d. No, the Title V permit is held by the NYC DEP.

e. No, the Company does not hold an air state facility permit.

f. No, the Company does not hold air emissions permit.

Name of Respondent:
Elizabeth DiMeo

Date of Reply:
February 20, 2024

Exhibit Q

Responsiveness Summary
Seneca Energy II
September 2023

Commenter 1: EarthJustice, Seneca Lake Guardian, Sierra Club, and Committee to Preserve the Finger Lakes.

Commenter 2: Seneca Lake Guardian

Commentor 3: Coalition for Renewable Natural Gas

Comment 1: The project is inconsistent with the Climate Leadership and Community Protection Act (CLCPA) greenhouse gas (GHG) limits because it increases demand for, and combustion of, fossil natural gas. *Commenter 1*

Comment 2: The project is inconsistent with the CLCPA GHG limits because it conflicts with the scoping plan. *Commenter 1*

DEC Response to Comments 1 and 2: The commenter is correct that Section D of the Department's *DAR-21: The Climate Leadership and Community Protection Act and Air Permit Applications* (DAR-21) guidance document identifies these factors as potential causes of interference and inconsistency with the attainment of the statewide GHG limits. If it is found that a project is inconsistent with or will interfere with the attainment of the statewide GHG limits, Section 7(2) of the CLCPA requires that the Department provide a detailed statement of justification and a description of any alternatives and mitigation measures that will be required for the project.

As discussed in the CLCPA analysis prepared by the applicant, this project includes the retirement of 10 existing Caterpillar 3516 engines currently being operated at the facility and the installation of oxidation catalysts on the remaining engines. The elimination of these engines will result in a significant decrease in both potential and projected actual direct GHG emissions from this facility. Further, this project will increase the amount of landfill gas from the nearby Seneca Meadows landfill that will be converted into renewable natural gas (RNG) at this facility rather than being flared at the landfill itself. It is important to note that while operation and ownership of the landfill is not under the control of the applicant, the landfill will continue to generate landfill gas that must be managed for years into the future regardless of this project and regardless of whether the landfill is allowed to expand. Accordingly, the management of landfill gas by this facility is a potential point of justification for the project. The creation of RNG represents a more beneficial use for landfill gas than simply flaring the emissions, which is supported by the scoping plan. Finally, the applicant has committed to removing the remaining 8 engines from electrical generation service by 2040 to remain consistent with the requirements of CLCPA.

For the reasons discussed above, the Department believes that there is sufficient justification for this project despite any potential inconsistency.

Comment 3: The applicant's emissions analysis fails to provide projections for 2030, 2040, and 2050 as required. *Commenter 1*

DEC Response to Comment 3: The CLCPA analysis for this project provided the facility's potential to emit (PTE) which is the maximum emissions based on the facility's operational design. Due to the nature of landfills, the peak year of gas generation occurs the year following the landfill's closure. Therefore, the years prior to the closure of the landfill will have less gas generated, which will necessarily affect the ability of this facility to operate at its design maximum. Relating to the effect that the landfill has on the operation of this facility, a PTE calculated based on the maximum amount of gas expected from the landfill represents a conservative approach to calculating annual actual emissions. Accordingly, by including only the PTE for this facility instead of qualifying that with projected actual emissions the GHG impact is likely overstated.

Further, the applicant has proposed to no longer use the natural gas engines to generate electricity by 2040 to be consistent with the requirements of the CLCPA. This commitment suggests that there will not be emissions from the engines in 2040 and 2050 as they will no longer be operated. This commitment is formalized in Condition 72 of the draft permit.

Comment 4: The applicant's emissions accounting fails to disclose that at least some RNG will be exported out of state. *Commenter 1*

DEC Response to Comment 4: As discussed in Section C of DAR-21, applicants are required to provide calculations of "any reasonably foreseeable downstream and indirect emissions attributable to the project that **occur within New York State**" (emphasis added). Accordingly, the applicant is not required to disclose this information as part of the CLCPA analysis for the project.

Comment 5: The applicant's emissions analysis fails to assess the risk of leakage. *Commenter 1*

DEC Response to Comment 5: As discussed in the response to Comment 4 above, downstream emissions occurring outside New York State are outside the scope of the CLCPA analysis. Further, the Department does not have any regulatory authority over the facility's potential customers or how they intend to use the facility's product (i.e., renewable natural gas).

