

# 2<sup>nd</sup> Meeting

## Mexico Ozone Depleting Substances Project Protocol Workgroup

Mexico City, Mexico



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January 14, 2015



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Item 1

# INTRODUCTIONS & REVIEW OF AGENDA

# Agenda



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Item #	Expected time	Description
	8:45 – 9:00 am	Gathering, setting up webinar
1	9:00 – 9:30	Introduction and review of agenda
2	9:30 – 9:45	Process update
3	9:45 – 10:30	ODS Composition and Quantity Analysis Requirements (Requirements for Laboratory & Scales – Section 6.4)
4	10:30 – 11:30	Destruction Facility Requirements (Section 6.5)
5	11:30 – 12:15	Point of Origin and Chain of Custody Documentation Requirements (Section 6)
	12:15 – 13:15	Lunch
6	13:15 – 14:15	Quantification (Section 5)
7	14:15 – 14:45	Outstanding Issues related to Eligibility (Sections 2 & 3)
8	14:45 – 15:45	Extra time for discussion of issues flagged by workgroup
9	15:45 – 16:00	Next steps
	16:00	Adjourn



# Protocol organization

1. Introduction
2. Project Definition
3. Eligibility
4. GHG Assessment Boundary
5. Quantification
6. Monitoring
7. Reporting
8. Verification
9. Glossary
- Appendices

I do not plan to go through each protocol section today, just those where I need additional feedback from the workgroup. However, keep this format in mind, in case you want to flag additional sections for discussion. We have an hour at the end of the day reserved for such topics.



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Item 2

# PROCESS UPDATE



# Protocol Development Timeline

*This schedule is preliminary and subject to change.*

Milestone/Task	Timeline
Commence Protocol Development	September 2014
1 <sup>st</sup> Workgroup Meeting	November 2014
Workgroup Draft of Protocol Distributed	December 19, 2014
2 <sup>nd</sup> Workgroup Meeting (in person in Mexico)	January 14, 2015
Workgroup comments on draft protocol due	January 21, 2015
30-day Public Comment Period	February 2015
Public Meeting (webinar)	Late-February 2015
Reserve staff responds to and incorporates public comments; finalizes protocol	March 2015
Adoption of the Protocol by the Reserve's Board of Directors	April 2015



# Process Update

- Workgroup should provide written comments after meeting, as well as any additional resources requested by the Reserve
  - Comments & Resources due COB Wednesday, January 21<sup>st</sup>.
  - Please submit comments in a word document, organized by protocol section.
- The Reserve will follow up directly with workgroup members on any unresolved issues. We will not hold a 3<sup>rd</sup> workgroup meeting.
- There will be additional opportunities to comment, but it is most useful for you to raise concerns, make comments, and provide requested resources now.
  - Month-long public comment period in February (Reserve will respond in writing to all comments received)
  - Public meeting on the protocol (via webinar) in February.



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Item 3

# ODS COMPOSITION AND QUANTITY ANALYSIS REQUIREMENTS

*(REQUIREMENTS FOR SCALES &  
LABORATORIES, SECTION 6.4)*



# Analysis of ODS Quantity (Scales)

## (Section 6.4.1)



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### Current requirements

- The scale used must have its calibration verified **quarterly** by PROFECO or a verification unit certified by PROFECO. Verification must be performed according to NOM-010-SCFI-1994 using test weights certified to NOM-038-SCFI-2000.
- A scale is considered calibrated if it is within the maintenance tolerance of the relevant NOM-010-SCFI-1994 accuracy class.
- The full weight of tanks must be measured no more than two days prior to commencement of destruction and the empty weight must be measured no more than two days after the conclusion of destruction, as must be noted on the Certificate of Destruction
- For projects in which the destruction facility is also the project developer, an independent third party, such as a verification body, must be onsite to attest to the accuracy of the full and empty weight tickets.

# Analysis of ODS Quantity (Scales)

## (Section 6.4.1)



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### Questions / Seeking Comment

- Is quarterly calibration by PROFECO/ PROFECO-certified verification unit too frequent?
  - Based on US protocol, but Mexican requirement is otherwise annual.
  - Is PROFECO the right agency here? Would “Sistema Nacional de Calibracion” be more appropriate?
- Does this section refer to too many regulations? Or are there others that should be included?
  - Currently refers to: NOM-010-SCFI-1994, NOM-038-SCFI-2000
- Requirement for an independent third party to be onsite for weighing of ODS tanks (full and empty) when the destruction facility is also the project developer
  - This is not a requirement in the US/A5 Protocols, but it is proposed to improve verifiability, as Quimobasicos is the only eligible destruction facility and is planning to act as a project developer.
  - Is this requirement reasonable? Is there an alternative suggestion that is equally verifiable?



