		Re-Completion Program		Project No: F1252	
		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017 Page: 1 of 27	
Well No: Roper No. 1		State: Colorado		County: Logan	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W	
				Field: Lewis Creek	
				Status: Dry and Abandoned	

INTRODUCTION:

Lonquist Field Service, LLC ("LFS") was contracted by East Cheyenne Gas Storage ("ECGS") to drill and re-complete one of their previously plugged and abandoned wells, ECGS Well Roper No. 1 ("Roper No. 1"), located in Logan County, Colorado.

The workover includes the following:

- Dig out conductor casing and weld casing stub to raise casing height
- Drill 7-7/8" hole to TD @ 5,441'
- Run open-hole logs (Array induction, FDC-CNL)
- Set open hole plug (balanced plug/reactive spacer) @ 1,230'
- Run 6-5/8" surface casing to 1,220'
- Cement 6-5/8" surface casing
- Run CBL logs
- Drill out open hole plug with 5-7/8" bit
- Run 4-1/2" production casing to 5,441'
- Cement 4-1/2" production casing to surface
- Run CBL logs
- Perforate
- Set packer and tubing
- Assemble wellhead

The following procedure provides a detailed prognosis to re-complete Roper No. 1.


REGULATORY INFORMATION:

Well Roper No. 1 is regulated by the Colorado Oil and Gas Conservation Commission ("COGCC"). The COGCC will be notified and all activities approved prior to commencing work activities.

SAFETY INFORMATION – VISION STATEMENT:

LFS believes that all accidents and incidents are preventable. Our corporate goal is to have zero incidents, accidents, or near misses. To further our commitment to safety, LFS has staffed a Safety Director, whose sole purpose is to identify and mediate possible safety concerns and to be a resource for advice on such safety issues. He will be involved in work safety plans, managing JSAs, and offering oversight on our daily safety meeting program. We require that all of our employees and subcontractors accept that philosophy and uphold the standards of LFS. Our field supervisors are well-control certified, with both site specific and industry required safety qualifications related to new well drilling and well workovers. LFS supervisors are responsible to complete pre-job meetings with the contractors and clients, obtain daily work permits, complete JSAs, safety meetings, review Emergency Response Plans, identify any unsafe practices or potential hazards, and implement corrective actions to minimize employee exposure. LFS implements a site specific safety plan that defines the scope of work and identifies the appropriate safety standards and responsibilities for applicable parties for each project performed. LFS will implement a complete HSE plan for all phases of the operation. Our goal is always to ensure compliance with all client needs, as well as all local, State, and Federal safety and environmental regulations.

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		Re-Completion Program		Project No: F1252			
		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017 Page: 2 of 27			
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek	
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<p>The following safety gear and personal protective equipment are required:</p> <ul style="list-style-type: none"> • Hard hat • Safety glasses with side protection (shields or curvature) • Fire retardant clothing • Steel-toed safety shoes w/ankle support – leather or rubber • Gloves • Fall protection required – 6' or above • Any additional required safety equipment • Tour and Critical Operation Safety Meeting • JSA Form – Completed per tour and prior to critical operations by all contractors present <p>A completed and detailed site specific safety plan along with a spill containment plan is being generated to accompany the drilling and completion procedures, and it will be included with the final field package for the project.</p>							
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<h1 style="margin: 0;">LONQUIST</h1>		<h2 style="margin: 0;">Re-Completion Program</h2>		Project No: F1252	
<div style="background-color: #004d00; color: white; padding: 5px; display: inline-block;">FIELD</div> <div style="background-color: #8b6914; color: white; padding: 5px; display: inline-block; margin-left: 10px;">SERVICE</div>		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017	
Well No: Roper No. 1		State: Colorado		County: Logan	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W	
Field: Lewis Creek		Status: Dry and Abandoned			

WORK PLAN:

Risks:

1. The type and condition of mud remaining in the hole
2. Drilling through cement at surface with limited weight on bit
3. Whether or not the bit will kick off from cement plugs into the formation
4. Open-hole conditions
5. Pressures that could be encountered in the well
6. Staying below the frac gradient when cementing (0.6 psi/ft)


The daily work activities will commence after all daily work permits have been acquired and the pre-tour safety meetings have been completed.


