The U.S. CO_2 Enhanced Oil Recovery Survey

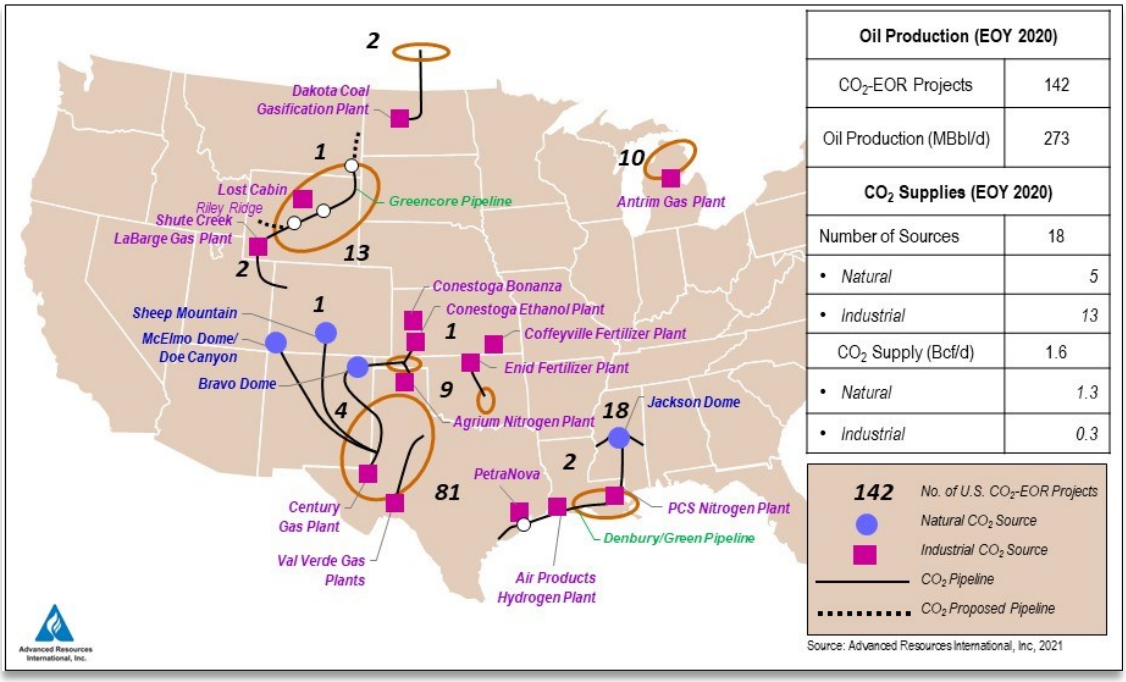
An interim update of enhanced oil production totals and CO_2 supplies for active CO_2 EOR projects in the U.S. as of end-of-year 2020.

Advanced Resources International has completed an interim update of the U.S. CO_2 Enhanced Oil Recovery Survey for active CO_2 EOR projects as of the end-of-year 2020.

The updated survey shows that incremental oil recovery from CO_2 EOR in the U.S. was approximately 273,000 b/d in 2020 — a decline of about 9% from the 2019 Survey total of 299,000 b/d. The updated survey also shows a total of 1.6 Bcf/d of CO_2 was supplied for CO_2 EOR in 2020, including about 1.3 Bcf/d from natural sources and 0.3 Bcf/d from industrial sources. This is a decline of about 47% compared to the 2019 Survey CO_2 supply total of 3.0 Bcf/d.

Supplies of CO_2 captured from industrial sources, including natural gas processing plants, nitrogen plants, and ammonia plants, declined significantly from 2019 to 2020. Low oil and gas prices contributed to a much lower rate of natural gas processing at plants that capture CO_2 emissions for CO_2 EOR.

However, increasing oil and gas prices in 2021 may lead to a rebound in CO_2 EOR oil production and CO_2 supply. Furthermore, as the 45Q tax incentive for storing anthropogenic CO_2 is finalized, CO_2 EOR remains an attractive option for generating revenue while storing CO_2 emissions.



Oil Production (EOY 2020)	
CO_2-EOR Projects	142
Oil Production (MBbl/d)	273
CO_2 Supplies (EOY 2020)	
Number of Sources	18
• *Natural*	*5*
• *Industrial*	*13*
CO_2 Supply (Bcf/d)	1.6
• *Natural*	*1.3*
• *Industrial*	*0.3*

142 — No. of U.S. CO_2-EOR Projects
Natural CO_2 Source
Industrial CO_2 Source
CO_2 Pipeline
CO_2 Proposed Pipeline

Source: Advanced Resources International, Inc, 2021

Survey at a Glance

Total projects: 142

Total operators: 23

Total CO_2 EOR oil prod.: 273,00 bbl/d

- **Permian Basin (TX, NM):** 185,000 bbl/d
- **SE Gulf Coast (MS,LA,TX):** 39,000 bbl/d
- **Mid-Continent (OK, KS):** 10,000 bbl/d
- **Rockies (CO,UT,WY,MT):** 37,000 bbl/d
- **Michigan:** 500 bbl/d

