

US EPA ARCHIVE DOCUMENT

ATTACHMENT D: INJECTION WELL PLUGGING PLAN

Facility Name: FutureGen 2.0 Morgan County CO₂ Storage Site
IL-137-6A-0004 (Well #4)

Facility Contacts: Kenneth Humphreys, Chief Executive Officer,
FutureGen Industrial Alliance, Inc., Morgan County Office,
73 Central Park Plaza East, Jacksonville, IL 62650, 217-243-8215

Location of Injection Well: Morgan County, IL; 26–16N–9W; 39.800266°N and 90.07469°W

The FutureGen Alliance shall comply with the reporting and notification provisions in 40 CFR 146.92.

Immediately Prior to Well Plugging:

Per the requirements at 40 CFR 146.92, The FutureGen Alliance must:

1. Flush each injection well with a buffer fluid;
2. Determine the bottomhole reservoir pressure using methods and procedures identified in Attachment C – Testing and Monitoring Plan; and
3. Demonstrate external mechanical integrity using methods and procedures identified in Attachment C – Testing and Monitoring Plan.

Information on Plugs:

Cementing to Plug and Abandon Data	Plug #1	Plug #2	Plug #3	Plug #4	Plug #5	Plug #6	Plug #7
Diameter of Boring in Which Plug Will Be Placed (in)	7	7	7	7	7	7	
Depth to Bottom of Tubing or Drill Pipe (MD) (ft)	6,004 or 7,004 ^(a)	3,900	3,100	1,800	1,500	700	
Sacks of Cement to Be Used (each plug) (sks)	451 or 665 ^(a)	149	0	53	0	124	
Slurry Volume to Be Pumped (ft ³)	505 or 745 ^(a)	167	271	63	167	146	
Slurry Weight (lb/ft ³)	15.8	15.8	8.6	15.6	8.6	15.6	
Top of Plug (MD) (ft)	3,900	3,100	1,800	1,500	700	0	
Bottom of Plug (MD) (ft)	6,004 or 7,004 ^(a)	3,900	3,100	1,800	1,500	700	
Type of Cement or Other Material	EverCrete	EverCrete	6% Gel	Class A	6% Gel	Class A	
Method of Emplacement (e.g., balance method, retainer method, or two-plug method)	Balance	Method					
(a) This value applies to injection wells completed with a 2,500 ft lateral. MD = measured depth.							