Comment 6: The applicant's downstream emissions accounting improperly omits combustion emissions. *Commenter 1*

Response to Comment 6: The Department recognizes that downstream combustion emissions may be considered as part of a CLCPA analysis for various types of projects,

including those that may provide infrastructure to facilitate or increase end-use combustion of various types of fuels. The Department calculated that approximately 217,982 tons of CO2e may result from the downstream combustion of the RNG generated by this project based on the information provided in the applicant's CLCPA analysis. As discussed by Comment 4 above, approximately 15,951 tons of CO2e could result from the downstream combustion of the RNG generated by this project outside of the State. Accordingly, the downstream combustion emissions potentially occurring within the State are approximately 202,031 tons of CO2e. However, these emissions would also be appropriately considered as direct emissions from the end-users of the RNG generated by this project. Further, as discussed in the response to Comment 5 above, downstream emissions that occur outside New York State are not part of a CLCPA analysis. To the extent any end-users are subject to DEC permitting and/or Section 7 review these emissions will be analyzed at that time. It is also important to note that the RNG generated by this project will displace fossil natural gas currently being transmitted by the pipeline it will be injected into. This gas serves existing end-users who are not under the applicant's control. Accordingly, it is reasonable to assume that the potential downstream combustion emissions would occur regardless of whether the project is approved as this project does not propose to increase the capacity of the pipeline or otherwise increase the number of end-users of the gas contained therein. For these reasons, it is appropriate to exclude the potential downstream combustion emissions from the total increased greenhouse gas emissions in this analysis.

Comment 7: The applicant improperly claims avoided flaring emissions. *Commenter 1*

DEC Response to Comment 7: The commenter is correct to point out that emissions avoided by another entity are not considered as part of the consistency determination required by CLCPA Section 7(2) for this project. However, as discussed in the response to Comments 1 and 2 above, avoided emissions may provide justification for a project. Accordingly, the Department disagrees that the information showing avoided flaring emissions potentially resulting from the project was improperly included.

The Department also disagrees with the commenter's assessment that "the Applicant's GHG analysis assumes that if the project is not approved, all of the landfill gas that the Applicant proposes to convert to RNG would instead be flared at the Seneca Meadows Landfill, producing 87,592 tons per year of CO2e" and that "[t]here is no basis to assume that, in the absence of this project, the landfill gas at issue would otherwise be flared." As indicated above, while the conditions at the landfill are not relevant to this application, it is important to note that landfills are required to collect and control the landfill gas they generate. Accordingly, it is reasonable to assume that the collected gas would be flared either at the landfill itself or at this facility if the engines are not operated. Further, under current conditions, the applicant does not have sufficient capacity to accept all the gas generated by the landfill. Accordingly, excess gas is currently being flared at the landfill. If this project is approved, the applicant will be able to accept more gas from the landfill thus reducing the amount of excess gas flared at the landfill.

Comment 8: The analysis of potential burdens on disadvantaged communities (DACs) is flawed and incomplete. *Commenter 1*

DEC Response to Comment 8: The Department disagrees with this comment. As discussed in the CLCPA analysis provided by the applicant and the response to Comments 1, 2, and 3 above, this project includes the removal of 10 Caterpillar 3516 engines from the facility that currently burn landfill gas. This will result in a significant reduction in potential and projected actual direct GHG emissions from the facility. Further, the applicant is proposing to install oxidation catalysts on the eight remaining engines at the facility and convert the remaining engines to burn natural gas. Natural gas burns cleaner than landfill gas. Combined, these changes will result in a significant reduction in emissions of both criteria contaminants and hazardous air pollutants from this facility. While not shown in the CLCPA analysis, the reduction in criteria contaminant emissions resulting from the project is shown in Table 2A of the application. Accordingly, the Department was provided with this information and considered it as part of its review under CLCPA Section 7.

The Department further disagrees that it is inappropriate to compare the emissions that would result from the project to the facility's current emissions. Sections 7(2) and 7(3) of the CLCPA task the Department with reviewing its administrative decisions for consistency with the attainment of the statewide GHG limits and for any potential disproportionate burdens on DACs. In this case, the administrative decision at issue is a modification of the facility's existing permit. If the Department were to deny this modification, the resulting impact on the DAC would be the facility's current operations, not the absence of the facility entirely as the commenter suggests. Accordingly, a comparison to the facility's current operations is the only appropriate metric for this analysis.

Comment 9: The applicant appears to ignore that Seneca Meadows must close in 2025. *Commenter 1*

DEC Response to Comment 9: As discussed in the response to Comment 1 above, while it is true that the fate of the landfill may affect the operation of this facility in the future, the applicant has no control over the landfill's operations since it is owned and operated by another entity. Further, this project is intended to address a need for additional capacity based on current gas flows from the landfill. Should the landfill close as scheduled, it would continue to produce gas for many years before the need for gas collection and control, and therefore the operation of this facility, would diminish. Accordingly, it is not necessary or appropriate for the applicant to explore all potential scenarios with respect to the landfill's operation as part of this application. Should a future change in the operation of the landfill necessitate a change in the operation of this facility, the applicant would need to seek necessary approvals from DEC prior to making any change. Any potential implications under the CLCPA would be evaluated at that time.

Comment 10: The applicant's *Summary of Facility Potential Emissions*, which informs the emission caps established in the draft permit, is based on incorrect assumptions. *Commenter 2*

Response to Comment 10: The commenter raises several points in the discussion surrounding this comment. Each point is discussed in greater detail below.

