

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

MONTEZUMA NORCAL CARBON SEQUESTRATION HUB

Facility Information

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IW-1A

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Sec 22 T 3 N R 1 E

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

Table of Contents

H.1	Summary	4
H.2	Local Resources and Infrastructure	4
H.3	Potential Risk Scenarios.....	7
H.4	Emergency Identification and Response Actions.....	7
H.4.1	Well Integrity Failure	7
H.4.2	Injection Well Monitoring Equipment Failure	9
H.4.3	Potential Brine or CO ₂ Leakage INto USDW or UP to the Surface.....	10
H.4.4	Natural Disaster (Except Earthquakes)	11
H.4.5	Earthquake: Induced or Natural Seismic Event.....	12
H.5	Response Personnel and Equipment.....	15
H.6	Emergency Communications Plan	16
H.7	Plan Review.....	17
H.8	Staff Training and Exercise Procedures.....	17

List of Tables

Table H-1. Degrees of Risk for Emergency Events.....	7
Table H-2. Response to Seismic Events	14
Table H-3. Contact information for Key Local, State, and Other Authorities.....	15

List of Figures

Figure H-1. Map of the Site Resources and Infrastructure.....	6
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SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

List of Appendices

Appendix H-1. Oil & Gas Legacy Wells

Appendix H-2. Water Wells

List of Acronyms and Abbreviations

AoR = area of review	O&G = oil and gas
CO ₂ = carbon dioxide	PISC = Post-Injection Site Care
ERRP = Emergency and Remedial Response Plan	PSET = passive seismic emission tomography
ft = feet	UIC = Underground Injection Control
GSDT = Geologic Sequestration Data Tool	US EPA = United States Environmental Protection Agency
MC = Montezuma Carbon, LLC	USDW = Underground Source of Drinking Water
M _w = magnitude	

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

H.1 SUMMARY

Montezuma Carbon, LLC (MC) shall take actions to address movement of the injection fluid or formation fluid in a manner that may endanger an Underground Source of Drinking Water (USDW) during the Construction, Injection, or Post-Injection Site Care (PISC) periods.

If MC obtains evidence that the injected carbon dioxide (CO₂) stream and/or associated pressure front may cause an endangerment to a USDW, MC must perform the following actions:

1. Initiate shutdown plan for the injection well IW-A1.
2. Take all steps reasonably necessary to identify and characterize any release.
3. Notify the United States Environmental Protection Agency (US EPA) Region 9 Underground Injection Control (UIC) Program Director, David Albright, of the emergency event in writing within 24 hours with detailed information about the endangerment
4. Implement applicable portions of the approved Emergency and Remedial Response Plan (ERRP).

Where the phrase “initiate shutdown plan” is used, the following protocol will be employed: MC will immediately cease injection. However, in some circumstances, MC will, in consultation with the US EPA UIC Program Director, determine whether gradual cessation of injection (using the parameters set forth in the Summary of Requirements of the Class VI permit) is appropriate.

H.2 LOCAL RESOURCES AND INFRASTRUCTURE

Resources in the vicinity of the MC project site, within the preliminary, structurally controlled area of review (AoR), that may be affected as a result of an emergency event at the project site include:

- Class I through Class V Wells: There are no active Class I through Class V wells located within the areal extent of the AoR.
- Oil & Gas (O&G) Wells/Deep Boreholes: There are several identified oil and gas fields controlled by the subsurface geology and structures near or with the AoR (Figure H-1). The public records for active and legacy oil and gas wells within the AoR are summarized in a table in Appendix H-1. The evaluation of these O&G wells is presented in the Area of Review and Corrective Action Plan and includes a recommendation for which of the legacy plugged and abandoned O&G wells are candidates for further evaluation and potential corrective action.
- State- or US EPA-approved subsurface Clean-up Sites: MC searched public databases and found no records for State- or US EPA-approved subsurface clean-up sites within the areal extent of the AoR.

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

However, the Concord Naval Weapons Station and Travis Air Force bases Superfund sites are located outside the AoR toward the southwest and north, respectively.

- Surface Bodies of Water and Tidal wetlands: Montezuma Slough borders the west side of the Montezuma property, an un-named slough is located at the southeast corner of the Montezuma property, and the Sacramento River borders the southside of the property. Sherman Lake is located in between the Sacramento and San Joaquin Rivers at the west end of Sherman Island. These surface water features near the mouth of the delta formed by these two rivers do experience tidal fluctuations and saltwater encroachment. Also tidally influenced saltwater wetlands are present along the western and southern boundary of the project site near Honkers Bay and Brown Island. Also, the Montezuma wetlands restoration occurs along the southeastern corner of their property. Portions of each of these surface water bodies, and tidal wetlands occur within the areal extent of the AoR.
- Springs: MC searched public records and found no evidence of springs within the areal extent of the AoR.
- Mines and Quarries: MC searched public databases and found that Suisun Associates obtained a couple of US Army Corps of Engineers permits to hydraulically dredge construction grade sands from the Suisun Channel of the Sacramento River between Chipps Island and southern end of Winter Island. Other than these shallow water mining activities, no records of other surface or subsurface mines or quarries were identified within the AoR.
- Water Wells: MC searched public databases and found records of approximately 60 water wells within the areal extent of the AoR. The majority of the wells identified are/were less than 300 feet (ft) in depth with only several reaching between 300 to 400 ft depth, and a single irrigation well reaching to roughly 773 ft. The information available from public records available for these water wells located within the AoR are summarized in a table in Appendix H-2. These water wells are separated from the targeted injection zone of the Anderson sandstone by roughly 9,000 ft and numerous thick shale units.

The other deep wells, State and US EPA cleanup sites, surface bodies of water and tidal wetlands, mines/quarries, and water supply wells to be covered under this plan are shown in Figure H-1.

