Greenhouse Gas Reporting Program

Subpart RR: Geologic Sequestration of Carbon Dioxide



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Updated 2/8/12

For a copy of these slides, visit: <u>http://www.epa.gov/climatechange/emissions/training.html</u>

Outline

- Overview and Schedule
- Electronic Greenhouse Gas Reporting Tool (e-GGRT)
- Summary of Subpart RR requirements
 - Applicability
 - Submissions due prior to annual reporting

Overview of Subparts RR and UU

- EPA has finalized greenhouse gas (GHG) reporting mechanisms for facilities that conduct geologic sequestration (subpart RR) and all other facilities that inject carbon dioxide (CO₂) underground for enhanced oil and gas recovery or any other purpose (subpart UU).
 - Proposal signed on March 22, 2010.
 - Final rule signed on November 22, 2010.
- This rule is complementary to and builds on EPA's Underground Injection Control (UIC) permit requirements
- On November 9, 2011 EPA finalized Technical Corrections, Clarifying and Other Amendments to seven subparts, including RR and UU.

Geologic Sequestration of Carbon Dioxide (Subpart RR)

- Facilities that conduct geologic sequestration by injecting CO₂ for long-term containment in subsurface geologic formations are required to:
 - Report basic information on CO₂ received for injection.
 - Develop and implement an EPA-approved site-specific monitoring, reporting, and verification (MRV) plan.
 - Report the amount of CO_2 geologically sequestered using a mass balance approach and annual monitoring activities.
- All facilities that hold a UIC Class VI permit must report under Subpart RR.

Geologic Sequestration of Carbon Dioxide (Subpart RR)

- Facilities that conduct enhanced oil and gas recovery are not required to report geologic sequestration under Subpart RR unless
 - 1. the owner or operator chooses to opt-in to Subpart RR or,
 - 2. the facility holds a UIC Class VI permit for the well or group of wells used to enhance oil and gas recovery
- R&D projects will be granted an exemption from Subpart RR provided they meet the eligibility requirements

Injection of Carbon Dioxide (Subpart UU)

- Under Subpart UU, all facilities that inject CO₂ underground for purposes besides geologic sequestration, such as for enhanced oil and gas recovery or any other purpose, are required to report basic information on CO₂ received for injection.
- Geologic sequestration R&D projects that receive an exemption from Subpart RR are required to report under Subpart UU.

Subpart RR Submissions

- Registration and Certificate of Representation (COR) for each facility
- One of the following:
 - Proposed Monitoring, Reporting, and Verification (MRV) plan
 - MRV plan extension request
 - R&D project exemption request
- Annual reports (starting in 2012 for data collected in 2011)

Use e-GGRT for facility registration and submissions



Subpart RR Submissions Schedule

- 1. Register your facility and submit your Certificate of Representation 60 days before making a submission under Subpart RR.
- 2. Submit a proposed MRV plan, MRV plan submission extension request (up to 180 day extension), or R&D project exemption request through e-GGRT by the following deadlines:

Facility issued UIC permit on or before December 31, 2010

 Submit MRV plan, MRV plan extension request, or R&D project exemption request by June 30, 2011

Facility issued UIC permit on or after January 1, 2011

 Submit MRV plan, MRV plan extension request, or R&D project exemption request within 180 days of receiving final UIC permit

Electronic Greenhouse Gas Reporting Tool (e-GGRT)



For more information



On the GHG Reporting Program:

http://www.epa.gov/climate/climatechange/emissions/ghgrulemaking.html

On the GHG Data System: http://www.ccdsupport.com

Contact Us:

http://www.epa.gov/climate/climatechange/emissions/ghgrule_contactus.htm

Organization Type*: My question		On 'Contact Us' page GGRT for data system	selecte- n questions
concerns*:	Reporting System Question e-GGRT (electronic GHG Reporting Tool) Rule Related Question 0 40 CFR part 98 (Final rule published on 10/20/2009)		
	 Proposed Rule (New rules and amendments proposed in 2 	:010)	11