Engine combustion emissions: Past stack test results of the Caterpillar 3516 and 3520 engines operating at this facility have demonstrated that the proposed 0.5 grams per brake horsepower-hour limit for oxides of nitrogen (NOx) is attainable for these engines while operating on landfill gas. Similar results have been provided for similar engines operating at other landfill gas to energy facilities in DEC's Region 8. Due to the nature of landfill gas, as compared to fossil natural gas, it is not unreasonable to expect similar performance moving forward. In addition, the draft permit requires the facility to periodically test the engines to demonstrate compliance with the proposed limit. The Department will review these test results and take appropriate action if the facility is found to be in noncompliance with the NOx limit.

Emissions from thermal oxidizers and flares: The emission factors provided in USEPA's AP-42 document are acceptable to the Department and the USEPA for the calculation of emissions from stationary sources. Available emission source specific data was used when appropriate (including recent performance data and manufacturer specifications).

NOx modeling: The Department disagrees that the NOx modeling presented in the application is unreliable. As discussed above, the combustion emissions were properly described. Given the rural location of this facility, the Pinnacle NO_2 monitoring station is the most representative ambient background monitoring site and therefore the use of this data is acceptable. The 2009-2011 hourly background data from the Pinnacle monitoring station is the most recent data available for NO_2 at this location. Further, the Department has observed a downward trend in background NO_2 concentrations in recent years. Accordingly, it is expected that more recent data would not contribute to a potential exceedance of the National Ambient Air Quality Standards (NAAQS) as the commenter suggests. Modeling completed for this project was conducted in accordance with NYSDEC/EPA guidance and demonstrates compliance with respective NAAQS for carbon monoxide (CO), oxides of nitrogen (NO_2), sulfur dioxide (SO_2) and particulate matter (PM 2.5).

Hazardous Air Pollutant (HAP) emissions: As discussed in greater detail in the response to Comment 11 below, the draft permit contains several conditions to ensure the proposed oxidation catalysts are properly operated and maintained to reduce HAP emissions. In addition, it is important to note that the formaldehyde limit in the draft permit does not constitute an emissions cap. Accordingly, while the facility would exceed the major facility threshold by exceeding this limit, there are no specific requirements that would be triggered by doing so as the facility currently holds a Title V permit. The facility is accepting this limit on a voluntary basis to prioritize the reduction of co-pollutant emissions. Should an exceedance occur, the Department would

investigate the cause and take appropriate action as it routinely does in similar situations throughout the state.

Comment 11: The emission caps on NOx and formaldehyde proposed in the draft permit are not enforceable under the monitoring methodology proposed and do not meet the requirements of DAR-17. *Commenter 2*

DEC Response to Comment 11: The Department disagrees with this comment. Regarding NOx, Condition 28 of the draft permit requires that the facility track the amount of gas combusted in the engines and flares. The draft permit further requires that this data be used in conjunction with representative emission factors to calculate monthly and rolling 12-month total NOx emissions to demonstrate compliance with the emissions cap. Further, the facility is required to maintain records of these calculations and all data used to perform them.

Condition 80 of the draft permit requires the facility to conduct periodic emissions testing of the engines to demonstrate compliance with a 0.50 grams per brake horsepower-hour emission limit for NOx. Testing must be conducted pursuant to a test protocol approved by the Department and in accordance with reference test methods approved by USEPA. Further, Condition 74 of the draft permit requires periodic monitoring of NOx emissions using a hand-held meter approved by the Department and following specific procedures as described in the permit. This testing is intended to be conducted between the periodic tests required by Condition 80 as a means of demonstrating compliance with the applicable NOx limit. Taken together, these conditions constitute a practically enforceable means of demonstrating compliance with the cap on NOx emissions from this facility that is consistent with the requirements of DAR-17. Accordingly, Condition 28 constitutes a federally enforceable emissions cap on NOx emissions from this facility.

Regarding formaldehyde, the draft permit contains several conditions to assure compliance with the proposed 9.9 ton per year emission limit. Condition 73 requires the facility track carbon monoxide (CO) emissions based on gross electrical output and the emission rate measured during the most recent emissions test. This data is used as a surrogate to demonstrate compliance with the formaldehyde limit. Condition 75 establishes similar periodic monitoring for CO emissions as described for Condition 74 above with respect to NOx emissions. Condition 76 establishes a maximum oxidation catalyst inlet temperature with appropriate periodic temperature monitoring, and Condition 77 establishes a corresponding minimum inlet temperature. Further, Condition 78 establishes a limit on the differential pressure across the catalyst bed. Conditions 76, 77, and 78 ensure that the catalyst is performing within manufacturer's specifications to operate effectively and achieve the design control efficiency. Should any of the monitored parameters be found to be outside of the acceptable range, the facility is required to take corrective action. Finally, Condition 79 requires periodic emissions testing for formaldehyde.

As discussed in the response to Comment 10 above, it is important to note that the formaldehyde limit does not constitute an emissions cap, and therefore DAR-17 is not applicable to it. However, the monitoring described above constitutes a practically enforceable means of demonstrating compliance with the emission limit.