# Analysis of Composition of ODS (Laboratories, Section 6.4.2)

## Current Requirement

- Use laboratories certified by and following the Air-Conditioning, Heating and Refrigeration Institute (AHRI) 700-2006 standard.
- No Mexican labs are currently AHRI certified and according to WG feedback, EMA (Mexican accreditation agency) does not have technical capability to certify to this or a comparable standard.
- Samples will likely be sent to AHRI-certified labs in the US, who may be affiliated with Mexican labs/technicians. The labs and technicians may not be affiliated with the project developer
- If the laboratory is located in the US, the transport and delivery of project samples must comply with Mexican and US import/export laws and maintain additional documentation of that process for verification purposes.
- Samples will be taken by trained technicians who have completed SEMARNAT's course "Services Refrigeration and Air Conditioning Good Practices" and who is listed on the ODS Information Monitoring System (SISSAO).



# Analysis of Composition of ODS (Laboratories, Section 6.4.2)

## Questions / Seeking Comment

- Do these requirements seem reasonable?
  - The Reserve will be following up with AHRI to confirm whether they might be able to certify labs in Mexico, with EMA about whether some sort of certification similar to the AHRI 700-2006 standard might be possible, and with ISO to see if standards are under development.
  - Recommendations of who to reach out to, or additional information on the above is welcome.
- Should Mexican labs or technicians be required to have some sort of EMA certification on top of other requirements (e.g. SEMARNAT course, SISSAO listing)?
- Requirement that sample be taken in clean, fully evacuated sample bottle with a minimum capacity of one pound meeting applicable Mexican Ministry of Communications and Transportation requirements. Can someone confirm this Ministry has such requirements?



# Analysis of Composition of ODS (Laboratories, Section 6.4.2)

## Questions / Seeking Comment

- Currently, very limited references to Mexican and US import/export laws governing the transport and delivery of project samples
  - Potentially could also refer to compliance with Mexican laws: SEMARNAT-07-029; and/or Article 26, subarticle IV of the LGPGIR; and/or US laws: Title VI of the Clean Air Act (40 CFR 82), other laws under US customs
  - May not be necessary, as Article 5 only refers to the above US laws
- Additional import/export requirements? Considerations? Concerns?



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Item 4

# DESTRUCTION FACILITY REQUIREMENTS (SECTION 6.5)

# Destruction Facility Requirements (Section 6.5)



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## Current Requirements

- Destruction facilities must be permitted under NOM-098-SEMARNAT-2002, permit must explicitly include ODS, and facility must meet all TEAP guidelines.
- Protocol relies on TEAP requirement for destruction: requires a “destruction and removal efficiency” (DRE) of 99.99 percent or higher
  - Quimobasico’s permit requires DRE calculated on a monthly basis by a third party lab (accredited by EMA), to be reported to SEMARNAT-PROFEPA.
  - Protocol requirement will be to comply with the terms of the permit
  - Protocol also currently requires that DRE is disclosed to the public in the permit.
- Following initial performance testing, facilities must be third party certified annually that they meet TEAP requirements.

# Destruction Facility Requirements (Section 6.5)



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## Questions / Seeking Comment

- Is there anything else (beyond a valid permit to destroy hazardous waste under NOM-098-SEMARNAT-2002, explicitly allowing for the destruction of ODS) we want to specify that should be included here? Additional permits?
- Is it reasonable (necessary) for the protocol to require that DRE is disclosed to the public in the permit?
- Is the requirement that destruction facilities be third party certified annually to meet TEAP requirements too frequent?
  - In US/A5 protocols, this requirement is every three years. Quimobasicos believes it can meet annually.
  - Is annual frequency necessary for comparable rigor to US destruction? Does an annual requirement establish too much of a barrier for more destruction facilities from entering the market?



# Destruction Facility Requirements (Section 6.5)



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## Current Requirements / Questions

- At US destruction facilities, any upsets or exceedances of emission limits with corrective actions taken noted in a daily log and managed in keeping with the facility's startup, shutdown, and malfunction plan (SSMP)
  - SSMP is terminology from US regulation for facilities approved to destroy hazardous waste
  - In this protocol, we plan to require that any problems encountered during operation and corrective actions taken shall be noted in the daily log, as required by the facility's permit
  - Should we consider requiring some sort of SSMP-equivalent in addition to the daily log for comparable rigor? Or is this too redundant to existing Mexican regulatory/permit requirements?