Overview

- Purpose of this portion of the webinar
- About e-GGRT
- e-GGRT user registration
- e-GGRT facility/supplier registration
- Registering Designated Representatives (DR), Alternate Designated Representatives (ADR) and Agents
- Questions & Answers

About Today's Webinar

- Today, we will explain how reporters will register in e-GGRT to submit the Certificate of Representation
- We will NOT discuss how facilities and suppliers will use e-GGRT to create and submit annual GHG reports

 This will be discussed in future webinars
- We will not be discussing ...
 - Applicability Determinations
 - GHG emission calculations
 - Proposed rulemakings

About e-GGRT

- Web-based system
 - Will guide reporters through data entry and submission
 - Built-in calculations
- Reporters may choose to format their annual GHG report according to the e-GGRT XML schema
 - These reporters must meet the same registration and submission deadlines as all other reporters

About e-GGRT

- All data is submitted to EPA electronically in e-GGRT
 - Except the one-time Electronic Signature Agreement (ESA) which is submitted on paper
- e-GGRT supports <u>reporting</u> required under Part 98
 - e-GGRT does NOT support <u>record keeping</u> requirements under Part 98

About e-GGRT



• System Requirements

- Internet Explorer 7+ or Firefox 3+
- Javascript enabled in the browser
- Transport Layer Security (TLS) enabled in the browser
- PDF reader (e.g. Adobe Reader)
- Access to printer (for Electronic Signature Agreement)
- Access to the Internet
- Personal (private) email account
- E-GGRT performs a browser test and will redirect to these pages if you fail
- E-GGRT enforces a ten-minute inactivity timeout.

Your browser does not fulfill the *e-GGRT* system's browser compatibility requirements

The following browser versions are supported

- Microsoft Internet Explorer 7.0 (or above) <u>Go to Download website</u>
- + Mozilla Firefox 3.0 (or above) $\underline{Go \text{ to Download website}}$

Your current Browser is Microsoft Internet Explorer v6.0

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Your browser does not fulfill the e-GGRT system's browser compatibility requirements.

Reason: JavaScript is disabled on this browser.

Solution: You must enable JavaScript on this browser before you can use e-GGRT. Instructions for enabling JavaScript are provided below. After you have enabled JavaScript, refresh this page.

Internet Explorer (7.0 and 8.0)

- 1. Select 'Tools' from the top menu
- Choose 'Internet Options'
 Click on the 'Security' tab
- Click on the 'Security' ta
 Click on 'Custom Level'
- Scroll down until you see section labeled 'Scripting'
- 6. Under 'Active Scripting', select 'Enable' and click OK

Mozilla Firefox (3+)

- 1. Select 'Tools' from the top menu
- 2. Choose 'Options'
- Choose 'Content' from the top navigation
 Select the checkbox next to 'Enable JavaScript' and click OK

User Registration: Getting Started

- Information you will need includes:
 - Name
 - Mailing address
 - Email address
- If you are an EPA Central Data Exchange (CDX) user:
 CDX User Name and Password
- If you are a CAMD Business System (CBS) reporter:
 CBS User Name and Password





User Registration: Login Page

Context sensitive help on every page

United States Environmental Protection

🕜 e-GGRT Help

Welcome to EPA's electronic Greenhouse Gas Reporting Tool

About e-GGRT

EPA's electronic Greenhouse Gas Reporting Tool (e-GGRT) supports facility and supplier reporting for the Mandatory Reporting of Greenhouse Gases Rule. The rule requires electronic reporting of greenhouse gas (GHG) emissions from large sources and suppliers in the United States,

Additional information on e-GGRT

e-GGRT LOGIN
User name:
Password:
LOGIN

e-GGR

Electronic Greenhouse Gas Reporting Tool

Forgot your User name or Password?

New e-GGRT Users Must Register New users must complete a one-time registration process. After establishing a user account you can register your facility.

NEW USER REGISTRATION

You are already registered if...