Comment 12: The Applicant initially determined, correctly, that the Project was inconsistent with or will interfere with the CLCPA GHG limits and appears to have revised this statement at DEC's request. *Commenter 1.*

DEC Response to Comment 12: This comment appears to be a misunderstanding of the Department's comments on the applicant's initial CLCPA analysis. The applicant's initial CLCPA analysis submitted on December 15, 2021 stated "the project **may not be** (emphasis added) consistent with the target goals of the CLCPA regulation …". In the Notice of Incomplete Application (NOIA) sent on August 2, 2022, the Department requested that the text be changed to say that the project **is not** (emphasis added) consistent with the target goals of the CLCPA. After the facility conducted a more thorough evaluation as shown in the NOIA response submitted on October 24, 2022, they demonstrated that greenhouse gas and hazardous air pollutant emissions would decrease as a result of the project, and thus they revised their original assessment and concluded that the project is consistent with CLCPA. To be clear, the applicant's second statement was based on its own, independent conclusion and was not in response to the Department's request to use affirmative language in the applicant's initial statement.

However, the Department also notes that Section 7 of the CLCPA requires **the Department** to determine whether its decision to issue the permit for this project would be inconsistent with or would interfere with the attainment of the GHG emission limits. The CLCPA analysis is intended to inform that decision, but the Department is under no obligation to reach the same conclusions as the applicant. Accordingly, the applicant's determination of consistency or inconsistency has no bearing on the Department's obligations pursuant to the CLCPA.

Comment 13: Coalition for Renewable Natural Gas submitted comments in support of this project. They stated that additional in-state renewable gas production is needed to meet goals of CLCPA and federal policy, and bio-gas derived clean fuels are a means to reduce waste sector emissions and displace fossil fuel supply.

DEC Response to Comment 13: The Department acknowledges this comment.

Comment 14: Request that NYSDEC rescind or withdraw the permit or hold an adjudicatory hearing.

DEC Response to Comment 14: Based on the Department's review and consideration of the comments, we have determined that a permit hearing (including an issues conference) is not warranted by the State's environmental regulations.

Attachments: Public Comments

Exhibit R

Date of Request: November 16, 2023 Request No. WE ACT- 0143
Due Date: November 27, 2023 NG Request No. NG-1446

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Noemi Fana

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Page 82 of the KEDNY GIOP panel's direct testimony, in which the panel states that "[t]he Company has contracted with a firm to market and monetize environmental credits generated from the [Newtown Creek] project."

a. Does KEDNY claim any emissions benefits from using RNG produced at the Newtown Creek project?

b. Has KEDNY sold any environmental credits associated with Newtown Creek thus far?

   i. If so, how many?

   ii. If so, how much revenue has been generated from the environmental credits?

Response:

a. No. Under the New York State Department of Environmental Conservation's methodology for calculating greenhouse gas ("GHG") emissions, local production and injection of renewable natural gas ("RNG") into the gas system would result in GHG emissions reductions associated with avoided upstream emissions; however, KEDNY did not include the avoided upstream GHG emissions reductions associated with the production of RNG at the Newtown Creek Wastewater Treatment Plant (the "Newtown Creek RNG Project") in its rate case testimony or exhibits. Direct emissions reduction benefits associated with RNG produced from the Newtown Creek RNG Project are tied to the environmental attributes being sold, and are therefore transferred with the sale of the attributes.

b. Yes. KEDNY contracted with a third party to monetize, market, and sell environmental attribute credits associated with the Newtown Creek RNG Project.

i. As of September 30, 2023, the Company sold 74,951 credits based on environmental attributes from the Newtown Creek RNG Project.

ii. As of September 30, 2023, the sale of credits from the Newtown Creek RNG Project has generated approximately $966,867.90 in total revenue from the environmental attributes, a portion of which is used to pay the third party the Company engaged to monetize the attributes, with the remainder applied to offset the cost of service for the benefit of customers.

Name of Respondent:
Pradheep Kileti
Samara Jaffe

Date of Reply:
November 27, 2023

Exhibit S

Date of Request: January 30, 2024 Request No. WE ACT- 0145
Due Date: March 7, 2024 NG Request No. NG-1463 Supp

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Hillary Aidun

TO: National Grid

SUBJECT: Newtown Creek Project

Request:

Please refer to Response to KCT-01(1), in which the Company stated that KEDNY operates a purification system at the Newtown Creek Wastewater Treatment Plant.

a. Is KEDNY able to track the quantity of gas that goes through the purification system?

b. Does KEDNY currently track the quantity of gas that goes through the purification system?

c. Is KEDNY able track how much of that gas comes from the Newtown Creek Wastewater Treatment Plant?

d. Does KEDNY currently track how much of that gas comes from the Newtown Creek Wastewater Treatment Plant?

e. Is KEDNY able to track how much of that gas comes from organic food waste?

f. Does KEDNY currently track how much of that gas comes from organic food waste?

g. Please provide the amount of money that KEDNY spent each month on operations and maintenance at the purification system in 2023.

h. Has KEDNY ever received complaints from local residents about the Newtown Creek Wastewater Treatment Plant or the purification system?

i. If so, please provide copies of those complaints.

j. Would KEDNY be capable of setting up air monitors near the purification system?