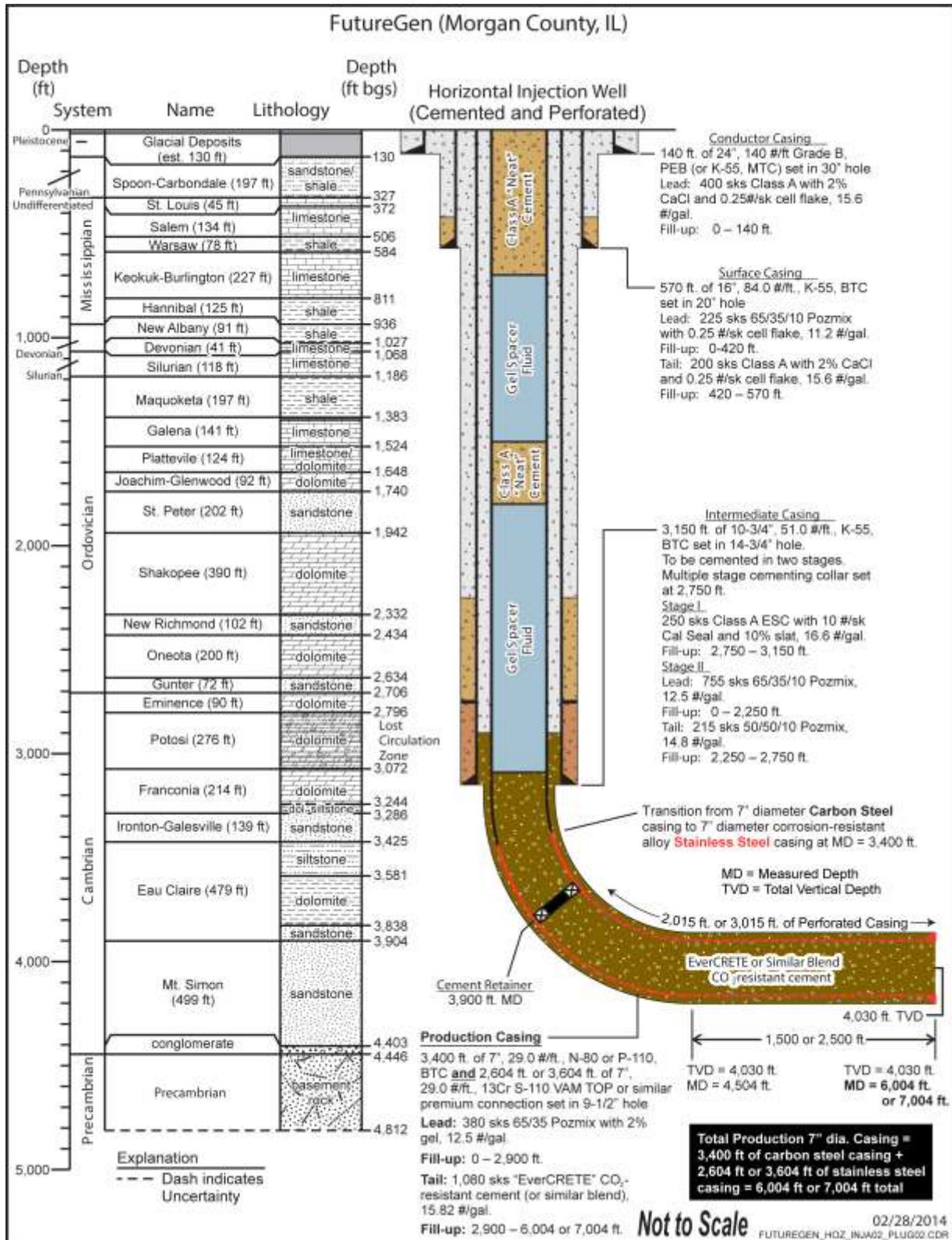
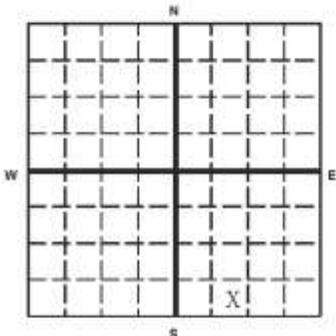


Figure 1. Diagram of Injection Well after Plugging and Abandonment (geology and depths shown in this diagram are based on site-specific characterization data obtained from the FutureGen 2.0 Stratigraphic Well).