Infrastructure in the vicinity of the MC project site, within the preliminary, structurally controlled AoR, that may be affected as a result of an emergency at the project site include:

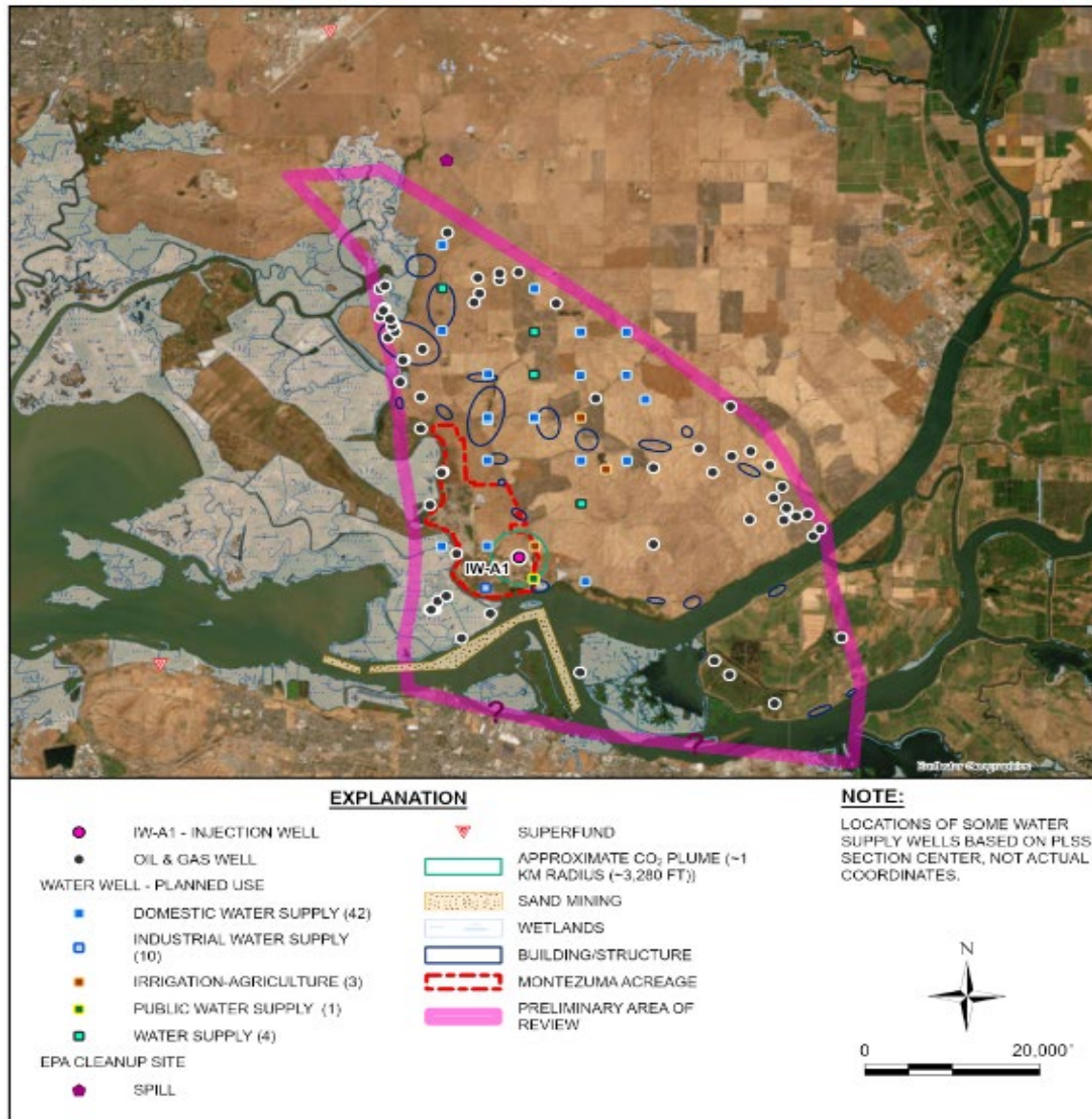
- Assets of MC including Injection Well IW-A1 and associated above ground CO₂ equipment.
- Structures for Human Occupancy: Approximately 20 areas were identified within the AoR to contain one or more residential/commercial building structures; except for the small cluster located at Collinsville,

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

near the southeast corner of the project site, all other structures are well outside the predicted CO₂ plume front.

Resources and infrastructure covered by this plan are shown in Figure H-1.

FIGURE H-1. MAP OF THE SITE RESOURCES AND INFRASTRUCTURE



SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

H.3 POTENTIAL RISK SCENARIOS

The following events related to the MC project site that could potentially result in an emergency response:

- Injection or monitoring (verification) well integrity failure;
- Injection well monitoring equipment failure (e.g., shut-off valve or pressure gauge, etc.);
- Fluid (e.g., brine) or CO₂ leakage into a USDW or up to the surface;
- A natural disaster (e.g., earthquake, tornado, lightning strike); or
- Induced or natural seismic event.

Response actions will depend on the severity of the event(s) triggering an emergency response. “Emergency events” are categorized as shown in Table H-1.

TABLE H-1. DEGREES OF RISK FOR EMERGENCY EVENTS

Emergency Condition	Definition
Major emergency	Event poses immediate substantial risk to human health, resources, or infrastructure. Emergency actions involving local authorities (evacuation or isolation of areas) should be initiated.
Serious emergency	Event poses potential serious (or significant) near term risk to human health, resources, or infrastructure if conditions worsen or no response actions taken.
Minor emergency	Event poses no immediate risk to human health, resources, or infrastructure.

H.4 EMERGENCY IDENTIFICATION AND RESPONSE ACTIONS

Steps to identify and characterize the event will be dependent on the specific issue identified, and the severity of the event. The identified potential risk scenarios are detailed below.

H.4.1 WELL INTEGRITY FAILURE

Integrity loss of IW-A1 and/or IZMW-A1 may endanger USDWs. Integrity loss may have occurred if the following events occur:

- Automatic shutdown devices are activated:
 - Wellhead pressure exceeds the shutdown pressure specified in the permit.
 - Annulus pressure indicates a loss of external or internal well containment.