1. Survey and prepare well location for service equipment.
 - a. ECGS Field Supervisor will be on site to verify well and site condition
 - b. Locate the surface casing
2. Conduct wellsite safety meeting
3. Dig out the surface casing
 - a. Weld a casing stub with threads to raise the casing height if needed
 - i. Needs to be sufficient for installing a casing-head & BOP assembly
4. Install a temporary casing-head onto surface casing.
 - a. 8-5/8" casing head
5. Install a safety cap onto the casing-head.
6. Prepare location for workover rig.
 - a. Site clearing and landscaping if necessary
 - b. Lay down mats for rig if necessary. Have rig supervisor on location to determine pad size.
7. MIRU Workover Rig
 - a. Rig
 - b. Rig Pump
 - c. (3) Frac tanks
 - d. Pipe racks
 - e. Tank w/ gas buster
 - f. Power swivel
 - g. Cat walk
8. Nipple up BOP on casing head
 - a. Components
 - i. (2-3/8", 4-1/2", 6-5/8" blind, pipe, and shear rams)
 - ii. Annular BOP
 - b. Function test BOP
 - c. Confirm that BOP is API certified

First Cement Plug (10 sacks of cement at surface)

9. RU 7-7/8" rock bit and BHA
 - i. 2-7/8" PH-6 workstring

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<p> ii. 2-7/8" PH-6 RN-Nipple w/ 2.188" DBPV plug b. Have cement mill on location c. Option to use a PDC bit i. Concerns with damaging the PDC bit if there is any junk in the hole 1. Will have to purchase bit if it is damaged 10. Drill through first cement plug (10 sacks) at surface a. Use 12 ppg mud for drilling fluid b. Drill out surface plug i. May have to add drill collars for more weight 11. Circulate hole clean a. Look for condition of mud beneath first surface plug b. May have to pump mud into separate frac tank if mud in hole is contaminated </p> <p> <u>Second Cement Plug (15 sacks at around 120')</u> </p> <p> 12. Drill through mud/open hole to 120' or to top of cement plug with 7-7/8" rock bit a. Risks i. Mud condition of open hole could be contaminated 13. Possibility of kicking off from open hole to formation 14. Drill through cement plug with 7-7/8" rock bit a. Option to use cement mill if rock bit is having trouble b. May have to add drill collars for additional weight c. Possibility of kicking off from plug and not drilling through it 15. Watch for pressures after drilling through the second cement plug a. Calculate what hydrostatic should be at this point to see if any precautions need to be taken when drilling through to TD @ 5,441' b. Hydrostatic pressure gradient should be 0.624 psi/ft with the 12 ppg mud i. 0.603 psi/ft with 11.6 ppg mud 16. Circulate hole clean a. Look for condition of mud beneath second cement plug 17. May have to pump mud into separate frac tank if mud in hole is contaminated 18. Drill to TD @ 5,441' 19. Circulate hole clean a. Monitor mud condition 20. RU Wireline and crane a. Rig up lubricator 21. RU directional survey tools 22. RIH with directional survey tools a. 1 shot every 100' 23. POOH with directional survey tools 24. POOH with 7-7/8" bit and BHA 25. MIRU Wireline and crane a. Rig up lubricator 26. RU open-hole logging tools 27. RIH with open-hole logs and log from TD (5,441') to surface a. Array Induction, FDC-CNL, Caliper </p>					