Total CO_2 Supply: 1.6 Bcf/d

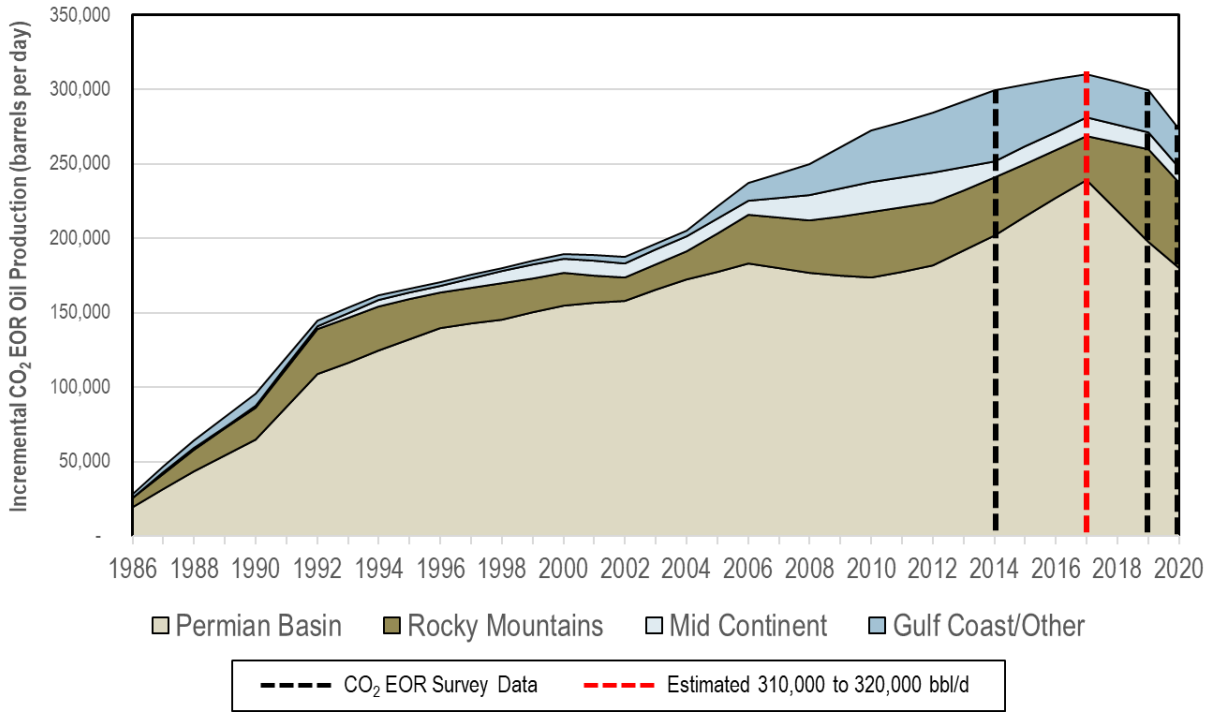
- **"Natural" CO_2:** 1.3 Bcf/d
- **"Industrial" CO_2:** 0.3 Bcf/d

The U.S. CO_2 EOR Survey report is compiled and provided as a public resource by Advanced Resources International. Special thanks to Mr. Steve Melzer of Melzer Consulting and Lon Whitman of the Enhanced Oil Recovery Institute (EORI) for providing valuable information on CO_2 EOR projects and CO_2 supplies as part of the U.S. CO_2 EOR Survey. Additional thanks to Ms. Cayman Kelly for conducting incremental oil recovery decline curve analysis as part of this update. The next update to the U.S. CO_2 EOR Survey is anticipated for the Fall of 2022.

For more information, please contact Mr. Matt Wallace via e-mail at mwallace@adv-res.com.

Advanced Resources International, Inc.

Chart of U.S. CO_2 EOR Production



The chart above shows the history of incremental oil production using CO_2 EOR in the U.S. The 2014 OGJ EOR Survey and the 2019/2020 U.S. CO_2 EOR Survey Updates provide the most recent official estimates of incremental oil recovery from CO_2 EOR. However, no official survey was conducted between 2014 and 2019. The 2017 total, which is based on an informal survey of the data, is estimated between 310,000 and 320,000 barrels per day.

CO_2 EOR Resiliency

Incremental oil production from CO_2 EOR in the U.S. declined 8.7% from 2019 to 2020. This is similar to the 8.2% decline in total U.S. crude oil production over the same time period. However, incremental oil production was maintained despite a significant decline in CO_2 supplies of over 46%.

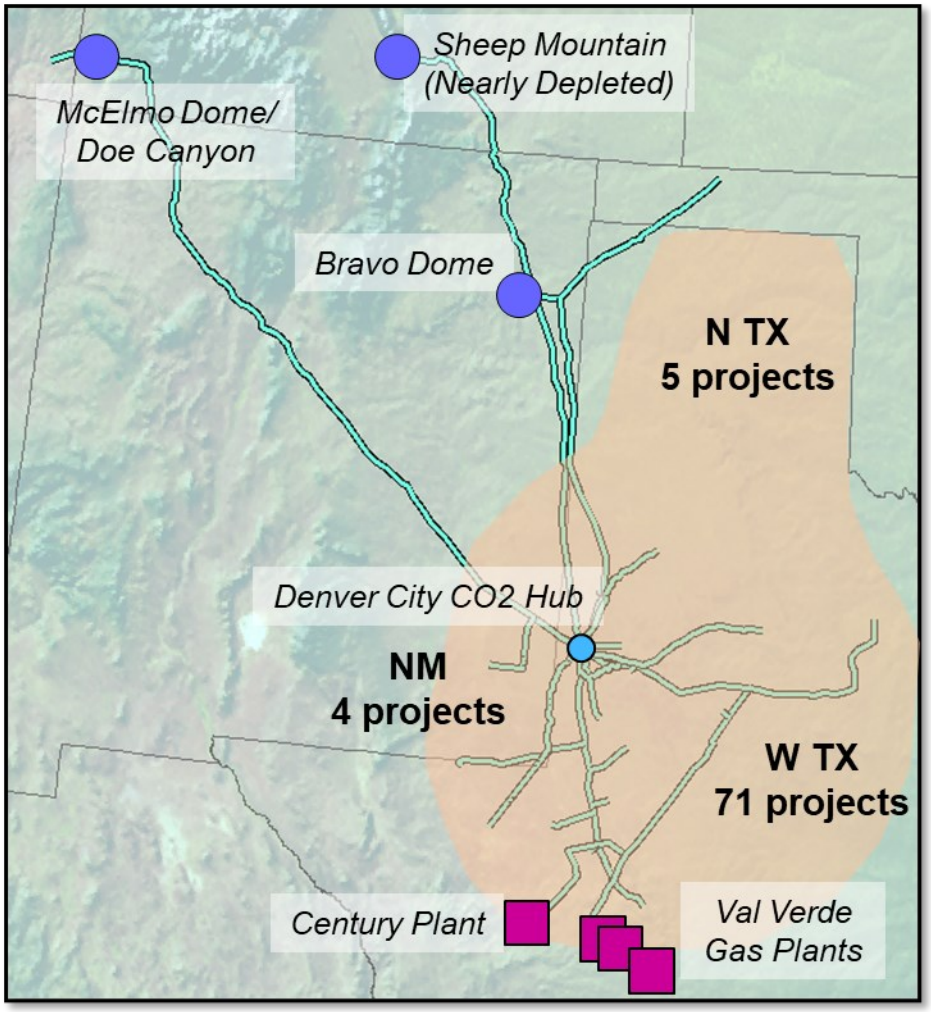
This data shows the U.S. CO_2 EOR industry is resilient and able to adjust to changing market conditions. Increased volumes of recycled CO_2 were able to sustain incremental oil production during 2020.