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

- Pursuant to 40 CFR 146.91(c)(3), MC must notify the US EPA UIC Program Director within 24 hours of any triggering of a shut-off system (i.e., down-hole or at the surface).
- Mechanical integrity test results identify a loss of mechanical integrity.

Severity:

- | | |
|----------------|--|
| Major, Serious | = Visual evidence of CO ₂ surface leak |
| Minor | = Potential well integrity failure indicated only by instruments |

Timing of event: Injection period, Post-Injection period

Avoidance measures: Planned practices to avoid the scenario include but are not limited to: injection operations within permitted limits, routine well maintenance, and implementation of the approved Testing and Monitoring Plan.

Detection methods: Detection methods described in the Testing and Monitoring Plan include but are not limited to: Internal Mechanical Integrity Tests, External Mechanical Integrity Tests, Monitoring of Operational Parameters, and Surface/Near Surface CO₂ Monitoring.

Potential response actions:

- Notify the US EPA UIC Program Director within 24 hours of the emergency event, per 40 CFR 146.91(c). Details of notification method(s) are anticipated to include telephone calls/messages, email correspondence, and the appropriate filings in the US EPA Geologic Sequestration Data Tool (GSDT), pending discussion with the US EPA.
- Determine the severity of the event, based on the information available, within 24 hours of notification.
- For a Major or Serious emergency:
 - Initiate shutdown plan.
 - If CO₂/brine contamination is detected, identify and implement appropriate remedial actions (in consultation with the US EPA UIC Program Director).
- For a Minor emergency:
 - Conduct assessment to determine whether there has been a loss of mechanical integrity.
 - If there has been a loss of mechanical integrity, initiate shutdown plan.

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

Response personnel: Initial response by site personnel listed in this plan, remediation by MC and its subcontractors.

Equipment: To be provided by MC and its subcontractors as appropriate.

H.4.2 INJECTION WELL MONITORING EQUIPMENT FAILURE

The failure of monitoring equipment for wellhead pressure, temperature, and/or annulus pressure may indicate a problem with the injection well that could endanger USDWs.

Severity:

Major, Serious	= Strong evidence for over-pressurization of the system
Minor	= Monitoring equipment failure, but weak/no evidence of over-pressurization of the system

Timing of event: Injection period

Avoidance measures: Planned practices to avoid the scenarios include, but are not limited to: preventative maintenance of monitoring equipment, redundancy within monitoring systems, field inspections of monitoring equipment.

Detection methods: Triggering of alarms within the monitoring system.

Potential Response actions:

- Notify the US EPA UIC Program Director within 24 hours of the emergency event, per 40 CFR 146.91(c). Details of notification method(s) include telephone calls/messages, email correspondence, and the appropriate filings in the US EPA GSDT, pending discussion with the US EPA.
- Determine the severity of the event, based on the information available, within 24 hours of notification.
- For a Major or Serious emergency:
 - Initiate shutdown plan.
 - Identify and, if necessary, implement appropriate remedial actions (in consultation with the US EPA UIC Program Director).

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN 40 CFR 146.94(a)

- For a Minor emergency:
 - Conduct assessment to determine whether there has been a loss of mechanical integrity.
 - If there has been a loss of mechanical integrity, initiate shutdown plan.

Response personnel: Initial response by site personnel listed in this plan, remediation by MC and its subcontractors.

Equipment: To be provided by MC and its subcontractors as appropriate.

H.4.3 POTENTIAL BRINE OR CO₂ LEAKAGE INTO USDW OR UP TO THE SURFACE

Elevated concentrations of indicator parameter(s) in groundwater sample(s) or other evidence of fluid (brine) or CO₂ leakage into a USDW.

Severity:

Major, Serious	= Strong evidence for brine or CO ₂ leakage to USDW or the surface
Minor	= Weak evidence for brine or CO ₂ leakage to USDW or the surface

Timing of event: Injection period, Post-Injection period

Avoidance measures: Planned practices to avoid the scenario include but are not limited to: injection operations within permitted limits, well maintenance, and implementation of the Testing and Monitoring Plan.

Detection methods: Detection methods described in the Testing and Monitoring Plan include but are not limited to: Groundwater Quality and Geochemical Monitoring, Soil Gas Monitoring, and Surface CO₂ Monitoring.

Potential Response actions:

- Notify the US EPA UIC Program Director within 24 hours of the emergency event, per 40 CFR 146.91(c). Details of notification method(s) include telephone calls/messages, email correspondence, and the appropriate filings in the US EPA GSDT, pending discussion with the US EPA.
- Determine the severity of the event, based on the information available, within 24 hours of notification.
- For all emergencies (Major, Serious, or Minor):

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

- Initiate shutdown plan.
- If the presence of indicator parameters are confirmed, develop (in consultation with the US EPA UIC Program Director) a case-specific work plan to:
 - Install additional groundwater monitoring points near the affected groundwater well(s) to delineate the extent of impact; and
 - Remediate unacceptable impacts to the affected USDW.
- Arrange for an alternate potable water supply, if the USDW was being utilized and has been caused to exceed drinking water standards.
- Proceed with efforts to remediate USDW to mitigate and monitor any unsafe conditions (e.g., install system to intercept/extract brine or CO₂, or “pump and treat” to aerate CO₂-laden water).
- Continue groundwater remediation and monitoring on a frequent basis (frequency to be determined by MC and the US EPA UIC Program Director until unacceptable adverse USDW impact has been fully addressed).

Response personnel: Initial response by site personnel listed in this plan, remediation by MC and its subcontractors.

Equipment: To be provided by MC and its subcontractors as appropriate.

H.4.4 NATURAL DISASTER (EXCEPT EARTHQUAKES)

Issues may arise as a result of a natural disaster (e.g., tornado, lightning strike) affecting the normal operation of the injection well.