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API No: 05-075-08449	Operator: East Cheyenne Gas Storage	Location: 013 11N 53W		Status: Dry and Abandoned		
<p>28. Rig down wireline unit</p> <p>29. MIRU cement contractor</p> <p>30. PU drill pipe and cement hardware and RIH to TD</p> <p>31. Cement bottom plug from TD (5,441') to 5,300'</p> <p style="padding-left: 20px;">a. 60 sacks of Class A Lightweight Cement</p> <p style="padding-left: 40px;">i. Weight: 12.4 ppg</p> <p style="padding-left: 40px;">ii. Slurry Yield: 2.21 ft3/sk</p> <p>32. Total Mixing Fluid: 12.82 gal/sk</p> <p>33. RIH with drill pipe and cement hardware to 1,250'</p> <p>34. Set open hole plug (balanced plug/reactive spacer) @ 1,250'</p> <p style="padding-left: 20px;">a. Let plug set for at least 8 hours</p> <p>35. RD cement contractor</p> <p>36. Move 6-5/8" casing into location</p> <p>37. Run 1,220' of 6-5/8", 20 lb/ft, J-55 8rd casing</p> <p>38. PU drill pipe and cement hardware and RIH to float collar</p> <p>39. MIRU cement contractor</p> <p>40. Cement 6-5/8" casing to surface</p> <p style="padding-left: 20px;">a. 87 sacks of Class A Lightweight Cement</p> <p style="padding-left: 40px;">i. Weight: 12.4 ppg</p> <p style="padding-left: 40px;">ii. Slurry Yield: 2.21 ft3/sk</p> <p style="padding-left: 40px;">iii. Total Mixing Fluid: 12.82 gal/sk</p> <p style="padding-left: 20px;">b. 60 sacks of Class A Tail Cement</p> <p style="padding-left: 40px;">i. Weight: 15.6 ppg</p> <p style="padding-left: 40px;">ii. Slurry Yield: 1.18 ft3/sk</p> <p style="padding-left: 40px;">iii. Total Mixing Fluid: 5.2 gal/sk</p> <p>41. Wait on cement (WOC) for 24 hours</p> <p style="padding-left: 20px;">a. Rig down cement contractor and clean hole</p> <p style="padding-left: 20px;">b. POOH with drill pipe</p> <p>42. MIRU wireline and crane</p> <p style="padding-left: 20px;">a. RU lubricator</p> <p>43. RD wireline</p> <p>44. Make final cut on 6-5/8" casing</p> <p>45. RU 5-7/8" bit and BHA</p> <p>46. RIH with bit and BHA and test casing shoe</p> <p>47. Drill out float shoe and open hole plug and circulate wellbore</p> <p>48. Circulate hole clean</p> <p>49. RIH with drill pipe to TD and condition hole</p> <p>50. TOOH with drill pipe and lay down</p> <p>51. Move 4-1/2" production casing onto location</p> <p>52. Run 5,300' of 4-1/2", 10.5#, J-55, 8rd, flush joint production casing</p> <p style="padding-left: 20px;">a. DV Tool @ 3,000'</p> <p>53. MIRU cement contractor</p> <p>54. Cement with 300 sks of Class A Lightweight Cement for 2300' of hole to dv tool</p> <p style="padding-left: 20px;">a. Cement Specs</p> <p style="padding-left: 40px;">i. Weight: 12.4 ppg</p> <p style="padding-left: 40px;">ii. Slurry Yield: 2.21 ft3/sk</p>						
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- iii. Total Mixing Fluid: 12.82 gal/sk
- b. Run float collar to 40' above the float shoe
 - i. Leave a 40' shoe joint
- c. Cement should be a minimum of 200' above the Dakota D formation and preferably 900' above the Dakota D formation top

55. Cement 250 sacks of lead cement and 75 sacks of tail cement at DV Tool to surface

- a. Lead
 - i. Weight: 12.4 ppg
 - ii. Slurry Yield: 2.21 ft³/sk
 - iii. Total Mixing Fluid: 12.82 gal/sk
- b. Tail
 - i. Weight: 15.6 ppg
 - ii. Slurry Yield: 1.18 ft³/sk
 - iii. Total Mixing Fluid: 5.2 gal/sk