You have a CDX Account If you have an existing CDX Web account, login above with your CDX Username and Password. If you have a CDX account then log in with your CDX credentials here

at the e-GGRT login page:

As a new e-GGRT user you will start

https://ghgreporting.epa.gov

Otherwise, click the green NEW USER REGISTRATION button

Warning Notice

EPA's e-GGRT Registration procedure is part of a United States Environmental Protection Agency (EPA) computer system, which is for authorized use only. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be monitored, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including law enforcement. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

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User Registration: On-Screen Directions

About the e-GGRT One-tim

SHOULD YOU REGISTER TO USE e-G

You will need to create an e-GGRT user a Facility or Supplier affected by EPA's

If you are uncertain, the Applicability Too is required to report greenhouse gas (GH to Suppliers and other affected entities c

Environmental Protection

USER REGISTRATION

🕜 e-GGRT Help



On-screen directions will guide you through the user registration process.

→ Most e-GGRT pages allow you to freely navigate and come back later to complete them. New user registration, however, requires you to complete the four steps in one session.

User Registration Process	
① Create User Profile	Enter identifying information (name, address, contact information); set your username, password, and a secret password reset question.
Pick Challenge Questions	Pick, and supply answers to, five challenge questions. You will be asked one of these questions anytime you certify and sign a submission in e-GGRT.
Electronic Signature Agreement	Print the Electronic Signature Agreement (ESA). Sign the form, then mail or courier to EPA.
	You will not be able to use e-GGRT until EPA has received and processed this paper agreement with your signature.
Print Summary	Print the summary of your registration for your records. If you have questions regarding your registration, including the status of your ESA, you can refer to this document.
Start Using e-GGRT	EPA will not activate your account until your ESA has been received and processed. An account activation notice will be sent to the email address you used for registration. You will then be able to use e-GGRT.
BEGIN REGISTRATION	

User Registration: Your User Profile United States Environmental Protection Agency **2-**666 Electronic Greenhouse Gas USER REGISTRATION Reporting Tool (?)e-GGRT Help User Profile Challenge Questions Print Summary Signature Agreement Help with User Registration YOUR USER PROFILE By completing and saving this form you will establish your e-GGRT u Please note the following when NOTE: You will not be able to return to this screen, so please double filling out your profile: information before you save. Profile information will be used on the **Certificate of Representation** Title* Ms. (if you are a DR or ADR) First Name* Jane or Notice of Delegation Middle Initial (if you are an Agent) Last Name* Small Suffix ~ Select ADDRESS INFORMATION Organization (Employer)* Smalltown Carbon Mailing Address Line 1* 123 Main Street Mailing Address Line 2 City* Small ill

User Registration: On-Screen Directions

CONTACT INFORMATION Email * Re-enter Email * Phone Number * Phone Extension FAX	jsmall@sc.com jsmall@sc.com 123-456-7890	Throughout the registration process on- screen directions and validation messages will provide help		
USER NAME & PASSWORD User Name*	Your user name may not contain spaces or symbols. Do not begin your user name with a number.			
Password* Confirm Password*	Your password must be at least 8 characters long and contain at least one number, but do not start with a number, Do not use spaces or symbols in your password. Your F user name should not be part of your password.			
Secret Question* Secret Answer* CANCEL SAVE	Your secret question a have forgotten your use relevance to you and b kryptonite	tion and answer is used to authenticate you in situations where you and bas an The Secret Question and A are used if you need to reso your password. Store this information securely.		

User Registration: Challenge Questions

United S EPA United S Environd Agency USER REGISTRATION	States mental Protection		Challenge Questions and Answers later to support Electronic
e-GGRT Help Help with User Registration	User Profile Challenge Ques YOUR FIVE CHALLENGE QU Select and answer five differen a submission, you will be pro	tions Signature Agreement PrintSummary UESTIONS Int Challenge Questions. When you use e-GGRT to sign mpted to correctly answer one of these questions.	Signatures so keep them stored securely.
	-CHALLENGE QUESTIONS Question 1* Answer 1*	What is the first and middle name of your oldest sibling?	
	Question 2* Answer 2* Question 3*	What is your favorite pet's name?	▼
	Answer 3* Question 4*	What is your favorite TV show?	
	Question 5*	Where did you first meet your spouse?	
	SAVE		