Severity:

Major, Serious	= Strong evidence for loss of CO ₂ containment in system
Minor	= Minimal or no evidence for loss of CO ₂ containment in system

Timing of event: Injection period, Post-Injection period

Avoidance measures: Not applicable

Detection methods: Observations by staff

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

Potential Response actions: If a natural disaster occurs that affects normal operation of the injection well, perform the following:

- Notify the US EPA UIC Program Director within 24 hours of the emergency event, per 40 CFR 146.91(c). Details of notification method(s) include telephone calls/messages, email correspondence, and the appropriate filings in the US EPA GSDT, pending discussion with the US EPA.
- Determine the severity of the event, based on the information available, within 24 hours of notification.
- For a Major or Serious emergency:
 - Initiate shutdown plan.
 - If contamination or endangerment is detected, identify and implement appropriate remedial actions (in consultation with the US EPA UIC Program Director).
- For a Minor emergency:
 - Conduct assessment to determine whether there has been a loss of mechanical integrity.
 - If there has been a loss of mechanical integrity, initiate shutdown plan.

Response personnel: Initial response by site personnel listed in this plan, remediation by MC and its subcontractors.

Equipment: To be provided by MC and its subcontractors as appropriate.

H.4.5 EARTHQUAKE: INDUCED OR NATURAL SEISMIC EVENT

The plan is aligned with the continuous passive seismic emission tomography (PSET) non direct data monitoring system proposed for this project. Based upon the magnitude and location of the seismic events detected, MC will follow the seismic response protocols described in Table H-2, if the event is identified to be located within the preliminary, structurally controlled AoR.

Severity: See Table H-2.

Timing of event: Injection period, Post-Injection period.

Avoidance measures: Not applicable

Detection methods: Continuous monitoring of regional and dedicated seismic networks.

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

Potential Response actions: See Table H-2

Response personnel: Initial response by site personnel listed in this plan, remediation by MC and its subcontractors.

Equipment: To be provided by MC and its subcontractors as appropriate.

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

TABLE H-2. RESPONSE TO SEISMIC EVENTS

Operating State	Threshold Condition	Response Action
Green	No triggering events have occurred within past 24 hours	1. Continue with normal operation within permitted levels.
Yellow	$M_w \geq 1$ events or clustered $M_w \geq 0$ events within a 24-hour period, but the events do not justify a Red operating state	<ol style="list-style-type: none"> 1. Continue with normal operation within permitted levels. 2. These events are evaluated and ruled as “real/verified” or “artifact/disqualified”, with a recommendation for further investigation or a decision is taken to return to Green. 3. If further investigation is deemed necessary, notify one or more response personnel within 1 hour of the confirmation/decisions that the operating state of the geologic sequestration project has changed to Yellow.
Red	Significant $M_w > 2$ event(s) within a 24-hr period that warrant MC operations to initiation protective/preventative cautionary measures	<ol style="list-style-type: none"> 1. Initiate shutdown plan. 2. Notify one or more response personnel within 1 hour of the triggering event the operating state of the geologic sequestration project has changed to Red. 3. Notify the US EPA UIC Program Director the shutdown plan was implemented due to a triggering seismic event. Notification details may include telephone calls/messages, email correspondence, GSDT notification or other methods pending discussion with the US EPA. 4. Limit access to IW-A1 and IZMW-A1 to authorized personnel only. 5. Identify and implement appropriate corrective actions in consultation with the US EPA Program Director. 6. Re-start operations upon approval of the US EPA Program Director.

M_w = magnitude

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

H.5 RESPONSE PERSONNEL AND EQUIPMENT

Site personnel, project personnel, and local authorities will be relied upon to implement this ERRP.

Site personnel to be notified (not listed in order of notification):

1. Plant Manager
2. Operations Manager
3. Maintenance Manager
4. Environmental Health and Safety Coordinator
5. Corporate Communications
6. Chief Technology Officer

A specific emergency contact list will be developed and maintained during the life of the project. MC considers the names and contact information for these professionals confidential and will provide a current site-specific emergency contact list to the US EPA UIC Program Director, upon request (or recurring requested frequency). See Table H-3 for key local, state and other authorities.

TABLE H-3. CONTACT INFORMATION FOR KEY LOCAL, STATE, AND OTHER AUTHORITIES

Agency	Phone Number
Police	
Emergency	911
Main – Solano County Sheriff (non-emergency)	(707) 784-7000
Main – California Highway Patrol (non-emergency)	(800) 835-5247

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

Agency	Phone Number
Fire Emergency Main – Suisun Fire Department	911 (707) 421-7205
Ambulance Emergency Solano County EMS & Ambulance (non-emergency)	911 (707) 374-2300
California Office of Emergency Services Spill and All Hazards (24-hour)	(800) 852-7550
US EPA UIC Program Director EPA National Response Center (24-hour)	David Albright (800) 424-8802
California Geological Survey	(916) 327-1850

Equipment needed in the event of an emergency and remedial response will vary, depending on the triggering emergency event. Response actions (cessation of injection, well shut-in, and evacuation) will generally not require specialized equipment to implement. MC and its subcontractors shall be responsible for obtaining specialized equipment (e.g., a drilling rig, logging equipment) when warranted.

H.6 EMERGENCY COMMUNICATIONS PLAN

MC will communicate to the public about any event that requires an emergency response to ensure that the public understands what happened and whether or not there are any environmental or safety implications. The amount of information, timing, and communications method(s) will be appropriate to the event, its severity, whether any impacts to drinking water or other environmental resources occurred, any impacts to the surrounding community, and their awareness of the event.

MC will describe what happened, any impacts to the environment or other local resources, how the event was investigated, what responses were taken, and the status of the response. For responses that occur over the long-term (e.g., ongoing cleanups), MC will provide periodic updates on the progress of the response action(s).

MC will also communicate with entities who may need to be informed about or take action in response to the event, including local water systems, CO₂ source(s) and pipeline operators, land owners, and Regional Response Teams (as part of the National Response Team).