56. Wait on cement (WOC) for 24 hours

57. Trip to bottom with workstring (bit and scraper)

- a. Pressure test cement job
- a. Circulate hole clean with 2% KCl and biocide

58. POOH with workstring and laydown workstring


59. Pressure test casing to expected operating and completion conditions


60. Make final cut on 4-1/2" casing

START OF COMPLETION WORK PLAN

- 61. Conduct wellsite safety meeting
- 62. ND 5K BOP
- 63. Assemble/torque up wellhead
 - a. 6-5/8" SOW
 - b. 7-1/16" 5M Casing Head
 - i. 7-1/16" x 4-1/2" Casing Hanger
 - c. 4-1/16" 5M Tubing Head
 - i. 4-1/16" x 2-3/8" Tubing Hanger
 - d. 4-1/16" Completion
 - i. 4-1/16" 5M Wing Valve
 - ii. 4-1/16" 5M Master Valve
- 64. NU 5K BOP on 4-1/16" Master Valve
 - a. 2-3/8 shear, blind and pipe rams
 - b. Annular BOP
- 65. MIRU wireline and crane
 - a. RU lubricator
- 66. RU CBL tools
- 67. RIH with CBL
 - a. Log from PBTD to surface
- 68. POOH with CBL tool
- 69. Move 5,200' of 2-3/8", 4.7#, J-55, 8rd STD EUE tubing onto location
- 70. RIH with perforation tool

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<p> a. Perforate 5,242-5,252' i. 6 spf ii. 1/2" holes 71. POOH with perforation tool and RD Wireline unit 72. RU Arrowset packer with seating nipple and tubing 73. RIH with Arrowset packer, seating nipple and tubing 74. Hang packer at 5,200' 75. Displace annulus with packer fluid 76. Set packer with tubing in neutral 77. Top-off and pressure test annulus to 300 psig for 30 minutes 78. Close 4-1/16" Master Valve 79. ND 5K BOP from 4-1/16" Master Valve 80. Nipple up rest of wellhead 81. RDMO workover rig 82. Clean location and return well over to East Cheyenne Gas Storage Personnel </p>						
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		Re-Completion Program		Project No: F1252	
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Field: Lewis Creek					
Status: Dry and Abandoned					

Reporting Information

Daily Reports – Email or Fax

- Dick Lonquist
- Eric Busch
- Ron Richards
- Gary Ohlman
- James Hoff
- Michael Preisler
- Greg Francis

Final Reports – Email and Hard Copy

- Lonquist & Company, LLC

Final Reports to include:

- Daily Reports
- Well Schematics
- Well Completion Report
- Well Logs
- Photos


Well Owner

East Cheyenne Gas Storage
 10901 W Toller Drive, Suite 200
 Littleton, CO 80127

- Ron Richards – Senior Vice President
 - Telephone – 713-403-6479
 - Email – richards@mehllc.com
- Eddie Bennett – Operations Manager
 - Telephone – 970-520-4310
 - Email –
- Kevin Campbell – EHS
 - Telephone – 970-466-0675
 - Email –
- Gary Ohlman – Rig Supervisor
 - Telephone – 970-520-2092
 - Email – garyohlman@cs.com