It is anticipated that increasing natural gas and energy prices will help return the volume of CO_2 supplies for EOR to 3.0+ Bcf/d in the near-term, thus increasing the net volume of CO_2 storage realized with CO_2 EOR. Furthermore, additional carbon capture and realization of 45Q tax credits should increase the volume of industrial sources of CO_2 stored with CO_2 EOR over the next decade.

Change in CO_2 EOR and CO_2 Supply (2019 to 2020)

U.S. CO_2 EOR	2019	2020	% Decline
Incremental Oil Production (MMbbl/d)	0.299	0.273	8.7%
CO_2 Supply/Storage (Bcf/d)	3.0	1.6	46.7%
CO_2 Utilization (Mcf/bbl)	10.0	5.9	

The Status of Permian Basin CO_2 EOR



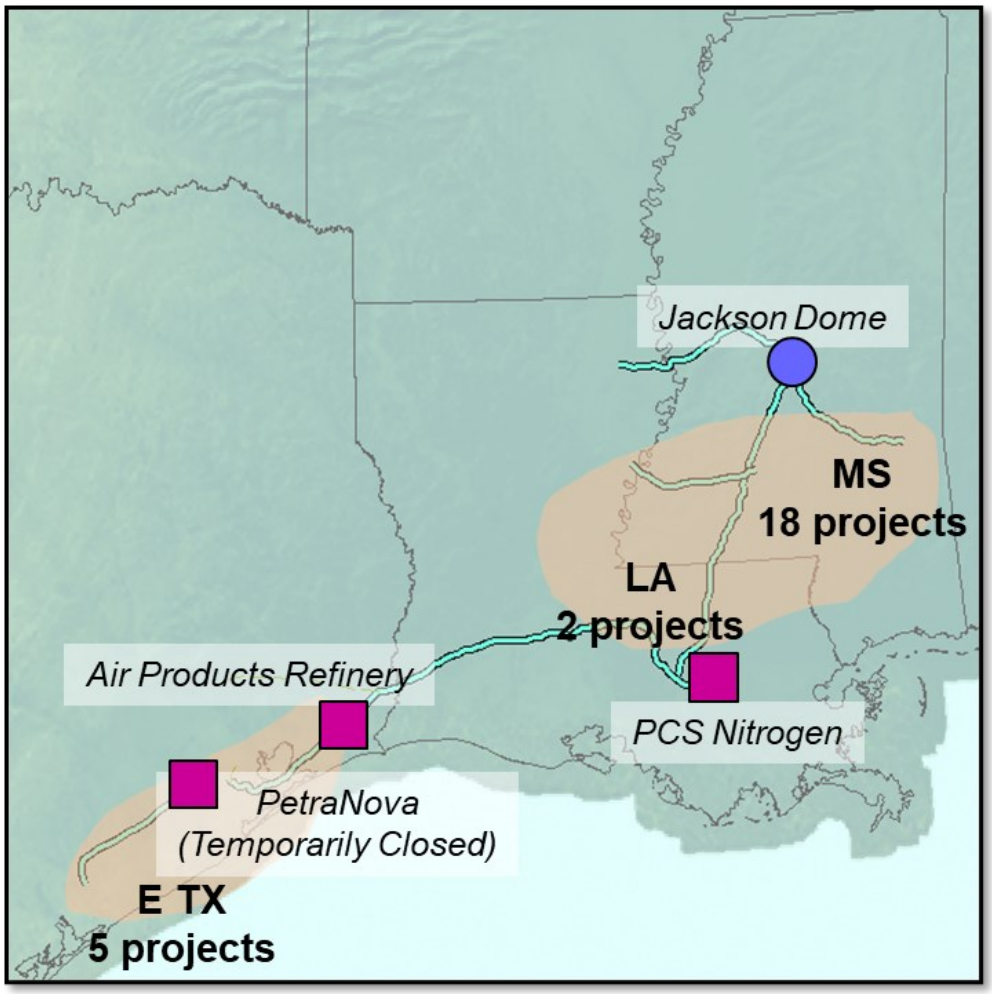
Enhanced oil recovery production in the Permian Basin declined from 204,000 b/d in 2019 to 185,000 b/d in 2020. A total of 13 operators own the 80 active CO_2 EOR projects in the Permian Basin -- 76 projects in North and West Texas and 4 projects in New Mexico.

The largest CO_2 EOR operator in the Permian Basin is Oxy Petroleum, who operates a total of 38 CO_2 floods that produce over 100,000 b/d.

Total CO_2 supply for EOR declined from 1,830 MMcf/d in 2019 to 1,010 MMcf/d in 2020. CO_2 in the Permian Basin is supplied from four natural sources (McElmo Dome, Doe Canyon, Bravo Dome, and Sheep Mountain) and two industrial sources (Century Plant and the Val Verde Gas Plants).

CO_2 EOR Projects		2019 Survey	2020 Survey
Operators		14	13
Enhanced Recovery (MB/D)		204	185
Projects	TX	76	76
	NM	4	4
	Total	80	80
CO_2 Sources	Natural	4	4
	Industrial	2	2
	Total	6	6
CO_2 Supply (MMcf/D)	Natural	1,500	935
	Industrial	330	75
	Total	1,830	1,010