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN

40 CFR 146.94(a)

H.7 PLAN REVIEW

This ERRP shall be reviewed:

- At least once every five years following its approval by the permitting agencies;
- Within one year of an area of review reevaluation;

Within a prescribed period (to be determined by the permitting agencies) following any significant changes to the injection process or the injection facility, or an emergency event; or as required by the permitting agencies. If the review indicates that no amendments to the ERRP are necessary, MC will provide the permitting agencies with the documentation supporting the “no amendment necessary” determination.

If the review indicates that amendments to the ERRP are necessary, amendments shall be made and submitted to the permitting agencies within six months following an event that initiates the ERRP review procedure.

H.8 STAFF TRAINING AND EXERCISE PROCEDURES

MC employees and subcontractors that are covered by contractual agreements with MC performing tasks outlined in this ERRP need to meet the initial training requirements outlined in the Occupational Safety and Health Administration regulations 29 CFR 1910.120(e)(3). The best solution is for employees and subcontractors to have certification in the 40-hour HAZWOPER course and, if staff will be performing supervisory duties, the 8-hour supervisor’s course.

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

APPENDIX H-1

OIL & GAS LEGACY WELLS

APPENDIX H-1. OIL & LEGACY WELLS

O&G well locations identified warranting detailed evaluation for future corrective actions - Seven (7)

TOWNSHIP	RANGE	SECTION	County	Field	Latitude	Longitude	API No.	Well Name	Well Number	Year Drilled	Yr Abandon	Original Hole TD	RD1 T.D.	RD2 T.D.	CalGEM STATUS	CalGEM Type	SURF. CSG. SIZE	SETTING DEPTH	2nd CSG. STRING	SETTING DEPTH	3rd CSG. STRING	SETTING DEPTH	API No.	Anderson Top	Anderson Base	Anderson Thickness
T2N	R1E	8	Contra Costa	Wildcat	38.035677	-121.8813	01300275	Browns Island Unit	1	1964	1964	10006	12100		PLUGGED	DRY HOLE	9-5/8"	1506					01300275			
T3N	R1E	6	Solano	Wildcat	38.083044	-121.919661	09520965	McDougal Livestock	1	1993	1993	7142			PLUGGED	DRY HOLE	10-3/4"	1500	7"	5389			09520965	8415		
T3N	R1E	8	Solano		38.114487	-121.888824	09520674	Swept-Hershey State	1-8	1984	1984	9328			PLUGGED	DRY HOLE	20"	518	13.375	2038	9.625"	6977	09520674	9288		
T3N	R1E	8	Solano	Wildcat	38.114182	-121.889433	09520724	McDougal	2-8	1985	1985	12191			PLUGGED	DRY HOLE	13-3/8"	722	9-5/8"	7173			09520724	9892	10500	608
T3N	R1E	19	Solano	Wildcat	38.0815029	-121.903105	09500420	Dow Chemical Co.-Ward	1	1953	1953	8966			PLUGGED	DRY HOLE	11-3/4"	1002	7"	7520			09500420	8611	8774	163
T3N	R1E	20	Solano	Van Sickle Island Gas Field	38.0865702	-121.8833583	09521296	Roaring River	20-4	2008	idle	8201	8500	7858	IDLE	DRY GAS	10-3/4"	1531	7"	7855			09521296			
T3N	R1W	24	Solano	Honker Gas Field	38.082673	-121.918898	09520206	Standard - King	1	1976	1976	11070			PLUGGED	DRY HOLE	13-3/8"	1596	9-5/8"	7950			09520206	9160	10051	891

O&G well locations identified warranting further evaluation and potentially may require future corrective actions - thirty seven (37)