Response:

The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY") provides this supplemental response to question (h) based on a discussion with the requestor further clarifying the nature of the information sought.

h. As indicated in its initial response, KEDNY does not have a record of receiving complaints regarding the Newtown Creek Wastewater Treatment Plant or the purification system that were addressed through the Commission's escalated complaint process (*i.e.*, the Standard Resolution System ("SRS") and Quick Resolution System ("QRS"). *See also* KEDNY's response to DPS-422 regarding complaints referred from the Commission to the Company during calendar years 2019 through 2022.

However, following the clarifying conversation with the requestor, the Company determined individuals within the Company were included among recipients from the New York City Department of Environmental Protection ("NYDEP") and members of the New York City Council, as well as members of the New York State Assembly on emails in 2022 and 2023 in which members of the public sought updates on the status of project construction and expressed concerns about project delays, operations, and public statements regarding project benefits. Copies of the emails are included as Attachment 1 (Confidential).

Attachment 1 (Confidential) includes customer identifying information and should be protected from disclosure. The Company has submitted a request for confidential treatment of the customer information included in Attachment 1 to the Administrative Law Judges in accordance with the Protective Order issued in these proceedings and served a copy of the request, as well as a redacted version of Attachment 1 on the parties.

Name of Respondent:
Legal Department

Date of Reply:
March 18, 2024

From: [redacted]
To: Lincoln Restler
Cc: Angela DeLillo; AngelaL@dep.nyc.gov; Sapienza Vincent; Renee Mc Clure; Bryan Grimaldi; Razig Seabrook; Council Member Lincoln Restler; Emily Gallagher; Andrew Epstein; [redacted]
Subject: [EXTERNAL] Re: Award for Newtown Creek RNG project
Date: Tuesday, November 29, 2022 4:21:24 PM

Any updates on a timeline?

The below quote is both inaccurate and completely disrespectful to the community who's air quality has been worsened for the past 7 years with the flaring of excess gas.

"National Grid's system ties into our existing wastewater treatment process. ***From an air quality perspective, it's great because the system takes gas that would otherwise be flared*** and turns it into a replacement for fossil natural gas," Gajwani says.

https://www.waste360.com/wastewater/new-yorks-newtown-creek-wastewater-treatment-plant-revs-anaerobic-co-digestion-project

[redacted]

On Tuesday, October 18, 2022 at 01:37:39 PM EDT, Lincoln Restler <lincolnpr@gmail.com> wrote:

We have been doing recurring calls with DEP and NG on this and finally have some good news to share...Appreciate how frustrating this one has been.

On Tue, Oct 18, 2022 at 1:32 PM [redacted] wrote:

> https://www.yahoo.com/now/energy-vision-leadership-awards-innovative-162100892.html
>
> We fully understand the value of the project once it is online, but are DEP and National Grid seriously accepting awards for the system that is 7 years behind, spewing tons of excess CO into the atmosphere, and still shaking the entire block on a daily basis?
>
> Is there any update on the timeline for getting the project online or a process for communicating with the community?
>
> [redacted]

[redacted]

Join us Oct. 20th to celebrate NCA's 20th Anniversary at the Tidal Toast!

From: [redacted]
To: [redacted]; Lincoln Restler
Cc: Angela DeLillo; AngelaL@dep.nyc.gov; Sapienza Vincent; Renee Mc Clure; Bryan Grimaldi; Raziq Seabrook; Council Member Lincoln Restler; Emily Gallagher; Andrew Epstein; [redacted]; Steve Chesler
Subject: [EXTERNAL] Re: Award for Newtown Creek RNG project
Date: Wednesday, March 1, 2023 1:58:22 PM

Thank you again Councilmember Restler for this update from December.

To DEP and National Grid- it has been 3 months since the last update and promise of work being completed within a few weeks. However, as the ongoing vibrations along Kingsland Avenue serve as a reminder, the gas is still flaring. Can the community receive a detailed update on achieving the technical points from the Councilmember's last email?

CC'ing Steve Chesler chair of CB1 Env Committee.

[redacted]

On Thursday, December 1, 2022 at 02:45:44 PM EST, Lincoln Restler <lincolnpr@gmail.com> wrote:

Hello - We have been conducting monthly meetings with DEP and National Grid to try to help bring this long delayed project to conclusion. We are all collectively deeply frustrated about how many years behind schedule we are on this project. Earlier this fall, National Grid thought they were all done - but unfortunately final testing revealed issues.

I apologize if our notes are imperfect from our most recent call with National Grid. This is pretty technical stuff.

- There was a problem with a valve that caused turbulence in gas flow and with the odorant management. It is the process of being fixed.
- They worked with the contractor to create a single point of contact and they were onboarded on 11/29.
- They will purge the system and prepare to replace the existing valve that they think is the cause of the problem and will move the odorant injection point. (It was too close to the elbows and caused turbulence in gas flow which interfered with odorant.)
- FDNY will be reviewing and approving their plan on December 8.
- They expect to complete this work by mid-December (approx. Dec 15).
- Should there be no further issues - the plant will be fully operational and they will pilot operations for two weeks by consistently injecting into the grid ie. less flaring.
- After the holidays they will re-evaluate the operation and how the odorant is being captured to make sure everything is working well and can continue.