The Status of Gulf Coast CO_2 EOR



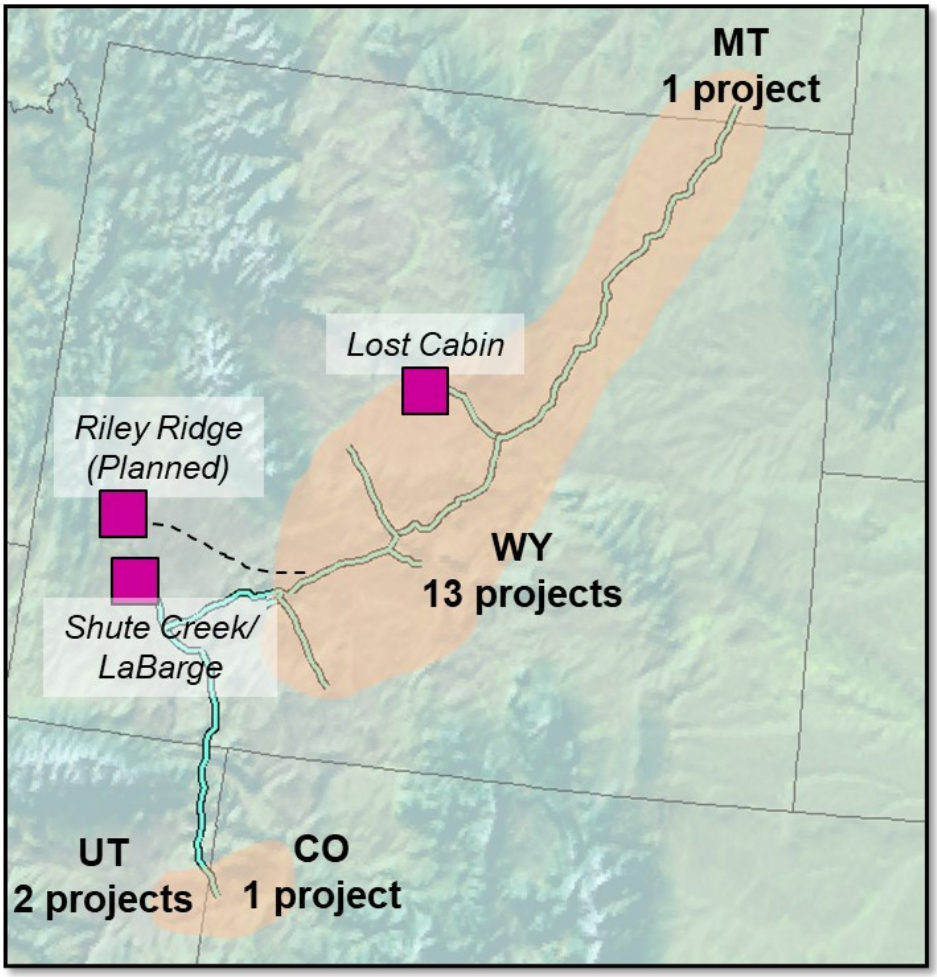
Enhanced oil recovery production in the Gulf Coast declined from 43,000 b/d in 2019 to 39,000 b/d in 2020. A total of four operators own the 25 active CO_2 EOR projects in the Gulf Coast -- 18 projects in Mississippi, 2 projects in Louisiana, and 5 projects in East Texas.

The largest CO_2 EOR operator in the Gulf Coast is Denbury, who operates a total of 21 CO_2 floods that produce approximately 33,500 b/d.

Total CO_2 supply for EOR declined from 600 MMcf/d in 2019 to 360 MMcf/d in 2020. CO_2 in the Gulf Coast is supplied from one natural source (Jackson Dome) and three industrial sources (PCS Nitrogen, Air Products Refinery, and PetraNova, which is did not capture CO_2 in 2020).

CO_2 EOR Projects		2019 Survey	2020 Survey
Operators		4	4
Enhanced Recovery (MB/D)		43	39
Projects	MS	18	18
	TX	5	5
	LA	2	2
	Total	25	25
CO_2 Sources	Natural	1	1
	Industrial	3	3
	Total	4	3
CO_2 Supply (MMcf/D)	Natural	450	300
	Industrial	150	60
	Total	600	360

The Status of Rockies CO_2 EOR



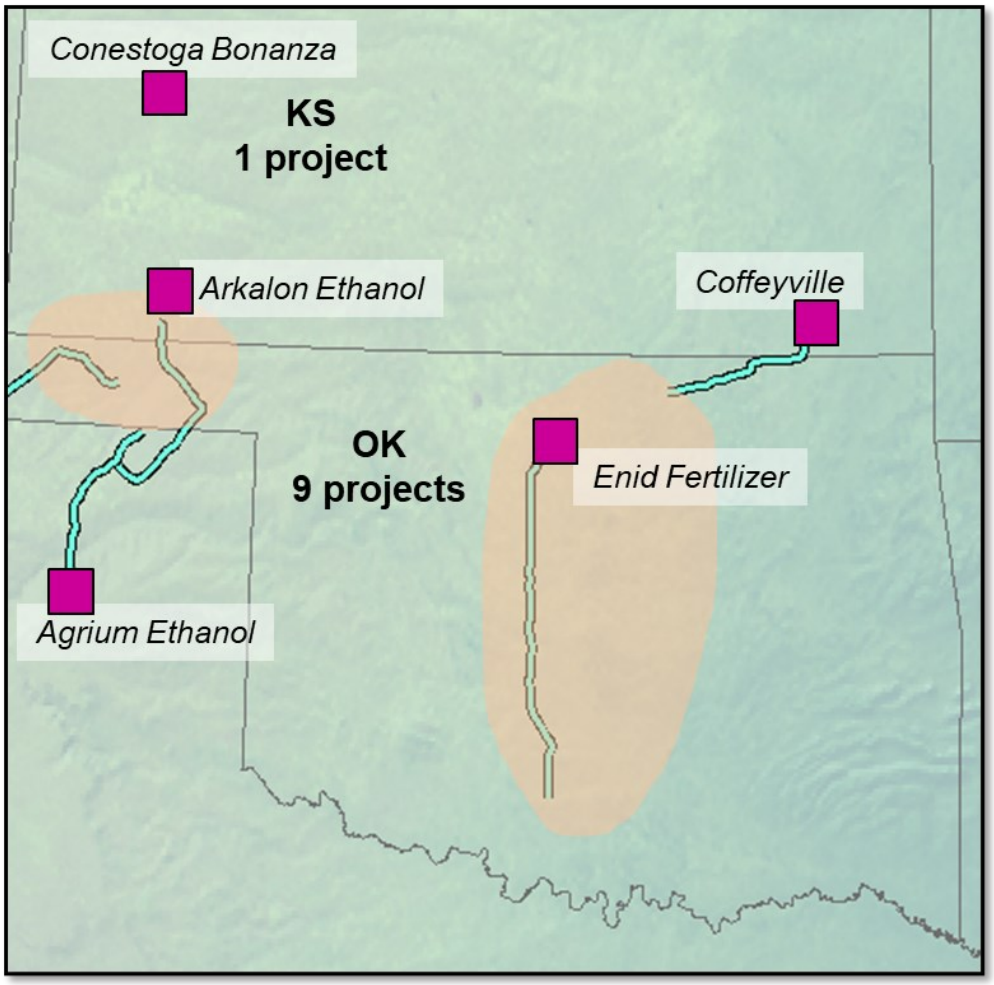
Enhanced oil recovery production in the Rockies declined from 39,000 b/din 2019 to 37,000 b/d in 2020. A total of five operators own the 17 active CO_2 EOR projects in the Rockies -- 13 projects in Wyoming, 2 projects in Utah, 1 project in Montana, and 1 project in Colorado.

