

**MEMORANDUM OF UNDERSTANDING
THROUGH WHICH**

[Name of Requesting Business or University]

**IS PURCHASING
Trace Gas Air Standards**

**FROM
Global Monitoring Laboratory (GML)
Office of Oceanic and Atmospheric Research (OAR)
National Oceanic and Atmospheric Administration (NOAA) U.S.
Department of Commerce (DOC)**

Agreement No: ___ **GRNXXXXXX** ___

Contact Name and Address that NOAA should send invoices to:

Required:

Name:	
Title:	
Address:	
City, State, Zip	
Phone:	
Fax:	
E-Mail:	

Required Information:

FOR REQUESTING U.S. BUSINESS or UNIVERSITY ONLY:	
Dun & Bradstreet No:	
Tax Payer ID No:	

NOAA ESRL GML ACCNT INFORMATION	
DUNS/BPN:	162008767
EIN:	84-1040636
ALC:	13-14-0001
OMB Max Code:	006-48
TAS:	13X1450
BETC:	COLL

1. PARTIES AND PURPOSE

This Memorandum of Understanding (MOU) establishes an agreement between _____ [Name of Requesting Business or University] and the NOAA Global Monitoring Laboratory¹ (GML), through which Non-Federal Businesses and Universities will pay GML for calibrated trace gas air standards, including shipping and handling.

2. BACKGROUND

High precision measurements of the trace gases CO₂, CH₄, CO, N₂O, and SF₆ are being undertaken by many laboratories in order to better understand the emissions and biogeochemical cycles of these gases. There can be no integration of all these various measurements unless the data are referenced to common, well-defined calibration scales. The recommended consistency for optimally usable CO₂ measurements in the unpolluted background atmosphere is 0.1 umol/mol (ppm) for the northern hemisphere and 0.05 umol/mol for the southern hemisphere [World Meteorological Organization (WMO), GAW Report No. 255, 2020]. Because of stringent quality controls necessary for the measurement of long-lived trace gases, stable reference gas standards are an integral part of any long-term measurement program.

GML serves as the [Central Calibration Laboratory \(CCL\)](#)² for the WMO Global Atmosphere Watch. In this role, GML maintains and distributes gas standards for CO₂, CH₄, CO, N₂O, and SF₆ for atmospheric monitoring. The need for ambient air gas standards has not been filled by a private company or corporation demonstrating the desired level of consistency over time.

GML has been involved with making CO₂ standards since the early 1970s [Miller, 1974] and over the years has expanded to include methane, nitrous oxide, stable isotopes of CO₂, and other trace gases related to climate change and ozone depletion. GML can fill and calibrate compressed gas cylinders for use as standard reference gases by other laboratories for measurements of CO₂ and CH₄, as well as other trace gases.

3. AUTHORITY

The authorities for GML to enter into this agreement are:

- (1) 33 U.S.C. § 883e, which authorizes NOAA to enter into agreements, with, and to receive and expend funds made available by, any State or subdivision thereof, any Federal agency, or any public or private organization, or individual, for surveys or investigations authorized herein, or for performing related surveying and mapping activities, including specialpurpose maps, and for the preparation and publication of the results thereof, and to establish the terms of any agreement entered into under this section, including the amount of funds to be received, and may contribute that portion of the costs incurred by the National Oceanic and Atmospheric Administration, including shiptime and personnel expenses, which NOAA determines represents the amount of benefits derived by the Administration from the agreement.
- (2) 33 U.S.C. § 883d, which authorizes NOAA to increase engineering and scientific knowledge by conducting developmental work for the improvement of surveying and cartographic methods, instruments, and equipments; and to conduct investigations and

¹ <https://gml.noaa.gov/>

² <https://gml.noaa.gov/ccl/>

research in geophysical sciences (including geodesy, oceanography, seismology, and geomagnetism).

4. **TERMS AND CONDITIONS**

GML will achieve full cost recovery for the goods and services it is providing under this agreement.

Requesting Business or University is responsible for paying all FEDWIRE and/or Automated Clearing House (ACH) payment processing fees prior to sending full payment amount due on MOU to U.S. Department of Commerce, NOAA.

Requesting Business or University assumes responsibility for the safe handling of compressed gas cylinders upon the receipt of cylinders from GML.

Compressed Gas Cylinders are regulated by U.S. Law under CFR Title 49, parts 106-179.

This Agreement is subject to the availability of funds.

Standards:

Unless otherwise stated, the cylinder is size N150, 29.5 liter internal volume, with a Ceodeux brass packless valve, CGA-590.