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<div>LONQUIST</div> <div>FIELD SERVICE</div>		Re-Completion Program		Project No: F1252		
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API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned
<div>Regulatory</div> <div> State of Colorado Oil and Gas Conservation Commission 1120 Lincoln Street, Suite 801 Denver, Colorado 80203 Diana Burn diana.burn@state.co.us </div>						
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		Re-Completion Program		Project No: F1252	
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API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W	
Field: Lewis Creek					
Status: Dry and Abandoned					
<p>Contractor</p> <p>Lonquist Field Service, LLC 1001 McKinney, Suite 420 Houston, TX 77002</p> <ul style="list-style-type: none"> ▪ Richard Lonquist – President <ul style="list-style-type: none"> ○ Telephone – (512) 699-1527 ○ Fax – (512) 732-9816 ○ Email – richard@lonquist.com ▪ Eric Busch – Sr. Vice President <ul style="list-style-type: none"> ○ Office – (713) 559-9953 ○ Mobile – (832) 216-0785 ○ Fax – (713) 559-9959 ○ Email – eric@lonquist.com ▪ John Wickens – Chief Engineer <ul style="list-style-type: none"> ○ Office – (713) 559-9993 ○ Mobile – (512) 970-4639 ○ Fax – (713) 559-9959 ○ Email – john@lonquist.com ▪ Rob Crews – Vice President <ul style="list-style-type: none"> ○ Office – (713) 559-9955 ○ Mobile – (713) 320-2278 ○ Fax – (713) 559-9959 ○ Email – rob@lonquist.com ▪ Charles Graves – Petroleum Engineer <ul style="list-style-type: none"> ○ Office – (713) 559-9997 ○ Mobile – (713) 202-1159 ○ Fax – (713) 559-9959 ○ Email – charles@lonquist.com 					
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE
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<div>LONQUIST</div>		<div>Re-Completion Program</div>		<div>Project No: F1252</div>	
<div>FIELD</div>		<div>SERVICE</div>		<div>East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure</div>	
<div>Well No: Roper No. 1</div>		<div>State: Colorado</div>		<div>County: Logan</div>	
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<div>Status: Dry and Abandoned</div>					
<div>CURRENT WELLBORE SCHEMATIC</div>					
<div>PREPARED BY</div>	<div>DATE</div>	<div>APPROVED BY</div>	<div>DATE</div>	<div>CLIENT APPROVAL</div>	<div>DATE</div>
<div>CJG</div>	<div>07/26/2017</div>	<div>ETB</div>	<div>07/26/2017</div>		<div>Client Signature</div>

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<div>FIELD</div> <div>SERVICE</div>		<div>East Cheyenne Gas Storage</div> <div>ECGS Well Roper No. 1</div> <div>Workover Procedure</div>		<div>Date: July 2017</div>	
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<div>Status: Dry and Abandoned</div>					
<div>PROPOSED WELLBORE SCHEMATIC</div>					
<div>PREPARED BY</div>		<div>DATE</div>		<div>APPROVED BY</div>	
<div>DATE</div>		<div>DATE</div>		<div>CLIENT APPROVAL</div>	
<div>CJG</div>		<div>07/26/2017</div>		<div>ETB</div>	
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<div>Date: July 2017</div>		<div>Page: 13 of 27</div>		<div>Field: Lewis Creek</div>	
<div>Status: Dry and Abandoned</div>					
<div>CURRENT WELLHEAD SCHEMATIC</div>					
<div>PREPARED BY</div>	<div>DATE</div>	<div>APPROVED BY</div>	<div>DATE</div>	<div>CLIENT APPROVAL</div>	<div>DATE</div>
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<div>PROPOSED WELLHEAD SCHEMATIC</div>							
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<div>LONQUIST</div> <div>FIELD SERVICE</div>		Re-Completion Program		Project No: F1252			
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API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
KILL FLUID PLAN							
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<div>VENDOR CONTACT LIST</div>							
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<div>BLOW-OUT PREVENTER</div>							
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				Date: July 2017 Page: 18 of 27			
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
<p>NEW SURFACE CASING INFORMATION</p>							
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature	
CJG	07/26/2017	ETB	07/26/2017				

LONQUIST		Re-Completion Program		Project No: F1252			
FIELD	SERVICE	East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017			
				Page: 19 of 27			
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
<div>NEW PRODUCTION CASING INFORMATION</div>							
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature	
CJG	07/26/2017	ETB	07/26/2017				