The largest CO_2 EOR operator in the Rockies is Fleur De Lis, who operates a total of 6 CO_2 floods that produce approximately 15,700 b/d.

Total CO_2 supply for EOR declined from 445 MMcf/d in 2019 to 110 MMcf/d in 2020. CO_2 in the Rockies is supplied from one natural source (McElmo Dome to Aneth) and two industrial sources (Shute Creek/LaBarge, and Lost Cabin, which did not supply CO_2 for most of 2020).

CO_2 EOR Projects		2019 Survey	2020 Survey
Operators		6	5
Enhanced Recovery (MB/D)		39	37
Projects	WY	13	13
	UT	2	2
	CO	1	1
	MT	1	1
	Total	17	17
CO_2 Sources	Natural	1	1
	Industrial	2	2
	Total	3	3
CO_2 Supply (MMcf/D)	Natural	50	25
	Industrial	395	85
	Total	445	110

The Status of Mid Continent CO_2 EOR



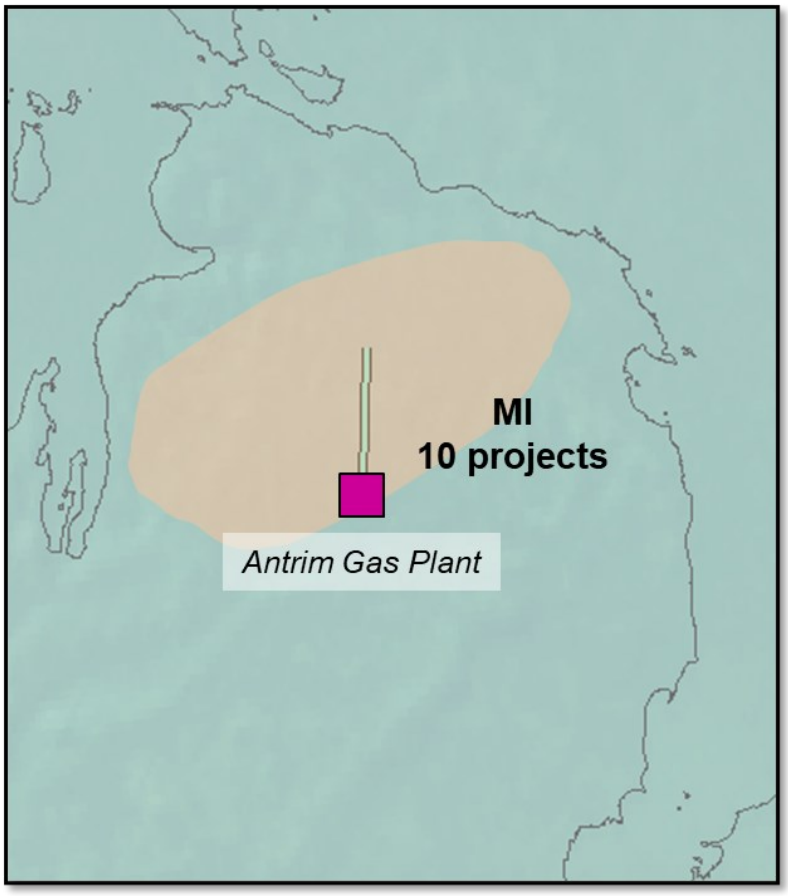
Enhanced oil recovery production in the Mid Continent declined from 11,000 b/d in 2019 to 10,000 b/d in 2020. A total of four operators own the 10 active CO_2 EOR projects in the Rockies -- 9 projects in Oklahoma, and 1 project in Kansas.

The largest CO_2 EOR operator in the Mid Continent is Maverick Energy, who operates a total of 4 CO_2 floods that produce approximately 6,000 b/d.

Total CO_2 supply for EOR declined from 135 MMcf/d in 2019 to 120 MMcf/d in 2020. CO_2 in the Mid Continent is supplied from one natural source (Bravo Dome to Postle) and five industrial sources (Coffeyville, Enid fertilizer, Agrium Ethanol, Arkalon Ethanol, and Conestoga Bonanza).

CO_2 EOR Projects		2019 Survey	2020 Survey
Operators		4	4
Enhanced Recovery (MB/D)		11	10
Projects	OK	9	9
	KS	1	1
	Total	10	10
CO_2 Sources	Natural	1	1
	Industrial	5	5
	Total	6	6
CO_2 Supply (MMcf/D)	Natural	35	25
	Industrial	100	95
	Total	135	120

The Status of Michigan CO_2 EOR



Enhanced oil recovery production in Michigan declined from 1,400 b/din 2019 to 500 b/d in 2020. One operator, Core Energy, owns all 10 active CO_2 EOR projects in Michigan.

Total CO_2 supply for EOR declined from 135 MMcf/d in 2019 to 120 MMcf/d in 2020. CO_2 in the Mid Continent is supplied from one natural source (Bravo Dome to Postle) and five industrial sources (Coffeyville, Enid fertilizer, Agrium Ethanol, Arkalon Ethanol, and Conestoga Bonanza).