/ E-GGRT will use

User Registration: Electronic Signature Agreement

SEPA United St Environm Agency	Signature	
USER REGISTRATION		Reporting Tool
e-GGRT Help	User Profile Challenge Questions Signature Form Print Summary	You can al as a PDF fi
	 YOUR ELECTRONIC SIGNATURE AGREEMENT (ESA). You will not be able to use e-GGRT functionality until EPA receives this paper form. Please allow 10 business days for processing. Print: Your Electronic Signature Agreement Form Read your form Sign and date your form Mail your form to: e-GGRT Help Desk SAIC 8301 Greensboro Drive, Mail Stop E-11-2 McLean, VA 22102 Wait for EPA to receive your form, after which you will receive an account activation notice by email and can begin using e-GGRT. 	
		eGGRT RY2010.6.8 UA2-4

On this final page you can print out your Electronic Signature Agreement.

You can also save a copy as a PDF file.

User Registration: Electronic Signature Agreement

Electronic Signature and Use Agreement



User Registration: Electronic Signature Agreement Approved!



Notifications from e-GGRT will be sent to the email address in your user profile.

Make sure your email accepts mail from eggrt@ccdsupport.com



e-GGRT: EFA has received your ESA - You can now GHGreporting to: Peter Kokopeli Please respond to Reply

For questions about the GHG Reporting Program or e-GGRT, contact EPA at GHGMRR@epa.gov

A Notice from EPA's electronic Greenhouse Gas Reporting Tool

EPA has received your e-GGRT Electronic Signature Agreement (ESA) form.

You may now login and begin to use e-GGRT, including registering facilities or suppliers, and accepting e-GGRT invitations to be a Designated Representative or Agent.

If you believe you received this message in error, or have questions, please contact the Help Desk at Monday through Friday during regular business hours.

20019 21220

Registering A Facility



Log-In to e-GGRT at: https://ghgreporting.epa.gov

Facility Registration



Facility Registration

Facility Registration

HOME FACILITY REGISTRA	TION FACILITY MANAGEMENT		E	lectronic Greenhouse Gas Reporting Tool Hello, K C My Profile Logout	1	
e-GGRT Help	Carbon Emitters Factory	0	-		1000	
Help with Facility Registration	Search Facility Info Appoi WHO ARE THE DR AND ADD Each e-GGRT facility is requi Representative (DR). The DR submissions to EPA. The DR Representative (ADR) to act of	nt DR & ADR Setup Agents Co R? red to have one, and only one, Desi will certify and sign the Facility or S can appoint one, and only one, Alt on behalf of the DR.	onfirm & Submit Ignated Supplier's ernate Designated	Grey boxes in provide expla may also click time for more	e-GGRT Inatory text. CHELP at ar info.	You iy
	After EPA reviews the registra and ADR with instructions on	ation, e-GGRT will send an e-mail in how to accept their role for this fac	witation to the DR ility. * der	notes a required field		
	DESIGNATED REPRESENTAT Who will be the DR for* this Facility or Supplier?	IVE (DR) ● I will be the DR ● I want to appoint a DR.	You ca someo	n appoint yours ne else. EPAw	self as DR or ill review all	
	First Name *	John		illinents		
	Last Name *	Smith]			
	Middle Initial		1			
	Phone*	202-123-4567				1
	Re-enter E-mail*	JohnSmith@CarbonHQ.com	Thee	mail will be use	d by e-	
	ALTERNATE DESIGNATED RE Who will be the ADR for* this Facility?	EPRESENTATIVE (ADR)	GGRT appoi	to invite the DF intee to accept t	R heir role.	
	Eiret Name *		ADRs can be appointed after r		infe here	
	Last Name*	Doe		inter the ADR's	into nere,	
	Middle Initial		1	applicable. An	ADR can	
	Phone*	240-123-4567		iso be added at	alater	
	E-mail*	JaneDoe@CarbonHQ.com		me but must be		
			a	pproved by the	DR	30