<div>LONQUIST</div> <div>FIELD SERVICE</div>		Re-Completion Program		Project No: F1252		
		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017 Page: 20 of 27		
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned
<p>NEW TUBING INFORMATION</p>						
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature
CJG	07/26/2017	ETB	07/26/2017			


		Re-Completion Program		Project No: F1252	
<div> <div>FIELD</div> <div>SERVICE</div> </div>		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017	
				Page: 21 of 27	
Well No: Roper No. 1		State: Colorado		County: Logan	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W	
Field: Lewis Creek					
Status: Dry and Abandoned					
<p>LOGGING/PERFORATING TOOLS</p>					
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE
CJG	07/26/2017	ETB	07/26/2017		
					Client Signature


LONQUIST		Re-Completion Program		Project No: F1252			
FIELD	SERVICE	East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017			
				Page: 22 of 27			
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
<div>SAFETY PLAN</div>							
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature	
CJG	07/26/2017	ETB	07/26/2017				

<div>LONQUIST</div>		<i>Re-Completion Program</i>		Project No: F1252	
<div>FIELD</div> <div>SERVICE</div>		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017	
				Page: 23 of 27	
Well No: Roper No. 1		State: Colorado		County: Logan	
Field: Lewis Creek		Status: Dry and Abandoned			
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W	
<div>WORKOVER RIG INFORMATION</div>					
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE
CJG	07/26/2017	ETB	07/26/2017		
				Client Signature	

LONQUIST		Re-Completion Program		Project No: F1252			
FIELD	SERVICE	East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017			
				Page: 24 of 27			
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
<div>WORKOVER RIG INFORMATION</div>							
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature	
CJG	07/26/2017	ETB	07/26/2017				

<div>LONQUIST</div>		<div>Re-Completion Program</div>		<div>Project No: F1252</div>	
<div>FIELD</div>		<div>SERVICE</div>		<div>East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure</div>	
<div>Well No: Roper No. 1</div>		<div>State: Colorado</div>		<div>County: Logan</div>	
<div>API No: 05-075-08449</div>		<div>Operator: East Cheyenne Gas Storage</div>		<div>Location: 013 11N 53W</div>	
<div>Date: July 2017</div>		<div>Page: 25 of 27</div>		<div>Field: Lewis Creek</div>	
<div>Status: Dry and Abandoned</div>					
<div>PROGRAM REFERENCES</div>					
<div>PREPARED BY</div>	<div>DATE</div>	<div>APPROVED BY</div>	<div>DATE</div>	<div>CLIENT APPROVAL</div>	<div>DATE</div>
<div>CJG</div>	<div>07/26/2017</div>	<div>ETB</div>	<div>07/26/2017</div>		<div>Client Signature</div>