CO_2 EOR Projects		2019 Survey	2020 Survey
Operators		1	1
Enhanced Recovery (MB/D)		1.4	0.5
Projects	MI	10	9
	Total	10	9
CO_2 Sources	Natural	0	0
	Industrial	1	1
	Total	1	1
CO_2 Supply (MMcf/D)	Natural	0	0
	Industrial	20	20
	Total	20	20

A Survey of U.S. CO2 Enhanced Oil Recovery Projects

2020 Operator	Field	State	Start Date	Area	Prod.	Inj.	Pay Zone	Lithology	Porosity	Soi	Sor	Avg.Perm.	Depth	Gravity	Oil Visc.	Res. Temp.	Prev. Prod.	2020 Tot. Prod.	2020 Enh. Prod.
				(ac)	Wells	Wells			(%)	(%)	(%)	(md)	(ft)	(Deg API)	(cp)	(Deg F)		bbl/d	bbl/d
Amplify Energy Operations	Lost Soldier	WY	5/1/1989	1,795	46	64	Tensleep	SS	11.0	90	-	10	5,600	35	1.3	158	WF	913	913
Amplify Energy Operations	Lost Soldier	WY	5/89	490	19	29	Darwin-Madison	S/LS-Dolo.	13.0	89	-	4	5,800	35	1.3	162	WF	840	840
Amplify Energy Operations	Lost Soldier	WY	6/96	80	9	14	Cambrian	SS	12.3	85	-	19	6,500	35	1.2	174	WF	226	226
Amplify Energy Operations	Wertz	WY	10/86	1,540	35	52	Tensleep	SS	10.0	90	-	20	6,600	35	1.2	176	WF	1,217	1,217
Amplify Energy Operations	Wertz	WY	3/99	890	16	26	Darwin-Madison	S/LS-Dolo.	10.0	89	-	5	6,800	35	1.0	180	WF	668	668
				4,795	**125**	**185**												**3,864**	**3,864**
Apache	Adair San Andres	TX	1997	5,338	102	33	San Andres	Dolo.	14.1	-	-	4	4,789	34	-	104	WF	1,536	1,128
Apache	Adair Wolfcamp	TX	2004	2,550	8	7	Wolfcamp	Dolo.	12.4	-	-	28	8,500	42	-	126	WF	27	16
Apache	Roberts	TX	2012	13,600	201	55	San Andres	Dolo.	8.5	-	-	-	-	-	-	-		1,616	1,185
Apache	Slaughter	TX	5/85	569	188	94	San Andres	Dolo.	12.5			6	4,900	32	1.3	110	WF	1,214	1,214
Apache	Slaughter Mallet	TX	6/89	8,559	123	102	San Andres	Dolo.	10.0	45	8	3	5,000	32	1.6	107	WF	1,289	1,289
				30,616	**622**	**291**												**5,681**	**4,831**
Chevron	Rangely Weber Sand	CO	10/86	19,153	347	303	Weber SS	SS	12.0	38	29	10	6,000	35	1.7	160	WF	8,245	5,776
Chevron	Mabee	TX	1/92	3,600	246	105	San Andres	Dolo.	9.0	36	10	4	4,700	32	2.3	104	WF	1,093	1,093
Chevron	Dollarhide (Devonian) Unit	TX	5/85	6,183	73	68	Devonian	Dolo./Trip.	13.5	35	22	9	8,000	40	0.4	122	Prim./WF	695	695
Chevron	Dollarhide (Clearfork "AB") Unit	TX	11/95	160	87	21	Clearfork	Dolo.	11.5	30	10	4	6,500	40	0.5	113	Prim./WF	378	378
Chevron	Vacuum	NM	7/97	1,268	217	89	San Andres	Dolo.	12.0	36	15	22	4,550	38	1.0	101	WF	4,134	3,927
				30,364	**970**	**586**												**14,545**	**11,870**
ConocoPhillips	South Cowden	TX	2/81	4,900	21	5	San Andres	Dolo.	11.7	70	50	11	4,500	38	1.0	101	Prim.	93	93
ConocoPhillips	Vacuum	NM	2/81	5,732	238	90	San Andres	Dolo.	11.7	70	50	11	4,500	38	1.0	101	Prim.	6,201	5,891
				10,632	**259**	**95**												**6,294**	**5,984**
Core Energy	Charlton 6	MI	2006	43	1	1	Silurian - A1/Niagaran	LS/Dolo.	4.0	79	46	0.1 - 100	5,450	43	0.8	103	Prim.	4	0
Core Energy	Charlton 30-31	MI	2005	250	2	3	Silurian - A1/Niagaran	LS/Dolo.	4.0	62	35	0.1 - 100	5,450	42	0.8	103	Prim.	111	111
Core Energy	Dover 33	MI	1996	82	3	1	Silurian - A1/Niagaran	LS/Dolo.	5.0	66	37	0.1 - 100	5,500	43	0.8	100	Prim	-	-
Core Energy	Dover 35	MI	2004	57	3	1	Silurian - A1/Niagaran	LS/Dolo.	3.0	72	36	0.1 - 100	5,500	41	0.8	101	Prim.	32	30
Core Energy	Dover 36	MI	1997	160	1	2	Silurian - A1/Niagaran	LS/Dolo.	3.0	64	41	0.1 - 100	5,600	42	0.8	102	Prim	35	32
Core Energy	Chester 5	MI	2010	150	1	2	Silurian - A1/Niagaran	LS/Dolo.	10.0	65	35	0.1 - 100	5,500	42	0.8	101	Prim.	25	23