- Crews are working 7 days a week.

National Grid has assured us they will keep our office posted if there are any issues or hiccups in real time.

Hope this update is helpful. We will do our best to get this resolved as quickly as possible.

Thank you!

Lincoln

On Tue, Nov 29, 2022 at 9:03 PM [redacted] wrote:

> Agreed. Thank you for catching that!
> SMH
> [redacted]
>
> Get Outlook for iOS
>
> ---
>
> **From:** [redacted]
> **Sent:** Tuesday, November 29, 2022 4:21:12 PM
> **To:** Lincoln Restler <lincolnpr@gmail.com>
> **Cc:** Angela DeLillo <adelillo@dep.nyc.gov>; AngelaL@dep.nyc.gov <angelal@dep.nyc.gov>; Sapienza Vincent <vsapienza@dep.nyc.gov>; Renee V. Mc Clure <renee.mcclure@nationalgrid.com>; Bryan Grimaldi <bryan.grimaldi@nationalgrid.com>; Raziq Seabrook <raziq.seabrook@nationalgrid.com>; Council Member Lincoln Restler <district33@council.nyc.gov>; Emily Gallagher <gallaghere@nyassembly.gov>; Andrew Epstein <epsteina@nyassembly.gov>; [redacted]
> **Subject:** Re: Award for Newtown Creek RNG project
> Any updates on a timeline?
>
> The below quote is both inaccurate and completely disrespectful to the community who's air quality has been worsened for the past 7 years with the flaring of excess gas.
>
> "National Grid's system ties into our existing wastewater treatment process. ***From an air quality perspective, it's great because the system takes gas that would otherwise be flared*** and turns it into a replacement for fossil natural gas," Gajwani says.
>
> https://www.waste360.com/wastewater/new-yorks-newtown-creek-wastewater-treatment-plant-revs-anaerobic-co-digestion-project
>
> [redacted]

On Tuesday, October 18, 2022 at 01:37:39 PM EDT, Lincoln Restler <lincolnpr@gmail.com> wrote:

We have been doing recurring calls with DEP and NG on this and finally have some good news to share...Appreciate how frustrating this one has been.

On Tue, Oct 18, 2022 at 1:32 PM [redacted] wrote:

https://www.yahoo.com/now/energy-vision-leadership-awards-innovative-162100892.html

We fully understand the value of the project once it is online, but are DEP and National Grid seriously accepting awards for the system that is 7 years behind, spewing tons of excess CO into the atmosphere, and still shaking the entire block on a daily basis?

Is there any update on the timeline for getting the project online or a process for communicating with the community?

[redacted]

Join us Oct. 20th to celebrate NCA's 20th Anniversary at the Tidal Toast!

From: [redacted]
To: Ellis Karen; DeFalco Beth (DEP); AngelaL@dep.nyc.gov; Sapienza Vincent; Rohit Aggarwala; Sara Pecker; Renee Mc Clure; Bryan Grimaldi; terri@thomsonstrategies.com; Denise Hubbard
Cc: Andrew Epstein; Emily Gallagher; Lincoln Restler; Mariana Alexander; Emily Ruby; [redacted] Steve Chesler; bk01@cb.nyc.gov
Subject: [EXTERNAL] Fw: Ribbon Cutting Ceremony for Renewable Clean Energy
Date: Friday, June 9, 2023 2:06:54 PM
Attachments: image001.jpg
IMG_0662.JPG
IMG_0759.JPG

Greetings DEP and National Grid -
The below invitation was sent to our local electeds, but none of the [redacted] members who have spent years actively engaged with DEP about the Newtown Creek Plant in efforts to mitigate community impacts through dialog and transparency. In addition to not inviting community stakeholders, having this ribbon cutting is problematic for the following reasons:
1. The flares are still flaring - so clearly the project is not complete. See attached photos from Monday (active flames) and today.
2. DEP/National Grid have not had a conversation with the community about this project in years. I realize DEP is finally coming to present to Community Board 1 next Tuesday (night before the ribbon cutting), but National Grid and Waste Management will not be present so we can not properly get answers to longstanding concerns about: plans to expand the project/volume; the financial arrangements between the City and National Grid (they have a new rate case with lots of language about seeking rate increases for RNG projects); potential increase to truck traffic; what is happening with the ongoing flares/vibrations, etc.