		Re-Completion Program		Project No: F1252		
		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017 Page: 26 of 27		
Well No: Roper No. 1	State: Colorado		County: Logan		Field: Lewis Creek	
API No: 05-075-08449	Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
<p>Colorado Oil and Gas Conservation Commission Complete Rules (100 – 1200 Series)</p> <p>49 Code of Federal Regulations §192.145, <i>Transportation of Natural and Other Gas by Pipeline (U.S.)</i></p> <p>API Recommended Practice 1170, <i>Design and Operation of Solution-mined Salt Caverns Used for Natural Gas Storage</i></p> <p>API Recommended Practice 51R, <i>Environmental Protection for Onshore Oil and Gas Production Operations and Leases</i></p> <p>API Recommended Practice 76, <i>Contractor Safety Management for Oil and Gas Drilling and Production Operations</i></p> <p>API Specification 6A, <i>Specification for Wellhead and Christmas Tree Equipment</i></p> <p>API Specification 14A, <i>Specification for Subsurface Safety Valve Equipment</i></p> <p>API Recommended Practice 14B, <i>Design, Installation, Repair and Operation of Subsurface Safety Valve Systems</i></p> <p>API Recommended Practice 14E, <i>Recommended Practice for Design and Installation of Offshore Production Platform Piping Systems</i></p> <p>API Specification 10A, <i>Specification for Cements and Materials for Well Cementing</i></p> <p>ASTM C150/C150M <i>Standard Specification for Portland Cement</i></p> <p>API Recommended Practice 65-2, <i>Isolating Potential Flow Zones During Well Construction</i></p> <p>API Recommended Practice 10D-2, <i>Recommended Practice for Centralizer Placement and Stop Collar Testing</i></p> <p>API Technical Report 10TR4, <i>Technical Report on Considerations Regarding Selection of Centralizers for Primary Cementing Operations</i></p> <p>API Technical Report 10TR1, <i>Cement Sheath Evaluation</i></p> <p>API Guidance Document HF1, <i>Hydraulic Fracturing Operations-Well Construction and Integrity Guidelines</i></p> <p>API Guidance Document HF2, <i>Water Management Associated with Hydraulic Fracturing</i></p> <p>API Guidance Document HF3, <i>Practices for Mitigating Surface Impacts Associated with Hydraulic Fracturing</i></p> <p>API Bulletin E3, <i>Well Abandonment and Inactive Well Practices for U.S. Exploration and Production Operations, Environmental Guidance Document</i></p> <p>API Recommended Practice 49, <i>Recommended Practice for Drilling and Well Servicing Operations Involving Hydrogen Sulfide</i></p> <p>API Recommended Practice 54, <i>Recommended Practice for Occupational Safety for Oil and Gas Well Drilling and Servicing Operations</i></p> <p>API Recommended Practice 53, <i>Blowout Prevention Equipment Systems for Drilling Wells</i></p> <p>API 5C2, <i>Bulletin for Performance Properties of Casing, Tubing, and Drillpipe</i></p> <p>API Recommended Practice 10F, <i>Recommended Practice for Performance Testing of Cementing Float Equipment</i></p> <p>API Technical Report 10TR3, <i>Technical Report on Temperatures for API Cement Operating Thickening Time Tests – 1993 Report from the AP/ Task Group on Cementing Temperature Schedules</i></p>						
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature
CJG	07/26/2017	ETB	07/26/2017			

		Re-Completion Program		Project No: F1252			
		East Cheyenne Gas Storage ECGS Well Roper No. 1 Workover Procedure		Date: July 2017			
				Page: 27 of 27			
Well No: Roper No. 1		State: Colorado		County: Logan		Field: Lewis Creek	
API No: 05-075-08449		Operator: East Cheyenne Gas Storage		Location: 013 11N 53W		Status: Dry and Abandoned	
<p>U.S. Bureau of Safety and Environmental Enforcement Report RLS0116, "Cement Plug Testing: Weight vs Pressure Testing to Assess Viability of a Wellbore Seal Between Zones"</p> <p>ISO 31000 <i>Risk Management-Principles and guidelines</i></p> <p>ISO 31010, <i>Risk management-Risk assessment techniques</i></p> <p>ISO 55000 Asset Management-PAS 55-1:2008, <i>Asset management – Part 1: Specification for the optimized management of physical assets</i></p> <p>PAS 55-2:2008, <i>Asset management – Part 2: Guidelines for the application of PAS 55-1</i></p> <p>ASME 831.8S, <i>Managing System Integrity of Gas Pipelines</i>, 2004 <i>Pipeline Risk Management Manual</i>, 3rd Edition, 2004</p> <p>Ibrahim, M.A., Tek, M.R., and Katz, D.L., 1970. "Threshold Pressure in Gas Storage", Project 26-47 of the Pipeline Research Committee, American Gas Association at the University of Michigan; American Gas Association, Arlington, VA</p> <p>Survey of Underground Natural Gas Storage in the United States and Canada: 2013/2014," American Gas Association</p>							
PREPARED BY	DATE	APPROVED BY	DATE	CLIENT APPROVAL	DATE	Client Signature	
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