Core Energy	Charlton 19	MI	2015	115	2	1	Silurian - A1/Niagaran	LS/Dolo.	8.0	69	38	0.1 - 100	5,200	43	0.8	102	Prim.	111	111
Core Energy	Chester 16	MI	2017	185	2	1	Silurian - A1/Niagaran	LS/Dolo.	4.0	90	52	0.1 - 101	5,800	42	0.8	102	WF	90	60
Core Energy	Chester 2-10A	MI	2009	153	3	1	Silurian - A1/Niagaran	LS/Dolo.	4.0	62	39	0.1 - 102	5,600	42	0.8	102	Prim	123	123
Core Energy	Bagley 11-14-23	MI	2015	450	4	3	Silurian - A1/Niagaran	LS/Dolo.	4.0	77	39	0.1 - 103	6,050	42	0.8	104	Prim.	51	9
				1,645	**22**	**16**												**582**	**499**
Daylight Petroleum	Golden Trend Northeast Purdy	OK	9/82	3,400	84	49	Springer	SS	13.0	-	-	44	9,400	38	1.2	148	WF	942	942
Daylight Petroleum	Golden Trend Bradley	OK	2/97	700	29	12	Springer	SS	14.0	-	-	50	9,400	38	1.0	150	WF	419	398
				4,100	**113**	**61**												**1,361**	**1,340**
Denbury	Bell Creek	MT	5/13	21,771	111	102	Muddy	SS	23.0	-	-	1,035	4,500	36	2.8	108	Prim, WF	6,529	6,529
Denbury	Eucutta	MS	3/06	2,100	73	51	Eutaw, Tuscaloosa	SS	27.0	42	-	250	5,050	22	-	152	Prim./WF	1,924	1,761
Denbury	Martinville Wash-Fred 8500	MS	9/06	180	4	2	Wash-Fred 8500	SS	27.0	86	-	107	8,500	11	-	198	Prim	50	50
Denbury	Tinsley	MS	01/07	13,160	191	73	Woodruff	SS	23.0	30	-	500	5,000	34	-	164	Prim/WF	4,861	4,861
Denbury	Heidelberg, West	MS	12/08	2,500	110	52	Eutaw, Christmas	SS	28.0	37	-	300	4,800	22	-	152	WF	1,946	1,946
Denbury	East Heidelberg	MS	6/1/2011	857	113	59	Eutaw, Christmas, Tuscaloosa	SS	28.0	-	-	10-700	5,050	23	17.4	152	Prim, WF	3,745	3,630
Denbury	West Hastings	TX	12/1/2010	4,420	120	48	Frio	SS	30.0	30	-	1,000	5,700	31	1.2	165	Prim	5,957	5,957
Denbury	Hastings	TX	5/10	4,420	13	-	Frio	SS	30.0	-	-	1,000-2,000	5,700	36	-	165	Prim, WF	-	-
Denbury	Oyster Bayou	TX	12/1/2010	3,912	36	28	Frio	SS	25 - 28	-	-	210-2300	8,600	40	0.5	190	Prim, WF	4,401	4,401
Denbury	Little Creek	MS	1985	6,200	18	14	Lower Tuscaloosa	SS	23.0	44	-	90	10,750	40	-	250	WF	207	207
Denbury	Lazy Creek	MS	12/01	840	6	3	Lower Tuscaloosa	SS	23.4	27	-	65	10,400	39	-	242	Prim	68	68
Denbury	West Mallalieu	MS	11/01	3,574	34	24	Lower Tuscaloosa	SS	26.0	44	-	75	10,550	40	-	248	Prim	740	740
Denbury	East Mallalieu	MS	12/03	880	8	3	Lower Tuscaloosa	SS	26.0	52	-	75	10,550	40	-	248	Prim./WF	58	58
Denbury	McComb	MS	11/03	12,600	20	13	Lower Tuscaloosa	SS	26.0	52	-	90	10,900	40	-	250	Prim	398	398
Denbury	Smithdale	MS	3/05	4,100	17	7	Lower Tuscaloosa	SS	23.0	50	-	90	11,000	41	-	250	Prim	184	184
Denbury	Brookhaven	MS	1/05	9,200	61	48	Lower Tuscaloosa	SS	25.5	47	-	60	10,300	40	-	250	Prim./GI/WF	1,659	1,621
Denbury	Martinville Mooringsport	MS	3/06	280	2	-	Mooringsport	SS	18.0	55	-	40	11,550	38	-	244	WF	-	-
Denbury	Martinville Rodessa	MS	3/06	200	3	-	Rodessa	SS	12.0	64	-	200	11,600	42	-	250	WF	4	4
Denbury	Soso	MS	9/06	2,643	-	-	Rodessa 11,180	SS	17.0	55	-	171	11,500	45	-	228	WF	-	-
Denbury	Soso	MS	4/06	2,648	57	23	Bailey 11,701, Cotton Valley	SS	17.0	50	-	273	11,950	43	-	234	WF	820	820
Denbury	Cranfield	MS	07/08	7,750	32	25	Tuscaloosa	SS	23.0	32	-	100	10,300	39	-	260	Prim/GI	1,185	1,185
Denbury	Delhi	LA	11/1/2009	13,636	141	49	Tuscaloosa, Paluxy	SS	30.0	-	-	1,000	3,500	42	0.8	135	Prim, WF	6,661	5,624
Denbury	Grieve	WY	4/1/2018	2,280	15	11	Muddy	SS	20.0	-	-	275	6,700	37	-	138	Prim, GI	68	68
Denbury	Beaver Creek	WY	7/08	16,526	18	17	Madison	Dolo.	10.0	60	50	10	11,100	40	0.6	232	Prim./WF	1,728	1,728
				136,677	**1,203**	**652**												**43,194**	**41,841**