Appointments and Invitations: DR & ADR

Appointments and Invitations: Agent(s) 3 APPOINTEE 1) 2 **EPA SET UP RECEIVES** email **APPROVES &** USES code AGENT(S) **E-GGRT sends email** To ACCEPT Role 4 DELEGATOR **RECEIVES** email **REVIEWS Agent** Delegation DELEGATOR Signs Notice of Delegation

Using an Invitation Code

		ates nental Protection			
	HOME FACILITY REGISTR/	ATION FACILITY MANAGEMENT	DATA REPORTING	REPORTS	Reporting Tool
					Hello, Peter Kokopeli My Profile Logout
	e-GGRT Help	FACILITIES PENDING REGIS	TRATION:		ACCEPT AN INVITATION:
	About e-CCRT Home	Facility or Supplier	Your Role	Registration Status	Responding to a Facility Invitation?
	About e-GGRT Home	VANGUARD CORP	REGISTRAR	Pending	Paste the Invitation Code into the field
		REGISTER A FACILITY			below, then click 'GO' 94C3E807C81CEDA2B2490 GO
		YOUR FACILITIES:			
		Facility or Supplier		Your Role	e-GGRT Announcements
		ACME STEEL		DR	2010-09-01 08:00:00.0
		1			For more information, tutorials and
Home and r	e Page lists facilitie ole	s	After an API an email inv ROLE, he or	POINTEE rece ritation for a r she can log in	ives FAQs click the e-GGRT Help link on this page. See the GHG Reporting Program website for training opportunities.
			invitation co	o paste the ode into this be	eGGRT RY2010.6.8 UA1-2

Accepting the Appointment

If you accept the role, you w Representation (COR) in the	ill digitally sign and submit a Certificate of screens that follow.	denotes a required field
You have been identified by Pe ANYREPORTER 123 Main Street	eter Kokopeli as the Designated Representative (DR) for	
Do you accept this* appointment?	Yes ⊙ No	
lf you do not accept, please explain		
Peter Kokopeli suggested the Uncle JOE 202-123-4567 Joe.Uncle@mail.com	following person as your Alternate Designated Represer	ntative for this facility:
Do you confirm the ADR* appointment?	 Yes No — change the ADR appointment (note, this option only applies when an ADR was appoint on NOT appoint an ADR at this time 	ointed)
NEXT		
		eGGRT RY2010.6.8 FR3-4

Certificate of Representation

Fac	cility or Supplier Name	STEVE SHOP
	Address	6251 SIDE ROAD REDDING CA, 96001
	Owners and Operators	Steve Trout;
		EDIT Facility Information
REF	PRESENTATIVE INFORM	ATION
	Designated Representative	Peter Kokopeli 1200 Pennsylvania Ave, NW Washington DC, 22222
		2023439085 kokopeli.peter@epa.gov
CEF	RTIFICATION STATEMEN	rs
refully review the		I certify that I was selected as the designated representative or alternate designated representative, as applicable, by an agreement binding on the owners and operators of the facility or supplier, as applicable.
ertification Statemen	nts.	I certify that I have all the necessary authority to carry out my duties and responsibilities under 40 CFR part 98 on behalf of the owners and operators of the facility or supplier, as applicable, and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.
at <mark>e</mark> ments can als <mark>o k</mark>	be de la constante	I certify that the owners and operators of the facility or supplier, as applicable, shall be bound by any order issued to me by the Administrator or a court regarding the facility or supplier.
Ind in Section 98.4	of	If there are multiple owners and operators of the facility or supplier, as applicable, I certify that I have given a written notice of my selection as the 'designated representative' or 'alternate

Facility Summary

MY FACILITIES	RATION FACILITY MANAGEMENT			Re	eporting Tool , Elijah My Profile Logout
e-GGRT Help About Facility Management	DeMasi Carbon Services, Inc <mark>Facility Summary</mark>				
Sequestration of Carbon Dioxide	E-GGRT FACILITY SUMMARY From this summary page, depend "Facility Profile" information, the f (DR) and Alternate Designated Re DR or ADR.	ling upon your role, you can make c acility's representatives Designated epresentative (ADR), and to your Ag	hanges to the Representative ents if you are a	Certificate of Re and Complete: required by the fa	presentation Signed No further action is cility representatives.
	Facility Representatives			🗎 Certificate of R	epresentation
	Designated Representative	Anthony Valinote	CHANGE	Agent (for this fa	cility) for
	Alternate Designated Representative	none	CHANGE	none	appointed
	Facility Profile			- Had Hight	
		A LTest Escility N/	EDIT		
	Facility Information	123 Test Street Falls Church VA 22043			