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Item 5

# DOCUMENTATION REQUIREMENTS (SECTION 6)



# Documentation of Point of Origin

- Project developers are responsible for collecting data on the point of origin for each quantity of ODS

ODS	Point of Origin
Government stockpiles of virgin ODS	Location of stockpile
Used ODS stockpiled prior to February 3, 2010	Location of stockpile
Used ODS in quantities less than 500 lbs	Location where ODS is first aggregated to greater than 500 lbs
Used ODS in quantities greater than 500 lbs	Site of installation from which ODS is removed
Used ODS of any quantity recovered from end-of-life equipment	Location where ODS is recovered from end-of-life equipment

- Documentation of the point of origin of ODS shall include the following:
  - Facility name and physical address
  - For quantities greater than 500 pounds, identification of the system by serial number, if available, or description, location, and function, if serial number is unavailable
  - Serial or ID number of containers used for storage and transport
- In addition project developers must list and/or update information about the project ODS on Mexico's voluntary ODS Information Monitoring System, SISSAO, to reflect the appropriate point of origin



# Documentation of Chain of Custody

- Custody and Ownership of ODS must be established
  - Records shall include contact information of persons buying/selling ODS
  - Record options include
    - purchase orders
    - purchase agreements
    - packing lists
    - bills of lading
    - lab test results
    - transfer container information
    - receiving inspections
    - freight bills
    - transactional payment information
    - manifests (*new*)
    - other information that supports previous ownership of ODS and transfer of ownership
- In addition, project developers must list and/or update information about the project ODS on Mexico's voluntary ODS Information Monitoring System, SISSAO.

# Documentation of Point of Origin & Chain of Custody



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## Questions / Seeking Comment

- Following a review of the robust legal requirements pertaining to tracking ODS chain of custody in Mexico, the technical contractors concluded there was no elevated risk of fraud compared to the US.
- Even so, we have added a requirement to track ODS via SISSAO and suggested the use of manifests, as additional documentation.
  - Do these new requirements/options actually help reduce fraud risk? Or does the SISSAO requirement add undue burden?
- Do you agree that there is no elevated risk of fraud?
- Are the current requirements sufficient to prevent fraud? If not, what more could be done?



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# LUNCH



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Item 6

# QUANTIFICATION (SECTION 5)



# Miscellaneous Question

- Celsius vs. Fahrenheit? Pounds (lbs) to Kilograms (kgs)?
  - The protocol currently refers to quantity of ODS in pounds and temperature in Fahrenheit.
  - The Reserve's other Mexico protocols are all in Celsius, Kilograms, metric. We plan to convert all the calculations in this protocol as well.
  - However, at various times over the course of protocol development, we have heard workgroup members refer to both types of measurements, particularly referring to ODS in pounds.
  - Please confirm that the equations in these sections, as well as monitoring requirements, would be most appropriate in metric units of kilograms and Celsius.



# Quantification: Assumptions on ODS End of Life



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Refrigerant Origin	Baseline Scenario Assumption
Privately held stockpiles of used ODS refrigerant that can legally be sold to the market	Use for recharge of existing refrigeration equipment
Article 5 government stockpiles of ODS refrigerant that can legally be sold into the refrigerant market	Use for recharge of existing refrigeration equipment
Article 5 government stockpiles of ODS refrigerants that cannot legally be sold into the refrigerant market	Continued storage
Used ODS refrigerant recovered from end-of-life equipment	End-of-life release to the atmosphere

# Quantification: Substitute Refrigerants



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- Currently, protocol conservatively assumes that all substitute refrigerants are HFC-134a.
  - Based on a 2009 review of the literature for all Article 5 countries, which concluded that HFC-134a and HC-600a were the dominant substitute refrigerants being used in place of ODS in Article 5 countries.
  - As no market data was available on market share of each refrigerant at the time, protocol conservatively assumes that HFC-134a, with a higher GWP than HC-600a, is the substitute refrigerant.
- It is the Reserve's understanding that in Mexico, HFC-134a has a greater market share than HC-400a, but that propane (R290) is also used as a substitute. Is this accurate?
  - Are resources available on Mexican consumption / market share of substitutes?
- Current protocol assumptions are appropriate and conservative, but may be adjusted if resources available.

# Quantification: Project Emissions from Transportation & Destruction



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- The Reserve has determined that the standard deduction is sufficiently conservative for use in Mexico and will remain unchanged.
- The standard deduction includes:
  - CO<sub>2</sub> emissions from fossil fuel used for transporting the ODS to the destruction facility (Assumes travel of 2,000 miles by truck & 3,000 miles by ocean liner)
  - CO<sub>2</sub> emissions from fossil fuel and electricity used by the destruction facility
  - ODS emissions from incomplete destruction of ODS
  - CO<sub>2</sub> emissions from ODS oxidation during destruction
- Equations for project-specific calculations will be updated for Mexico.