TOWNSHIP	RANGE	SECTION	County	Field	Latitude	Longitude	API No.	Well Name	Well Number	Year Drilled	Yr Abandon	Original Hole TD	RD1 T.D.	RD2 T.D.	CalGEM STATUS	CalGEM Type	SURF. CSG. SIZE	SETTING DEPTH	2nd CSG. STRING	SETTING DEPTH	3rd CSG. STRING	SETTING DEPTH	API No.	Anderson Top	Anderson Base	Anderson Thickness
T2N	R2E	5	Sacramento	Wildcat	38.050167	-121.7811331	06720166	Lower Sherman Island	1	1980	1981	8595			PLUGGED	DRY HOLE	8-5/8"	904	8-5/8"	904			06720166	8420		
T2N	R2E	5	Sacramento		38.05101	-121.78112	06720166	Lower Sherman Island	1	1980	1980	8595			PLUGGED	DRY HOLE	8.625"	904					06720166	8420		
T2N	R2E	5	Sacramento	Wildcat	38.0453236	-121.7751905	06700295	Signal-R.I.L. Co.	1	1965	1965	8835			PLUGGED	DRY HOLE	9-5/8"	800	9-5/8"	800			06700295	8078	8680	602
T3N	R2E	5	Solano	Wildcat	38.1364346	-121.7744585	09520430	Anderson	1-5	1980	1980	14269			PLUGGED	DRY HOLE	13-3/8"	1499	7-5/8"	13183			09520430	7825	8189	364
T3N	R2E	8	Solano	Sherman Island Gas Field	38.1222444	-121.7870538	09520450	Neil	1	1981	1981	9600			PLUGGED	DRY HOLE	9-5/8"	1022					09520450	8035	8550	515
T3N	R2E	8	Solano	Sherman Island Gas Field	38.11967	-121.774135	09500426	Dozier-Pressley	1	1965	1965	10503			PLUGGED	DRY HOLE	9-5/8"	1009					09500426	7420	7828	408
T3N	R2E	9	Solano	Sherman Island Gas Field	38.116502	-121.75894	09520702	Dozier & Pressley	2-9	1984	1984	7162			PLUGGED	DRY HOLE	8-5/8"	910					09520702	6685	7097	412
T3N	R2E	9	Solano	Sherman Island Gas Field	38.1212442	-121.766501	09520697	Dozier & Pressley	1-9	1984	1984	7307			PLUGGED	DRY HOLE	8-5/8"	907					09520697	6840	7261	421
T3N	R2E	15	Solano	Sherman Island Gas Field	38.099136	-121.748396	09520321	Dozier & Pressley Co.	4	1976	1976	6707			PLUGGED	DRY HOLE	9-5/8"	736					09520321	6400		
T3N	R2E	15	Solano	Sherman Island Gas Field	38.0677315	-121.8935222	09520124	Dozier & Pressley	2	1970	2015	6800			PLUGGED	INJECTION	8-5/8"	718	4-1/2"	6541			09520124	6352		
T3N	R2E	15	Solano	Sherman Island Gas Field	38.098188	-121.7388722	09520093	Dozier & Pressley Co.	1	1969	1981	7518			PLUGGED	GAS	9-5/8"	775	2-7/8"	6564			09520093	6500	6680	180
T3N	R2E	15	Solano	Sherman Island Gas Field	38.107177	-121.740789	09520239	D. P. M. Unit	1	1974	1974	8132			PLUGGED	DRY HOLE	8-5/8"	1011					09520239	7220		
T3N	R2E	16	Solano	Sherman Island Gas Field	38.109213	-121.753986	09520127	Dozier-Pressley Co.	3	1970	1980	6950			PLUGGED	GAS	8-5/8"	720	4-1/2"	6950			09520127	6805		
T3N	R2E	16	Solano	Sherman Island Gas Field	38.102027	-121.75228	09520125	Dozier-Pressley	2	1970	1971	8020			PLUGGED	GAS	8-5/8"	780	5-1/2"	4930			09520125	6885	7059	174
T3N	R2E	16	Solano	Sherman Island Gas Field	38.097797	-121.753318	09500427	Dozier-Pressley	1	1946	1946	8025			PLUGGED	DRY HOLE	9-5/8"	507					09500427	6775	7150	375
T3N	R2E	16	Solano	Sherman Island Gas Field	38.0981119	-121.7670576	09520878	Dozier-Pressley	1	1990	1990	8500			PLUGGED	DRY HOLE	8-5/8"	854					09520878	7510	8000	490
T3N	R2E	22	Solano	Sherman Island Gas Field	38.0924256	-121.7418121	09521011	West Dozier	1	1995	1996	6700	6520		PLUGGED	GAS	8-5/8"	697					09521011	6325		
T3N	R2E	22	Solano	Sherman Island Gas Field	38.094876	-121.73889	09520154	Decker Island Unit	5	1971	1971	7750	6874		PLUGGED	GAS	8-5/8"	730					09520154			
T4N	R1E	7	Solano	Wildcat	38.19576	-121.886818	09520963	Gunn	1	1993	1993	9310			PLUGGED	DRY HOLE	8-5/8"	1070					09520963	7260	8348	1088
T4N	R1E	9	Solano	Wildcat	38.199701	-121.869443	09521049	Mayhood	1	1998	1998	10298			PLUGGED	DRY HOLE	9-5/8"	1472					09521049	8450	9290	840
T4N	R1E	9	Solano	Kirby Hill Gas Field	38.200498	-121.865224	09521048	Petersen	1	1999	1999	10371			PLUGGED	GAS	9-5/8"	1107	5-1/2"	6223	2-7/8"	10340	09521048	8555	9310	755
T4N	R1E	12	Solano	Wildcat	38.200589	-121.821493	09520793	Hagan	2-12	1987	1987	10085			PLUGGED	DRY HOLE	10-3/4"	2080					09520793	8507	8816	309
T4N	R1E	15	Solano	Wildcat	38.1858609	-121.852744	09520812	Shiloh	1-15	1987	1988	10,700			PLUGGED	DRY HOLE	10-3/4"	2097					09520812	8974	9515	541
T4N	R1E	21	Solano	Wildcat	38.17964	-121.866248	09500005	Turner	1	1966	1967	10449			PLUGGED	DRY HOLE	10-3/4"	1025					09500005	9150	9748	598
T4N	R1E	21	Solano	Wildcat	38.18028	-121.874746	09520080	Sumpf-Williams-O'Brien	1	1969	1969	10600			PLUGGED	DRY HOLE	11-3/4"	507	8-5/8"	6773			09520080	8866	9444	578
T4N	R1E	21	Solano	Wildcat	38.172033	-121.876289	09521120	R. W. Blacklock	2-21	2001	2003	11544			PLUGGED	DRY GAS	13-3/8"	833	9-5/8"	7953	4-1/2"	11226	09521120	8924	9588	664
T4N	R1E	21	Solano	Wildcat	38.18181	-121.866255	09520017	Sumpf-Williams-Turner	2	1967	1968	12216			PLUGGED	DRY HOLE	10-3/4"	2809	7"	8747	4-1/2"	12193	09520017	9155	9598	443
T4N	R1E	22	Solano	Wildcat	38.182131	-121.858574	09520750	McGraugh	1-22	1986	1989	10,595			PLUGGED	DRY GAS	10-3/4"	2026	5-1/2"	10876			09520750	9186	9745	559
T4N	R1E	24	Solano	Wildcat	38.183203	-121.807013	09520449	Hagen	1	1984	1984	9,503	9249		PLUGGED	DRY HOLE	9-5/8"	1039	2-7/8"	9316			09520449	8155	8671	516
T4N	R1E	31	Solano	Kirby Hill Gas Field	38.144964	-121.905745	09500079	Fontana Farms	4	1945		5800			PLUGGED	GAS	11-3/4"	568	7"	3030			09500079	5488		
T4N	R1E	31	Solano	Kirby Hill Gas	38.152496	-121.904076	09500063	Standard-Kirby Community	8R	1963	1963	6421			PLUGGED	DRY HOLE	13.375"	302	7"	1062			09500063	5314	5979	665
T4N	R2E	18	Solano	Wildcat	38.19644	-121.797704	09520068	U.S.A.A.R. Blodgett	1	1968	1968	10,601			PLUGGED	DRY HOLE	10-3/4"	1992					09520068	7675		
T4N	R2E	19	Solano	Wildcat	38.1821312	-121.7971944	09520215	Sage-Phillips-Sumpf-Kroutch	1	1973	1973	11,510			PLUGGED	DRY HOLE	10-3/4"	1516	7"	10999			09520215	7861	8300	439
T4N	R2E	20	Solano	Wildcat	38.173602	-121.781646	09500435	Montezuma Community	1	1944	1944	7,400			PLUGGED	DRY HOLE	11-3/4"	670					09500435	7345		
T4N	R2E	29	Solano	Wildcat	38.154702	-121.78719	09520976	Hierlthy Estate	1	1994	1994	9000			PLUGGED	DRY HOLE	8-5/8"	944					09520976	7852		
T4N	R2E	29	Solano	Wildcat	38.1668533	-121.7816679	09520011	S.A.A. Unit 1	1	1967	1967	11645			PLUGGED	DRY HOLE	10-3/4"	1153	7"	6684			09520011	7178	7540	362
T4N	R2E	30	Solano	Wildcat	38.166082	-121.798193	09520489	Hamilton Ranch	1	1982	1982	9,196			PLUGGED	DRY HOLE	9-5/8"	1003					09520489	8045	8411	366
T4N	R2E	32	Solano	Wildcat	38.146737	-121.785892	09520995	Mayhood	32-1D	1995	1995	11440			PLUGGED	DRY HOLE	9-5/8"	1439					09520995	8050		