Subpart RR Start Page

e-GGRT Support

- E-GGRT Help Desk will be able to answer questions and provide support to e-GGRT users
- Telephone: 1-877-444-1188

GHGREPORTING@epa.gov[e-GGRT] GHGMRR@epa.gov[RULE]

• URLs:

• Email:

www.ccdsupport.com [Help] https://ghgreporting.epa.gov [e-GGRT]

Before you Contact the e-GGRT Help Desk

• Can I login to e-GGRT using my CAMD Business System user name and password?

No. You can, however, use your CDX user name and password to login to e-GGRT.

- **How do I reset my CDX password?** If you have not yet logged into e-GGRT and you need to reset your CDX password, go to https://cdx.epa.gov/SSL/cdx/login.asp. The "Forgot Password" link on the e-GGRT home page will not work unless you have successfully logged into e-GGRT at least once.
- **Can I reuse my CAMD Business System Electronic Signature Agreement, or do I need to mail in a new one?** If you already have an Electronic Signature Agreement on file with the CAMD Business System, e-GGRT can reuse it if you provide your CAMD Business System user name and password when requested during user registration, and no additional Electronic Signature Agreement is needed

e-GGRT Help Site www.ccdsupport.com

		V.C. 36
Home		
Welcome to e-GGRT Help		
This site contains news, tutorials, FAQs, help and ot	her information about e-GGRT.	
e-GGRT News	Learn about e-GGRT	Pelp
Latest News	<u>Getting Started</u> <u>Tutorials</u> <u>Registration Instructions</u> <u>E-GGRT XML Reporting Schema</u>	 <u>About GHG Reporting Program</u> and Part 98 <u>FAQs</u> <u>Known Issues</u> <u>Contact Us</u>
<u>Program</u> <u>GHGRP Rulemaking Notices</u> <u>E-GGRT Webinars</u> <u>GHG Rulemaking RSS Feed</u>		

Additional Information

Questions?

Subpart RR Topics for Today

- Applicability
 - Who is subject to Subpart RR?
- Submission due prior to annual reporting
 - R&D Project Exemption Request OR
 - Proposed Monitoring, Reporting, and Verification (MRV) Plan

Applicability: Which Facilities Must Report Under Subpart RR?

- Subpart RR source category includes:
 - Any well or group of wells that inject a CO₂ stream for longterm containment in subsurface geologic formations
 - All wells permitted as UIC Class VI wells
- Facilities that conduct enhanced oil and gas recovery are not required to report geologic sequestration under Subpart RR unless
 - 1. the owner or operator chooses to opt-in to Subpart RR or,
 - 2. the facility holds a UIC Class VI permit for the well or group of wells used to enhance oil and gas recovery

Facilities that report under Subpart RR are not required to report under Subpart UU

R&D Project Exemption Request Process Overview

Note: EPA decision may be appealed by an interested person to EPA Environmental Appeals Board

R&D Exemption Request Submission Page (example)