Request for Standards

Estimated logistics for services are:

6-10 weeks to fill (after payment is received)

6-10 weeks to calibrate per trace gas species

Please allow an additional 12 weeks per isotope requested

Standard turnaround time varies due to seasonal logistics and calibration queue

Standards will be delivered to:

Requesting Business or University must state who and where the standards will be shipped to. Ship and Deliver Standards to:

Name:	
Title:	
Address:	
City, State, Zip	
Phone:	
Fax:	

E-Mail:	
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INCLUDE IMPORTATION BROKER CONTACT INFORMATION IF THERE IS ONE.

For importation pro-forma invoice, we need your tax ID number: _____.

Return Shipping and handling:

DAP – Delivered at Place (named place of destination)

Requesting Business and Universities pay for carriage to the named place, except for costs related to import clearance, and assumes all risks prior to the point that the goods are ready for unloading by the buyer. Import clearance = import duty and VAT and not the Import Customs Clearance. There is no seller obligation for import clearance.

One recalibration for CO₂, CH₄, CO, N₂O/SF₆ after use is included in the cost of the standard gas. THIS IS HIGHLY RECOMMENDED EVERY 3 YEARS FOR PRECISION WORK AND SHOULD AT LEAST BE PERFORMED AT THE END OF THE CYLINDER'S USE [20 atm pressure].

GML will provide calibration of gases to **Requesting Business or University, who will pay GML in advance for its services**, based on the following price table. Costs are updated yearly to adjust for increases in the cost of products and services.

SFF ITEM	FY25 Cost	FY26 Cost	Supporting Material	Prepared by
N265 Aluminum cylinder, 46.4 liter volume, [Custom order]*	\$1458	\$1531	SFF_AllTankCosts_FY26	S.D.
N150 Aluminum cylinder, 29.5 liter volume [Used cylinder is default; request 'New' if needed]**	\$653	\$449	SFF_AllTankCosts_FY26	S.D.
N80 Aluminum cylinder, 15.8 liter volume [Custom order]*	\$545	\$572	SFF_AllTankCosts_FY26	S.D.
N60 Aluminum cylinder, 10.8 liter volume	\$444	\$465	SFF_AllTankCosts_FY26	S.D.
N30 Aluminum cylinder, 5.9 liter volume [Custom order]*	\$411	\$431	SFF_AllTankCosts_FY26	S.D.
NWR Filling	\$637	\$676	SFF_AllTankCosts_FY26	S.D.
N150 Aculife cylinder, 29.5 liter volume	\$932	\$932	SFF_AllTankCosts_FY26	S.D.
NWR Filling (Aculife size N150)	\$896	0	Not available in FY26	S.D.
Analyte Adjustment(s)	\$115	\$117	SFF_Analyte_Adjustment_2026	S.D.
QC Check on uncalibrated mixture	\$125	\$125	SFF_QC_check_uncalibrated_mixture	S.D.

Analysis for CO2 and CH4	\$1,245	\$1250	SFF_analysis_CO2-CH4_FY2026	S.D., A.C.
Stable Isotopes of CO2 & CH4	\$917	\$917	SFF_StableIsotopesCO2	S.D.
Analysis for N2O and CO	\$942	\$929	SFF_analysis_N2O_CO_FY2026	S.D., A.C.
Analysis for SF6	\$492	\$650	SFF_analysis_SF6_FY2026	S.D., A.C.
Analysis for CFCs by GC-ECD	\$577	\$566	SFF_analysis_CFCs_FY2026	S.D., I.V.
Analysis by GCMS	\$988	\$975	SFF_analysis_GCMS_FY2026	S.D., I.V.
Additional recalibrations	\$416	\$576	SFF_Additional Recalibration	S.D.
Shipping and handling, Foreign – 1 to 3 cylinders	\$260	\$270	SFF_2026_shipping	S.D.
Shipping and handling, Foreign – 4 to 9 cylinders	\$253	\$257	SFF_2026_shipping	S.D.
Shipping and handling, Foreign – 10 or more cylinders	\$126	\$180	SFF_2026_shipping	S.D.
Shipping and handling, Domestic*** – 1 to 3 cylinders	\$103	\$106	SFF_2026_shipping	S.D.
Shipping and handling, Domestic*** – 4 to 9 cylinders	\$43	\$62	SFF_2026_shipping	S.D.
Shipping and handling, Domestic*** – 10 or more cylinders	\$27	\$23	SFF_2026_shipping	S.D.

*Custom orders subject to availability

**Used cylinders in very good condition with recent DOT certification will be used as our primary stock. You MUST REQUEST a new cylinder if you require this for importation

***Canada is considered domestic for shipping purposes

5. TRANSFER OF FUNDS

Payment is required in advance of, or simultaneously with, the rendering of goods or services provided by GML.