SECTION H. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94(a)

APPENDIX H-2

WATER WELLS

APPENDIX H-2. WATER WELLS

OBJECTID	Section	Township	Range	WCR_No_	Latitude	Longitude	Date_Work_Ended	Total_Depth	Top_of	Bottom_of	Casing_Size	Planned_Use	Drilling_Company
DOMESTIC WELLS													
1				WCR1994-000929	38.13243	-121.85243	1994-04-03 00:00:00	120			5"	Domestic	Vaca Drilling Co.
3	3	T3N	R1E	WCR1991-004184	38.132778	-121.8525	1991-09-07 00:00:00	220	25	220	5"	Domestic	Vaca Drilling Co.
5				WCR2010-001159	38.13289	-121.85243		400	360	400	6"	Domestic	Woodward Drilling Co.
6	4	T3N	R1E	WCR1982-001391	38.13296	-121.87098	1982-08-12 00:00:00	100				Domestic	Vaca Drilling Co.
7	1	T3N	R1E	WCR2011-005762	38.138889	-121.808333	2011-11-17 00:00:00	320	270	310	6"	Domestic	DeJesus Pump Well Drilling
21	26	T3N	R1E	WCR1980-001076	38.077170	-121.832290	1980-12-16 00:00:00	100			5"	Domestic	Vaca Drilling Co.
22				WCR1982-001399	38.078056	-121.852778	1982-09-27 00:00:00	100			5"	Domestic	Vaca Drilling Co.
25	20	T3N	R1E	WCR1986-004919	38.089167	-121.889444	1986-06-23 00:00:00	101			5"	Domestic	Vaca Drilling Co.
32				WCR1954-000264	38.089220	-121.852230	not listed	210	70	210	6"	Domestic	Vaca Drilling Co.
43	12	T3N	R1E	WCR1975-000465	38.118160	-121.815620		120	40	120	5"	Domestic	Vaca Drilling Co.
44	11	T3N	R1E	WCR1989-010443	38.118250	-121.833910	1989-07-17 00:00:00	200			5"	Domestic	Vaca Drilling Co.
45				WCR1975-00464	38.118390	-121.871080	1975-08-27 00:00:00	221	25	220		Domestic	Vaca Drilling Co.
47				WCR1997-005860	38.132060	-121.870980	1997-10-23 00:00:00	240	78	254	5"	Domestic	Vaca Drilling Co.
48	2	T3N	R1E	WCR0047180	38.132778	-121.834167	1981-10-14 00:00:00	149			6.625"	Domestic	Vaca Drilling Co.
49				WCR1988-007782	38.132778	-121.834167	1988-09-20 00:00:00	260			6"	Domestic	Vaca Drilling Co.
51				WCR2010-001149	38.132960	-121.870980	2010-10-27 00:00:00	295			6"	Domestic	A&A Gross Drilling
52				WCR1991-000769	38.132960	-121.870980	1991-05-22 00:00:00	65			6"	Domestic	Carter Water Well Drilling
53				WCR1997-005863	38.132960	-121.870980	1997-09-22 00:00:00	200	60	200	5"	Domestic	Vaca Drilling Co.
54				WCR1956-000526	38.132960	-121.870980	1956-06-24 00:00:00	60	40	60	6"	Domestic	Vaca Drilling Co.
33	21	T3N	R1E	WCR1954-000265	38.089250	-121.871240						Domestic	Vaca Drilling Co.
57	35	T4N	R1E	WCR1997-005866	38.147222	-121.834167	1997-10-23 00:00:00	260			5"	Domestic Water Supply	Vaca Drilling Co.
58	36	T4N	R1E	WCR2007-001716	38.147260	-121.815800	2007-10-24 00:00:00	200	160	200	5"	Domestic Water Supply	Vaca Drilling Co.
59	36	T4N	R1E	WCR2007-001717	38.147260	-121.815800	2007-10-29 00:00:00	220	40	220	5"	Domestic Water Supply	Vaca Drilling Co.
60	36	T4N	R1E	WCR1951-000551	38.147260	-121.815800		28	21	28	6"	Domestic Water Supply	Owner of Well
63	33	T4N	R1E	WCR2008-001635	38.147590	-121.870840		300	160	300	6"	Domestic Water Supply	A&A Gross Drilling
65	25	T4N	R1E	WCR1977-002210	38.161820	-121.815670	1977-11-03 00:00:00	103	80	100	5"	Domestic Water Supply	Vaca Drilling Co.
66	25	T4N	R1E	WCR1997-005864	38.161820	-121.815670	1997-09-28 00:00:00	260	120	260	5"	Domestic Water Supply	Vaca Drilling Co.
67	26	T4N	R1E	WCR1982-002019	38.161900	-121.834010	1982-01-01 00:00:00	174			9"	Domestic Water Supply	Seebeck
68	26	T4N	R1E	WCR1985-000470	38.161900	-121.834010	1985-11-04 00:00:00	181			5"	Domestic Water Supply	Vaca Drilling Co.
71	29	T4N	R1E	WCR1985-000454	38.162360	-121.889100	1985-09-22 00:00:00	101			6"	Domestic Water Supply	Vaca Drilling Co.
72	29	T4N	R1E	WCR1999-005850	38.162360	-121.889100	1999-10-19 00:00:00	120			5"	Domestic Water Supply	Vaca Drilling Co.
73	29	T4N	R1E	WCR1974-00406	38.162360	-121.889100	1974-07-22 00:00:00	121	50	120	6"	Domestic Water Supply	Vaca Drilling Co.
74	29	T4N	R1E	WCR2006-000682	38.162360	-121.889100		150	30	150	5"	Domestic Water Supply	Vaca Drilling Co.
75	29	T4N	R1E	WCR1990-000913	38.162360	-121.889100	1990-06-26 00:00:00	120			6"	Domestic Water Supply	Carter Water Well Drilling Service
77	22	T4N	R1E	WCR2001-003995	38.176580	-121.852250	2001-05-16 00:00:00	260	100	260	5"	Domestic Water Supply	Vaca Drilling Co.
78	22	T4N	R1E	WCR1978-000121	38.176667	-121.852222	1978-10-13 00:00:00	247	70	240		Domestic Water Supply	Vaca Drilling Co.