SEPA United St Environm Agency	ates iental Protection		e-GGRT 🛹
HOME FACILITY REGISTR	ATION FACILITY MANAGEMEN	T DATA REPORTING	Electronic Greenhouse Gas Reporting Tool
MY FACILITIES	SUMMARY		Hello, Elijah My Profile Logout
e-GGRT Help Link to a relevant PDF Resources by Subpart: Subpart:	DeMasi Carbon Services Subpart RR: Geolog Facility Summary » Subpart R	, Inc. (2010) gic Sequestration of Carb R Overview » R&D Project Exemption I	on Dioxide Request
Support RK	R&D EXEMPTION REQUES	Т	
	Geologic sequestration resea exemption from subpart RR. must complete the form belo	arch and development (R&D) projects will To receive a subpart RR R&D exemption w, then SUBMIT and CERTIFY.	Web form for R&D project exemption requests.
	R&D PROJECT EXEMPTION I	REQUEST	
	Name of Project*	DeMasi Carbon Services, Inc.	
	CO2 injection (for R&D) Start Date		
	CO2 injection (for R&D) End Date		
	Research Purpose		.::
	Source and type of funding		
	Class of Underground Injection Control permit	Select	v
	Underground Injection Control permit Start Date		
	Underground Injection Control permit End Date		
	Tacility Summary	ELSAVE	
	SUBMIT and CERTIFY R&D P	ROJECT EXEMPTION REQUEST	
	If you have completed and ar includes applying your electr SUBMIT and CERTIFY	e satified with your R&D Exemption Req onic signature (entering your password a	uest you may proceed to certify and submit. This process nd answering a challenge/security question).

R&D Project Exemption

- R&D projects will be granted an exemption from Subpart RR provided they meet the eligibility requirements
- A project is eligible for the exemption if it meets the Subpart RR definition of R&D project:
 - a project for the purpose of investigating practices, monitoring techniques, or injection verification, or engaging in other applied research, that will enable safe and effective long-term containment of a CO_2 stream in subsurface geologic formations, including research and short duration CO_2 injection tests conducted as a precursor to long-term storage
- R&D project exemption requests must be submitted using the webform that is provided in e-GGRT.
- **NOTE**: Projects receiving a Subpart RR R&D exemption report under Subpart UU.

R&D Project Exemption Request Content

- A submission in support of an exemption as an R&D project must contain the following information:
 - The planned duration of CO_2 injection for the project
 - The planned annual CO_2 injection volumes during this time period
 - The research purposes of the project
 - The source and type of funding for the project
 - The class and duration of UIC permit or, for an offshore facility not subject to the Safe Drinking Water Act, a description of the legal instrument authorizing geologic sequestration

R&D Project Exemption Request Content

- The research purpose in the reporter's request provides a key piece of information on which EPA will base its decision to grant or deny the R&D exemption request.
 - EPA encourages reporters applying for an exemption to provide detailed information about the research purpose.
 - Examples:
 - Description of monitoring technologies tested at the GS project
 - Citations for published research at the site, if they exist
 - How the research is moving the science of monitoring GS sites forward
 - Description of the short-term injectivity testing, if this is the purpose of the exemption request
- Other aspects of the submission also provide relevant information on the project
 - For example, the estimated duration the project will aid in determining the length of time of the exemption

MRV Plan Review Process Overview

(1) EPA decision may be appealed by an interested person to EPA Environmental Appeals Board (2) MRV plan resubmittals follow the same process

MRV Plan Submission Page (example)

HOME FACILITY REGIST	RATION FACILITY MANAGEMENT DATA REPORT	NG	Electronic Greenhouse Gas Reporting Tool Hello, Elijah My Profile Logout
e-GGRT Help Link to a relevant PDF Resources by Subpart. Subpart RR	DeMasi Carbon Services, Inc. (2010) Subpart RR: Geologic Sequestr Facility Summary » Subpart RR Overview OVERVIEW OF SUBPART RR The MRR requires reporting of greenhouse gase carbon dioxide underground for geologic seques Subpart RR deadlines for submitting a Proposed Verification (MRV) Plan (or extension request) of project exemption request can be found using the on the left.	ration of Carbon Dioxide s (GHGs) from facilities that inject tration (GS). If you are subject to d Monitoring, Reporting, and r Research and Development (R&D) he e-GGRT Help and information links	
	Name of Project none ADD a R&D Project Exemption Request MRV PLAN EXTENSION REOUEST Name of Project none ADD a MRV Plan Extension Request MRV PLAN MRV PLAN MRV Plan Submission none UPLO To submit (or resubmit) an MRV Plan, please UF must proceed to SUBMIT and CERTIFY the plan password and answering a challenge/security q	Certified Date Uploa Lipfile Certified Date Certified Date Certified Date Certified Date DLOAD the entire contents of your MR n, a process that includes applying you uestion).	Status d MRV plan as a single a, submit, and certify. Status V Plan as a single ZIP file. After upload you ur electronic signature (entering your