# Quantification: Project Emissions from Transportation & Destruction



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- Aspects of project-specific calculations that need updating for Mexico :
  - Indirect emissions from grid electricity used at the destruction facility → the Reserve understands that Mexico (CEF?) has regional default emission factors. Can someone please provide resource?
  - Emissions from transportation of ODS is based on a calculation of CO<sub>2</sub> emissions per pound-mile traveled, based on US EPA data
    - Can someone direct us to a similar calculation in the Mexican GHG inventory?
    - Alternatively, may use IPCC defaults
- Other components of project-specific calculations do not need to be updated (emissions from fossil fuel used in the destruction facility; emissions of un-destroyed ODS; emissions of CO<sub>2</sub> from ODS oxidation)



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Item 7

# OUTSTANDING ELIGIBILITY ISSUES (SECTIONS 2 & 3)

# Regulatory Compliance

## (Section 3.5)



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Regulation	Area Covered
<b>NOM-098-SEMARNAT-2002</b>	Emissions limits for hazardous waste incineration.
<b>NOM-010-SCFI-1994</b>	Standards for measuring instruments.
<b>NOM-052-SEMARNAT-2005</b>	Hazardous waste listings.
<b>NOM-002-SCT-2011</b>	Hazardous waste transport.
<b>NOM-003-SCT-2008</b>	Hazardous waste labeling.
<b>NOM-161-SEMARNAT-2011</b>	Special management plans
<b>SEMARNAT-07-017</b>	Registration (listing) of hazardous waste
<b>SEMARNAT-07-033-A,B,C,D,F,H,I</b>	Authorizations for handling hazardous waste (including incineration)
<b>SEMARNAT-07-029</b>	Authorization for export/import hazardous waste



# Performance Standard (Section 3.4.2, Appendix B)

- In 2009, the Reserve evaluated whether destruction of ODS was common practice in Article 5 countries, including Mexico, using a 2009 UNEP Report on destruction data from Article 5 countries
- At the time, the Reserve determined that destruction of CFC refrigerant from Mexico and other Article 5 countries **is not** common practice, however, we would like to update this research (and Appendix B) with more recent Mexico-specific resources, if available.
- Are there any recent reports or other data resources with data on destruction of ODS in Mexico?



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Item 8

# DISCUSSION OF ISSUES FLAGGED BY WORKGROUP





# Issues to discuss

- Including Foams
- Including Private Virgin ODS stockpiles (perhaps for a limited window of time after protocol adoption)
- Verifiers' use of professional judgement for verifying certain aspects of the protocol (Section 8)



# Foams (Section 2.3)

- Currently, the protocol explicitly excludes foams
- Foams were not included in the Article 5 protocol for a couple reasons, the most significant due to a lack of data to set a baseline (data on end of life) and develop performance standard (data on destruction of foams).
- However, the Reserve is willing to include if this data is forthcoming for Mexico
  - Do workgroup members have additional comprehensive data on end of life fate of foams in Mexico?
  - Do we need to be concerned about leaks while extracting the ODS from foams? If so, are there any applicable regulatory safeguards here?

# Private Virgin ODS Stockpiles (Section 2.4)



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- Currently, the protocol explicitly excludes private stockpiles of virgin ODS
- At the beginning of the A5 protocol, the Reserve allowed for 6 months of destruction to allow for destruction of existing stockpiles.
- Our concern in 2010 had been related to ongoing production and laundering/importing illegally from countries where CFC could still be produced.
  - 5 years post-phase-out, can we consider allowing for this? Perhaps another short 6-month window?
- There seem to be private virgin stockpiles in Mexico that would fall into this category, but the Reserve still has concerns about fraud, as well as the reasons these stockpiles exist .
  - What type of volume of stockpiles are we talking about?
  - Why are these stockpiles not being sold into the CFC market?
  - Are they not allowed to be sold for some reason? Are they imported illegally?
  - If the Reserve allowed 6-12 months of eligibility at the beginning, do workgroup members have (or know of) projects that would be forthcoming?



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Item 9

# NEXT STEPS



# Next steps

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Reserve staff responds to and incorporates public comments; finalizes protocol	March 2015
Adoption of the Protocol by the Reserve's Board of Directors	April 2015



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<http://www.climateactionreserve.org/how/protocols/mexico-ozone-depleting-substances-project-protocol/>



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# ADJOURN