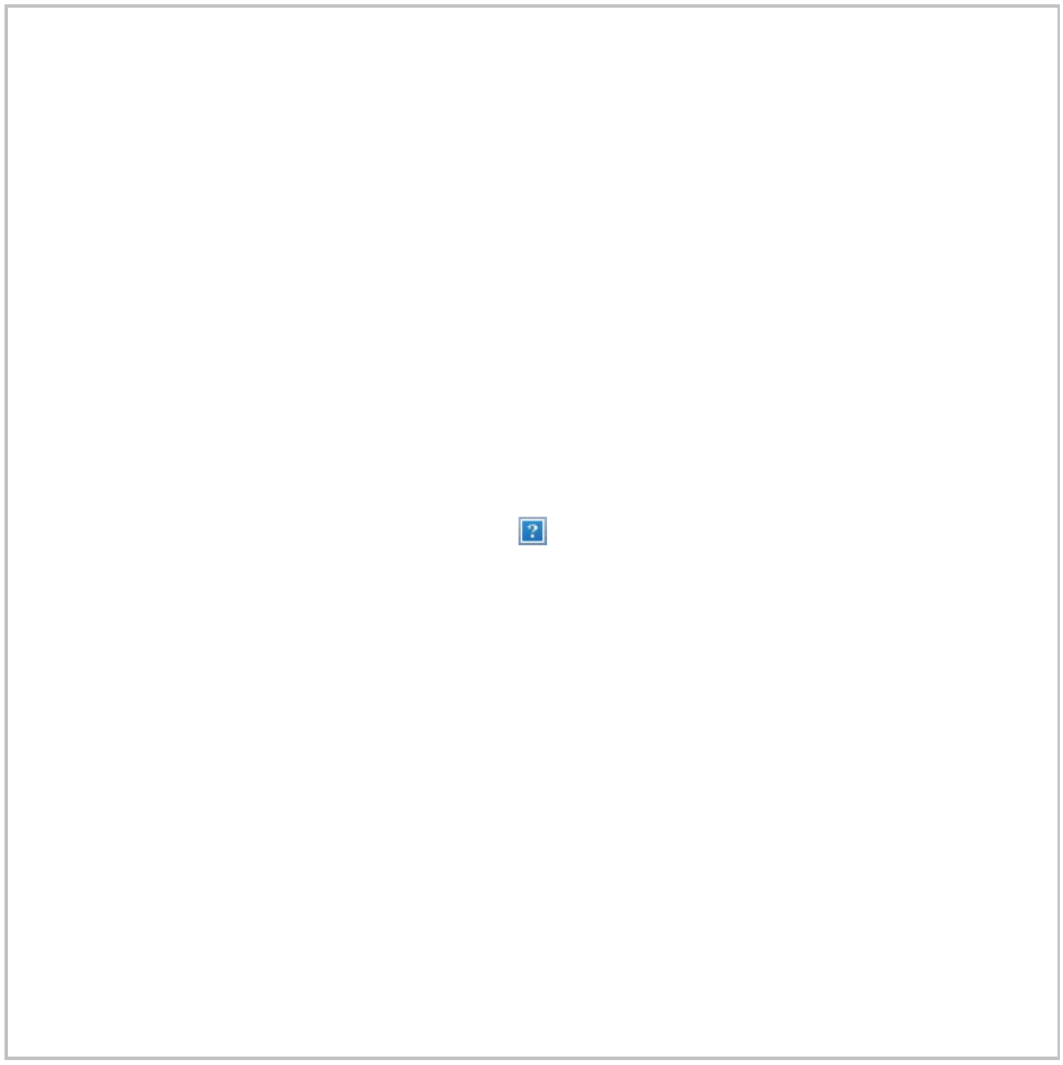
I appreciate the complications in getting this project completed, but feel obligated to raise these issues in hopes that we can improve transparency and communications going forward. Please feel free to forward these concerns (on behalf of [redacted]) to appropriate persons from the Mayor's Office, DSNY, and Waste Management.

[redacted]

From: "Ellis, Karen (DEP)" <KarenE@dep.nyc.gov>
To: "Ellis, Karen (DEP)" <KarenE@dep.nyc.gov>
Cc: "Hubbard, Denise (DEP)" <DeniseH@dep.nyc.gov>
Sent: Friday, June 9, 2023 11:58:09 AM
Subject: Fwd: Ribbon Cutting Ceremony for Renewable Clean Energy

Good morning Assemblymember Gallagher:

INVITATION FOR CLEAN ENERGY ANNOUNCEMENT



You are cordially invited to the ribbon cutting ceremony for the City's first waste to renewable energy system at the Newtown Creek Wastewater Resource Recovery Facility.

This is a secure facility. All attendees – including any staff you bring - must RSVP and bring a government-issued photo-ID to be admitted onsite.

Please RSVP by Monday, June 12 to: SpecialProjects@dep.nyc.gov

WHAT: ribbon cutting for the waste to renewable energy system

WHEN: Wednesday, June 14, 2023 at 11:30am

WHERE: The Newtown Creek Wastewater Resource Recovery Facility
329 Greenpoint Avenue, Brooklyn, NY

WHO: NYC Mayor's Office, Department of Environmental Protection, National Grid, Department of Sanitation, and Waste Management

Karen D. Ellis I Director of Community Affairs
NYC Environmental Protection I Bureau of Public Affairs and Communications (BPAC)
Office:(718)595-4394 I Cell: 347-419-0823 I E: kellis@dep.nyc.gov

From: [redacted]
To: terri@thomsonstrategies.com; Eileen Cifone; Karen Young
Cc: Andrew Epstein; Emily Ruby; Lincoln Restler; Emily Gallagher; samantha maldonado (the city); Steve Chesler
Subject: [EXTERNAL] Flares at Newtown Creek
Date: Wednesday, November 29, 2023 1:28:10 PM
Attachments: IMG_6012.jpeg

Greetings National Grid-
As soon as I got halfway through this article, in which National Grid claims:
"the system is now back online and working as originally designed. "

I feel our building vibrating and look outside to see that the treatment plant flares are still running and the system is not back online.