MRV Plan Submission Extension Request (example)

Contents of MRV Plan

- 1. Delineation of the maximum monitoring area (MMA) and active monitoring areas (AMAs)
- 2. Identification of potential surface leakage for pathways in the MMA
- 3. A strategy for detecting and quantifying surface leakage of CO₂
- 4. A strategy for establishing the expected baseline for monitoring CO_2 surface leakage
- 5. Site-specific variables for the mass balance equation
- 6. Well identification number(s)
- 7. Proposed date to begin collecting data for calculating total amount sequestered (Equations RR-11 and RR-12)
 - Date must be after expected baselines are established and the leakage detection and quantification strategy is implemented in the initial AMA

1. Monitoring Areas

- Maximum monitoring area is the area expected to contain the free phase CO₂ plume until the CO₂ plume has stabilized plus an all-around buffer zone of at least one-half mile
- Active monitoring area is the area that will be monitored over a specific time interval from the first year of the period (n) to the last year in the period (t).
 - This allows operators to phase in monitoring so that during any given time interval, only that part of the MMA in which leakage might occur needs to be monitored.

2. Potential Leakage Pathways

- MRV plan must identify the likelihood, magnitude, and timing of potential leakage from each pathway
- Example pathways:
 - Wells
 - Injection well(s)
 - Monitoring wells
 - Active/abandoned oil and gas wells
 - Faults, fractures, and bedding plane partings
 - Confining zone competency, extent and dip

3. Surface Leakage Detection, Verification, and Quantification Strategy

- Detection
 - Leakage detection systems may include continuous measurements and/or regular periodic surveys (e.g. water chemistry, airborne surveys, mechanical integrity testing)
 - Detection capability should be described in the MRV plan
- Verification
 - Leakage verification allows reporter to confirm the location and source of leakage that has been detected
 - MRV plan may describe the methods and criteria for determining how an anomalous reading or condition will be evaluated to determine if it represents a leak, and to verify the location and source of the leak
- Quantification
 - MRV plan must include a discussion of how leaks will be quantified once they are detected and verified
 - Multiple monitoring technologies and quantification techniques can address different leakage pathways and leakage calculation methods

4. Strategy for establishing the expected baseline

- Expected baselines allow the reporter to discern whether the results of monitoring are attributable to leakage of injected $\rm CO_2$
- Parameters may be environmental such as subsurface pressure, soil flux rates, etc., or operational, such as the injection pressure and the annular pressure in the well
- The MRV plan should describe how the baselines will be determined and how they could be used to detect monitoring anomalies

5. Entrained CO₂ in produced fluids

- Fluids produced at GS facilities may contain CO2 that is not captured in the gas phase CO2 measurement downstream of the gas-liquid separator
 - Dissolved gas in the oil or water phase of the produced fluids
 - Dissolved in water extracted from the injection zone
- Equation RR-9 describes the mass balance of CO2 at the gas-liquid separator including amount of CO2 in the produced oil and water
 - In the MRV plan, the reporter should estimate the percentage of entrained CO2 in produced oil or other fluid
 - For example, this can be determined using industry standard laboratory analyses

When Are Annual Reports Due?

- Subpart RR
 - Submit annual reports to EPA in 2012 reporting basic information on CO_2 received in 2011.
 - Once EPA-approved MRV plan is implemented, add data to annual reports on the amount of CO₂ that is geologically sequestered based on mass balance approach and annual monitoring activities.
- Subpart UU
 - Submit annual reports to EPA in 2012 reporting basic information on CO_2 received in 2011.

For More Information

- Subpart RR Information and Help
 - <u>http://www.epa.gov/climatechange/emissions/subpart/rr.html</u>
 - Email: GHGMRR@epa.gov
- e-GGRT Information and Help
 - <u>http://www.ccdsupport.com</u>
 - Email: GHGreporting@epa.gov
- GHG Reporting Program Information:
 - <u>http://www.epa.gov/climate/climatechange/emissions/ghgrulemaking.html</u>