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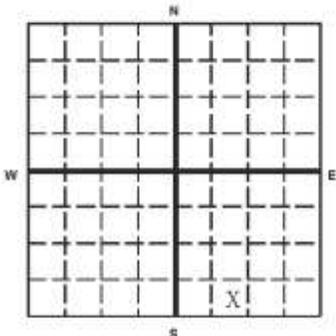
PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility Morgan County Class VI UIC Well #1 (ceased well completion, 1,500 ft lateral) [address not yet available]		Name and Address of Owner/Operator FutureGen Alliance, Inc 73 Central Park Plaza East, Jacksonville, IL 62650					
Locate Well and Outline Unit on Section Plat - 640 Acres 	State: Illinois County: Morgan Permit Number: not yet issued	Surface Location Description SE 1/4 of SE 1/4 of SW 1/4 of SE 1/4 of Section 26 Township 10N Range 9W					
	Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location: [] ft. from (N-S) [] Line of quarter section and [] ft. from (E-W) [] Line of quarter section.						
	TYPE OF AUTHORIZATION <input checked="" type="checkbox"/> Individual Permit <input type="checkbox"/> Area Permit <input type="checkbox"/> Rule Number of Wells: 1 Leave Name: []		WELL ACTIVITY <input type="checkbox"/> CLASS I <input type="checkbox"/> CLASS II <input type="checkbox"/> Brine Disposal <input type="checkbox"/> Enhanced Recovery <input type="checkbox"/> Hydrocarbon Storage <input type="checkbox"/> CLASS III Well Number: []				
CASING AND TUBING RECORD AFTER PLUGGING							
SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE			
24"	140.0	140'	140'	30"			
16"	84.0	570'	570'	20"			
10 3/4"	51.0	3,350'	3,150'	14 3/4"			
7"	29.0	6,004'	6,004'	9 1/2"			
METHOD OF EMPLACEMENT OF CEMENT PLUGS							
<input checked="" type="checkbox"/> The Balance Method							
<input type="checkbox"/> The Dump Bailer Method							
<input type="checkbox"/> The Two-Plug Method							
<input type="checkbox"/> Other							
CEMENTING TO PLUG AND ABANDON DATA:							
	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inches)	7"	7"	7"	7"	7"	7"	
Depth to Bottom of Tubing or Drill Pipe (ft)	6,004	3,200	3,100	1,800	1,500	700	
Bags of Cement To Be Used (each plug)	451	149	0	53	0	124	
Slurry Volume To Be Pumped (cu. ft.)	505	167	271	63	167	146	
Calculated Top of Plug (ft.)	3,900	3,100	1,800	1,500	700	0 (31L)	
Measured Top of Plug (if tagged ft.)	3,900	3,100	1,800	1,500	700	0 (31L)	
Slurry Wt. (Lb./Gal.)	15.82	15.82	8.6	15.6	8.6	15.6	
Type Cement or Other Material (Class III)	EverCrete	EverCrete	6% Gel	Class A	6% Gel	Class A	
LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)							
From	To	From	To				
7" perforated casing	3,950 ft MD	6,004 ft MD					
Name and Official Title (Please type or print) Kenneth K. Humphreys, Chief Executive Officer	Signature 	Date Signed 03/03/2014					



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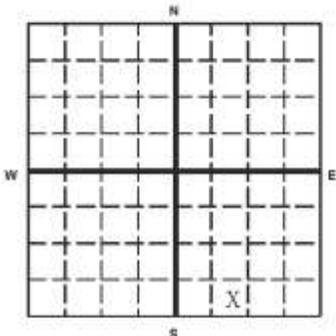
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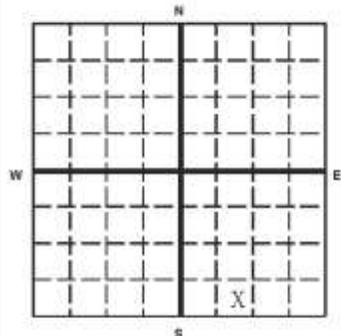
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	Locate well in two directions from nearest lines of quarter section and drilling unit Surface Location <input type="checkbox"/> ft. from (N-S) <input type="checkbox"/> Line of quarter section and <input type="checkbox"/> ft. from (E-W) <input type="checkbox"/> Line of quarter section.																																																																																													
TYPE OF AUTHORIZATION <input checked="" type="checkbox"/> Individual Permit <input type="checkbox"/> Area Permit <input type="checkbox"/> Rule Number of Wells <input type="text" value="1"/>		WELL ACTIVITY <input type="checkbox"/> CLASS I <input type="checkbox"/> CLASS II <input type="checkbox"/> Brine Disposal <input type="checkbox"/> Enhanced Recovery <input type="checkbox"/> Hydrocarbon Storage <input type="checkbox"/> CLASS III																																																																																												
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Certification I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)																																																																																														
Name and Official Title (Please type or print) Kenneth K. Humphreys, Chief Executive Officer		Signature 	Date Signed 03/03/2014																																																																																											