Will National Grid redact this quote or provide a more thorough explanation as to what is happening, including communication with the community about the status of the project?

[redacted]

Exhibit T

Date of Request: July 21, 2023 Request No. DPS-849
Due Date: July 31, 2023 NG Request No. NG-1056

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case 23-G-0225/0226 Data Requests

Request for Information

FROM: Brian Grode

TO: National Grid

SUBJECT: Newtown Creek Forecast

Request:

In all interrogatories, all requests for workpapers or supporting calculations shall be construed as requesting any Word, Excel or other computer spreadsheet models in original electronic format with all formulae intact and unlocked.

Regarding the Newtown Creek Revenues provided in 'Exhibit___(RDP-15) Workpaper 4 to RDP -2CU KEDNY.xlsb' p. 13-Newtown Creek:

1. Explain how KEDNY forecasted the D3 Gas and D5 Gas produced by the Newtown Creek project in the Rate Year and Data Years.

2. Explain how KEDNY forecasted the Commodity Price of $3.25 in the Rate Year and $3.33, $3.32, and $3.35 in the respective Data Years.

Response:

1. National Grid worked with the New York City Department of Environmental Protection ("DEP") to project gas production levels within the north and south digesters. The projections were based on DEP's gas production meter actual totals through 2022 and include projections on food waste injection rates and sludge production recovery. The projections of D3 Gas and D5 Gas were based on the renewable fuel standard whereby any amount of food waste added to an anaerobic digester would devalue all the gas produced from D3 to D5.

   Food Waste: DEP has publicly stated its plans to expand food waste injection. The existing food waste system is capped at 250 wet tons/day and only injects into Digesters 1-4. DEP has a consultant who is designing an expansion of the food waste program, looking to double the injection rate to up to 500 wet tons/day. The projections called for all the food waste to be added to Digesters 1-4 to avoid the financial impact of devaluing all the gas produced on site from D3 to D5. This results in higher projected gas production for

Digesters 1-4 than for Digesters 5-8.

Sludge Production: Newtown Creek's service territory includes parts of southwest Queens, northwest Brooklyn, and lower Manhattan. COVID-19 and the shift to remote work had huge impacts on the sludge production on site. NYC has observed a steady recovery from the 45% decrease in production observed in summer 2019. Current levels are still down 30% from 2018 and the projections include sludge production recovery to approximately 15% of 2018 levels.

Based on the above explanations, the Company projected the following dekatherms of gas for the Digesters 1-4 and Digesters 5-8.

	FY2025	FY2026	FY2027	FY2028
Digester 5-8 Production (Dth)	90,427	99,470	104,443	109,665
Digester 1-4 Production (Dth)	105,739	116,312	122,128	128,234

2. KEDNY's forecast commodity prices of $3.25 in the Rate Year and $3.33, $3.32 and $3.35 in the respective Data Years were forecast using a 12-month average, for the respective Rate Year and Data Years, of the weighted average cost of commodity rates (excluding Lost And Unaccounted For Gas) based on the December 2022 NYMEX.

Name of Respondent:
Melissa Barnes
Brian Barkwill

Date of Reply:
July 31, 2023

Exhibit U

Date of Request: February 23, 2024 Request No. WE ACT- 0157
Due Date: March 4, 2024 NG Request No. NG-1474

KeySpan Gas East Corporation d/b/a National Grid
The Brooklyn Union Gas Company d/b/a National Grid NY

KEDNY KEDLI Case No. 23-G-0225/0226 Data Requests

Request for Information

FROM: Noemi Fana

TO: National Grid

SUBJECT: Newtown Creek Project & Proposed RNG Interconnection Projects

Request:

Please refer to Response to WE ACT-155(b), in which the Company stated that the Newtown Creek purification system operated for approximately 123 days in 2023.

a. Does any agreement exist between the Company and New York City that restricts the amount of time that the purification system may be offline? If an agreement exists or is in place, please provide a copy.

b. Does any agreement exist between the Company and New York City that imposes penalties when the purification system is offline? If an agreement exists or is in place, please provide a copy.

Response:

a. The agreement between the Company and the City does not restrict the amount of time that the purification system may be offline.

b. The agreement between the Company and the City does not impose penalties when the purification system is offline. See Attachment 1 for WE ACT-0156.

Name of Respondent: Date of Reply:
Dennis Leyble March 4, 2024

Exhibit V

National Grid US
@nationalgridus

Our Clean Energy Vision aims to help customers live more sustainably through four key pillars:
- Energy Efficiency
- Fossil-free Gas
- Hybrid Heating
- Electrification and Geothermal
Because we have #OnlyOneEarth
ngrid.com/3x4PYEM

10:00 AM · Jun 5, 2022

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