Requesting Business or University is responsible for all payment transfer fees and costs. When making payment using FEDWIRE or Automated Clearing House (ACH), your banking institution will charge a **FEDWIRE or ACH payment processing fee** (example \$10.00, \$20.00, \$35.00 and up to \$60.00) for them to make this method of payment to NOAA. **This fee MUST be paid to your bank prior to making payment to NOAA,** as payment to NOAA must be for exact amount owed in MOU.

To purchase from GML, one (1) original signed copy of this “Memorandum of Understanding”, along with payment or appropriate funding document should be mailed to the GML Technical Contact listed in the contact section below.

Payment should reference project number 14036R1MAB26P00, and be made in US dollars payable to NOAA/DOC.

If you are unable to make payment upon submission of signed MOU, you will receive a NOAA invoice. NOAA will invoice the Requesting Business or University for the full amount of goods or services upon receipt of the fully signed MOU. **The Requesting Business or University is expected to make payment upon receipt of the NOAA invoice** by check according to the Invoice instructions, or electronic payment can be made according to Attachment A instructions.

All funding documents (PO's, etc.), if submitted, **must** contain the following information:

- All costs shown in U.S. Dollars,
- All text in English,
- A clear description of goods and services being paid for,
- Clear invoicing and ship to (standards delivered to) instructions along with names, addresses, phones, faxes and email addresses.
- Funding document should reference Project Number 14036R1MAB26P00, and be made payable in US dollars to NOAA/DOC
- Universities are required to provide a copy of their Purchase Order (PO).

For Requesting U.S. Businesses/Universities only:

- Employer Identification Number(s),
- Dun & Bradstreet Number(s),

6. CONTACTS

The technical points of contact for this agreement are:

NOAA GML Technical Contact:

Stephen DeVogel
Global Monitoring Laboratory (GML)
National Oceanic and Atmospheric Administration (NOAA)
325 Broadway – R/GML1 Boulder,
CO 80305, USA
Phone: 720-282-1395 (DeVogel)
E-mail: stephen.devogel@noaa.gov
Web Site: <http://www.cmdl.noaa.gov/ccl/>

Business or University Technical Contact:

Name:	
Title:	
Address:	
City, State, Zip	
Phone:	
Fax:	

E-Mail:	
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Fiscal and budgetary communications can be directed to:

NOAA GML Budgetary Contact:

Samantha Middel
 NOAA/ESRL GML
 325 Broadway – GML
 Boulder, CO 80305, USA
 Phone: 720-263-6197
 E-mail: samantha.middel@noaa.gov

NOAA GML RSFF Administrative Contact:

Sandy McClellan (Secondary POC)
 NOAA/ESRL GML
 325 Broadway – GML
 Boulder, CO 80305, USA
 Phone: 720-295-4105
 E-mail: sandy.mcclellan@noaa.gov

Damian Garcia (Primary POC)
 NOAA/ESRL GML
 325 Broadway – GML
 Boulder, CO 80305. USA
 Phone: 720-735-9145
 E-mail: damian.garcia@noaa.gov

Business or University Budgetary Contact:

Name:	
Title:	
Address:	
City, State, Zip	
Phone:	
Fax:	
E-Mail:	

The parties agree that if there is a change regarding the information in this section, the party making the change will notify the other party in writing of such change.

7. DURATION OF AGREEMENT, AMENDMENTS AND MODIFICATIONS

This agreement will become effective when signed by both parties. The agreement will terminate when the Requesting Business receives all materials and analysis results, but no later than three years from the effective date. This agreement may be amended at any time by mutual written consent of the parties

Any party may terminate this agreement by providing thirty days written notice to the other party. In the event of termination, all amounts unexpended by GML as of the date of GML's receipt of a notice of termination from the Requesting Business or University, or as of the date of GML's sending a notice of intent to terminate to the Requesting Business or University, shall be promptly refunded to Requesting Business or University, less any amounts required to close the account.

8. RESOLUTION OF DISAGREEMENTS

Should disagreements arise on the interpretation of the provisions of this agreement or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement or interpretation is not reached within 30 days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.

9. SIGNATURES

**[Signature of person who has authority
Business or University
to this agreement] Name:**

Title:

Address:

City, State, Zip:

Phone:

Fax:

E-Mail:

Date to bind Requesting

Nikola Garber
Chief Financial Officer/CAO
Mail Code: R
Office of Oceanic and Atmospheric Research
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
1305 East West Highway, Bldg. SSMC4
Silver Spring, MD 20910-3278
Phone: (301 734-1079
E: Mail: nikola.garber@noaa.gov

Date

ATTACHMENT A – PAYMENT INSTRUCTIONS

CHOICE (1) FEDWIRE

Please be sure to include within the funds transfer identifying information linking the payment to the invoice, i.e., NOAA invoice#, Agreement #, PO#/Funding document, and Project # as referenced in Part 4 of this agreement. If there are problems completing the bank transfer, or check payment contact Sandy McClellan at sandy.mcclellan@noaa.gov.