APPENDIX H-2. WATER WELLS

OBJECTID	Section	Township	Range	WCR_No_	Latitude	Longitude	Date_Work_Ended	Total_Depth	Top_of	Bottom_of	Casing_Size	Planned_Use	Drilling_Company
79	20	T4N	R1E	WCR2006-000681	38.176820	-121.88900	2006-06-18 00:00:00	280	55	280	5"	Domestic Water Supply	Vaca Drilling Co.
80	20	T4N	R1E	WCR1991-004174	38.176820	-121.889000	1991-06-20 00:00:00	140	100	140	5"	Domestic Water Supply	Vaca Drilling Co.
82	20	T4N	R1E	WCR1986-004937	38.176944	-121.888889	1986-08-07 00:00:00				5"	Domestic Water Supply	Vaca Drilling Co.
83	20	T4N	R1E	WCR1974-000407	38.176944	-121.888889	1974-07-23 00:00:00	142	30	140	6"	Domestic Water Supply	Vaca Drilling Co.
85	17	T4N	R1E	WCR1973-000801	38.191490	-121.888930	1973-04-22 00:00:00	121	60	110	5"	Domestic Water Supply	Vaca Drilling Co.
86	17	T4N	R1E	WCR1957-000159	38.191490	-121.888930	1957-01-30 00:00:00	60	31	59	6"	Domestic Water Supply	H. O. Krossa
61	34	T4N	R1E	WCR1989-011955	38.147460	-121.852520	1989-11-03 00:00:00	140			5"	Water Supply	Vaca Drilling Co.
69	27	T4N	R1E	WCR1989-011954	38.161990	-121.852370	1989-11-02 00:00:00	180			5"	Water Supply	Vaca Drilling Co.
81	20	T4N	R1E	WCR1995-003844	38.176820	-121.889000	1995-06-25 00:00:00	140	40	140	5"	Water Supply	Vaca Drilling Co.
38	14	T3N	R1E	WCR1981-003162	38.103611	-121.833889	1981-06-14 00:00:00	78			7"	Water Supply	Seebeck Drilling
INDUSTRIAL/AGRICULTURAL WELLS													
9	28	T3N	R1E	WCR2002-00456	38.075040	-121.871840	2002-06-06 00:00:00	80	24	64	10"	Industrial Water Supply	Gregg Drilling and Testing
11				WCR2002-00460	38.075040	-121.871840	2002-06-06 00:00:00	80	20	50	10"	Industrial Water Supply	Gregg Drilling and Testing
12				WCR2002-00458	38.075040	-121.871840	2002-06-06 00:00:00	80	20	70	10"	Industrial Water Supply	Gregg Drilling and Testing
13				WCR2002-00457	38.075040	-121.871840	2002-06-06 00:00:00	80	26	66	10"	Industrial Water Supply	Gregg Drilling and Testing
14				WCR2002-00459	38.075040	-121.871840	2002-06-06 00:00:00	50	20	50	10"	Industrial Water Supply	Gregg Drilling and Testing
16				WCR2002-000461	38.075040	-121.871840	2002-06-06 00:00:00	80	20	50	10"	Industrial Water Supply	Gregg Drilling and Testing
17				WCR2002-000463	38.075040	-121.871840	2002-06-06 00:00:00	53	15	20	10"	Industrial Water Supply	Gregg Drilling and Testing
18				WCR2002-000452	38.075040	-121.871840	2002-06-06 00:00:00	78	34	44	10"	Industrial Water Supply	Gregg Drilling and Testing
19				WCR2002-000462	38.075040	-121.871840	2002-06-06 00:00:00	50	18	50	10"	Industrial Water Supply	Gregg Drilling and Testing
20				WCR2002-000453	38.075040	-121.871840	2002-06-06 00:00:00	70	34	64	10"	Industrial Water Supply	Gregg Drilling and Testing
42				WCR2012-00374	38.115278	-121.823889		200	60	200	5"	Agricultural & Irrigation	Pacific Coast Well and Pump, inc.
30				WCR1057-000039	38.089220	-121.852230	1957-01-15 00:00:00	773	100	773	13"	Irrigation-Agriculture	Eaton Drilling Co.
50				WCR1981-003176	38.132800	-121.834080	1981-10-14 00:00:00	150			9"	Irrigation-Agriculture	Seebeck Drilling
PUBLIC SUPPLY WELLS													
23	27	T3N	R1E	WCR1990-004026	38.078170	-121.852940	1990-03-28 00:00:00	300	240	300	6"	Public Water Supply	Ronald L. Clark