Please note that there are 2 distinct methods of electronic funds transfers (1) or (2) or payment can be made by choice

(3) a check. Note: account numbers, etc., are different and unique for both methods.

UNITED STATES DEPARTMENT OF COMMERCE – NOAA FEDWIRE INSTRUCTIONS

Fedwire Field Tag	Fedwire Field Name	Required Information
{1510}	Type/Subtype	1000
{2000}	Amount	<i>(enter payment amount)</i>
{3400}	Receiver ABA routing number *	021030004
{3400}	Receiver ABA short name	TREAS NYC
{3600}	Business Function Code	CTR (or CTP)
{4200}	Beneficiary Identifier (account number)	813140001000
{4200}	Beneficiary Name	NOAA
{5000}	Originator	<i>(enter the name of the originator of the payment)</i>
{6000}	Originator to Beneficiary Information – Line 1	NOAA/GML
{6000}	Originator to Beneficiary Information – Line 2	14036R1MAB-26P00
{6000}	Originator to Beneficiary Information – Line 3	MOU NUMBER
{6000}	Originator to Beneficiary Information – Line 4	PO NUMBER

* **The financial institution address for Treasury’s routing number is: FRB of New York, 33 Liberty Street, New York, NY 10045**

Additional Bank Information:

- Swift Code: FRNYUS33 (Federal Reserve Bank of New York)
- Account Type: Checking
- A foreign bank cannot make the payment directly – it must work through a U.S correspondent bank. The payment must be in U.S. dollars.
- Sender Routing/Swift numbers:
 - JPMorgan Chase: Routing#: 021000021 / Swift Code: CHASUS33
 - Bank of America Routing#: 026009593 / Swift Code: BOFAUS3N

Agency Contacts:

- Chanel Sledge 302-751-0138 / chanel.sledge@noaa.gov HQTRS – Silver Spring, MD
- Ines Allen 240-624-0830 / ines.allen@noaa.gov HQTRS – Silver Spring, MD

CHOICE (2) - ACH Credit instructions

UNITED STATES DEPARTMENT OF COMMERCE - NOAA

ACH Credit Instructions

Note: Your banking institution will charge an ACH processing fee (example \$10 .00, \$20.00, \$35.00 and up to \$60.00) to make the ACH payment to NOAA. This fee **MUST** be paid to your bank prior to making payment to NOAA as payment to NOAA must be for exact amount owed.

NACHA Record Type Code	NACHA Field	NACHA Data Element Name	Required Information
5	3	Company Name	<i>(enter the name of the payor)</i>
5	6	Standard Entry Class Code	CCD
5	9	Effective Entry Date	<i>(enter intended settlement date)</i>
6	2	Transaction Code*	22
6	3 & 4	Receiving DFI Identification (ABA routing #) @	051036706
6	5	DFI Account Number	800540023000
6	6	Amount	<i>(enter payment amount)</i>
6	8	Receiving Company Name #	DOC/NOAA/GML 14036R1MAB-25P00

The Requesting Business or University is required to pay all Wire Transfer Fees, please make sure these fees are paid prior to making the ACH payment.

Required Identifying Information such as DOC NOAA GML, Project# 4036R1MAB-25P00
MOU#GRN2 , Invoice#

ACH debits are not permitted to this ABA routing number. All debits received will be automatically returned.

Bank Name: Credit Gateway – ACH Receiver 33 Livingston Ave. St. Paul, MN 55107 1-877-815-1206 #
Identifying Information such as: NOAA; the Invoice #, Loan #, Project, Travel Order # and Traveler’s Name.

NOTE: If the payment cannot be identified, it will be returned.

Agency Contacts:

- Marie Foreman 301-444-2766 HQTRS – Silver Spring, MD
- Chanel Sledge 302-751-0138 HQTRS – Silver Spring, MD
- Melvin Spencer 301-444-2128 HQTRS – Silver Spring, MD

CHOICE 3 – SENDING A CHECK:

Note: When trying to make an electronic payment, if your bank goes through their US based partner, the payment should transfer. Should the Federal Reserve Bank (FRB) not recognize your foreign (to USA) bank, it would then be best to send payment in the form of a check.

Should payment be made by check, please mail payment to the following address:

MAKE CHECK PAYABLE TO:

U.S. Department of Commerce, NOAA

MAIL PAYMENT WITH COPY OF THE INVOICE TO:

**U.S. Department of Commerce,
NOAA/GML
PO Box 979008
St. Louis, MO 63197-9000**

Reference the following on all payments:

- DOC/NOAA GML
- 14036R1MAB-26P00 , and
- MOU# in memo area of check.