A Survey of U.S. CO2 Enhanced Oil Recovery Projects

2020 Operator	Field	State	Start Date	Area	Prod.	Inj.	Pay Zone	Lithology	Porosity	Soi	Sor	Avg.Perm.	Depth	Gravity	Oil Visc.	Res. Temp.	Prev. Prod.	2020 Tot. Prod.	2020 Enh. Prod.
				(ac)	Wells	Wells			(%)	(%)	(%)	(md)	(ft)	(Deg API)	(cp)	(Deg F)		bbl/d	bbl/d
Elk Petroleum	Aneth Unit	UT	10/98	16,800	301	1	Desert Creek	LS	12.0	80	37	5	5,700	42	0.6	129	WF	3,931	2,343
Elk Petroleum	McElmo Unit	UT	1/1/1985	12,640	113	2	Desert Creek	LS	14.0	80	37	5	5,600	41	0.6	125	WF	3,236	1,398
				29,440	**414**	**3**												**7,167**	**3,741**
Fasken	Hanford East	TX	3/97	340	7	3	San Andres	Dolo.	10.0	45	19	4	5,500	32	1.4	105	WF	25	25
Fasken	Hanford (San Andres)	TX	7/09	150	23	8	San Andres ROZ	Dolo	10.0	50	-	5	5,700	32	1.0	105	Prim.	162	48
Fasken	River Bend (Devonian)	TX	4/09	400	8	7	Devonian	Tripol.	23.7	55	46	5	5,500	42	0.5	105	WF	205	187
Fasken	Abell (Devonian)	TX	4/09	809	16	13	Devonian	Tripol.	21.9	45	-	3	5,300	42	0.5	105	WF	148	133
Fasken	Hanford	TX	7/86	1,120	30	29	San Andres	Dolo.	10.5	61	19	4	5,500	32	1.4	104	Prim.	187	187
				2,819	**84**	**60**												**727**	**579**
Fleur de Lis Energy	Patrick Draw Monell	WY	9/1/2003	6,400	111	74	Almond, UA-5	SS	20.0	60	34	30	4,750	43	0.5	108	Prim, WF	5,250	5,249
Fleur de Lis Energy	Salt Creek SD3	WY	10/1/2017	1,290	20	35	Sundance 3	SS	17.0	75	25	87	2,900	35	0.6	150	Prim	1,410	1,410
Fleur de Lis Energy	Salt Creek Southern Unit	WY	2012	570	40	34	Wall Creek 1 (Frontier)	SS	18.0	75	25	32	1,200	39	0.6	95	Prim, WF	680	680
Fleur de Lis Energy	Salt Creek Southern Unit	WY	2012	2,000	46	42	Wall Creek 2 (Frontier)	SS	19.0	77	23	52	2,200	37	0.6	100	Prim, WF	1,147	1,147
Fleur de Lis Energy	Salt Creek Phase 1-8	WY	1/04	6,800	309	366	Wall Creek 2 (Frontier)	SS	19.0	77	23	52	2,200	37	0.6	100	Prim, WF	6,410	6,410
Fleur de Lis Energy	Salt Creek Phase 7	WY	1/10	600	38	35	Wall Creek 1 (Frontier)	SS	18.0	75	25	32	1,200	37	0.6	95	Prim, WF	830	830
				17,660	**565**	**587**												**15,727**	**15,726**
Two P Partners	North Ward Estes	TX	5/07	16,300	671	402	Yates	SS	16.0	27	21	37	2,600	36	1.6	83	Prim./WF	4,710	4,673
				16,300	**671**	**402**												**4,710**	**4,673**
George R. Brown	Garza	TX	11/09	1,778	430	108	San Andres	Carbonate	-	-	-	-	3,000	-	-	-		1,199	347
				1,778	**430**	**108**												**1,199**	**347**
Great Western Drilling	Twofreds	TX	1/74	4,392	27	5	Delaware, Ramsey	SS	19.5	50	-	32	4,900	36	1.5	105	WF	44	44
				4,392	**27**	**5**												**44**	**44**
Kinder Morgan	Reinecke	TX	1/98	700	27	8	Cisco Canyon Reef	LS/Dolo.	10.4	35	10	170	6,700	44	0.4	139	WF	110	110
Kinder Morgan	SACROC	TX	1/72	50,000	519	428	Canyon	LS	4.0	78	39	19	6,700	39	0.7	135	Prim / WF	27,088	27,088
Kinder Morgan	Katz	TX	1/1/2011	7,200	62	90	Strawn	LS	16.5	70	40	75	4,950	38	2.2	117	Prim, WF	2,070	2,070
Kinder Morgan	Goldsmith-Landreth San Andres	TX		6,166	83	40	San Andres	Carbonate	12.0	80	35	32	4,100	35	1.3	95	Prim, WF	1,303	1,303
Kinder Morgan	Yates	TX	3/04	26,000	576	96	San Andres	Dolo.	17.0	75	54	175	1,400	30	6.0	82	GI	12,570	12,570
Kinder Morgan	Tall Cotton	TX	11/14	180	40	22	San Andres	Dolo.	10.9		35	5	5300	32	1.3	102		3,869	3,869
				90,246	**1,307**	**684**												**47,010**	**47,010**
Hillcorp Energy Company	West Ranch	TX		4,000	72	33	41A	SS	23-27	-	-	895	5750	32	0.7	171		1,827	1,827
Hillcorp Energy Company	West Ranch	TX		4,000	72	33	98A	SS	30.0	70	-	497	6100	41	0.3	178		1,827	1,827
				8,000	**144**	**66**												**3,655**	**3,655**
Maverick Energy	Postle - PUMU	OK	11/1/1995	4,032	43	36	Morrow	SS	16.0	75	25	10-40	6,200	40	1.3	145	WF	779	779
Maverick Energy	Postle - HMAU	OK	11/1/1995	3,396	38	29	Morrow	SS	16.0	75	25	10-40	6,200	40	1.3	145	WF	529	529
Maverick Energy	Poslte - WHMU	OK	1/1/1998	7,724	96	74	Morrow	SS	16.0	75	25	10-40	6,200	40	1.3	145	WF	2,076	2,076
Maverick Energy	Postle - HMU	OK	8/1/2007	5,415	61	43	Morrow	SS	16.0	75	25	10-40	6,200	40	1.3	145	WF	2,658	2,658
				20,567	**238**	**182**												**6,043**	**6,043**

A Survey of U.S. CO2 Enhanced Oil Recovery Projects

2020 Operator	Field	State	Start Date	Area	Prod.	Inj.	Pay Zone	Lithology	Porosity	Soi	Sor	Avg.Perm.	Depth	Gravity	Oil Visc.	Res. Temp.	Prev. Prod.	2020 Tot. Prod.	2020 Enh. Prod.
				(ac)	Wells	Wells			(%)	(%)	(%)	(md)	(ft)	(Deg API)	(cp)	(Deg F)		bbl/d	bbl/d
Occidental	Anton Irish	TX	4/1/1997	7,030	232	92	Clearfork	Dolo.	11.0	85	35	8	5,250	34	1.2	105	Prim., WF	3,072	2,491
Occidental	Cedar Lake	TX	8/1/1994	5,188	224	92	San Andres	Dolo.	10.0	81	36	2	4,850	32	1.4	108	WF	2,225	1,092
Occidental	Cogdell	TX	10/1/2001	15,000	127	78	Canyon Reef	LS	0.2	70	25	5	6,700	41	0.6	130	WF	4,058	4,004
Occidental	El Mar	TX	4/1/1994	7,100	7	2	Delaware	SS	16.0	40	-	20	4,500	41	1.1	97	Prim./WF	11	11
Occidental	GMK South	TX	10/1/1982	1,949	30	19	San Andres	Dolo.	11.0	55	37	2	5,400	32	1.4	108	Prim.	108	58
Occidental	Levelland (Levelland)	TX	9/1/2004	2,673	500	113	San Andres	Dolo.	8.5	69	20	3	4,950	32	1.4	105	WF	4,244	2,062
Occidental	Devonian Unit (Mid Cross)	TX	7/1/1997	1,085	15	7	Devonian	Tripol.	14.0	65	31	2	5,200	43	0.4	105	Prim., GI	291	291
Occidental	Devonian Unit (North Cross)	TX	4/1/1972	1,530	27	19	Devonian	Tripol.	18.0	65	31	3	5,250	44	0.4	105	Prim., GI	676	676
Occidental	North Cowden	TX	2/1/1995	465	734	513	Grayburg	Dolo.	11.0	55	36	2	4,200	32	1.4	108	WF	3,036	-
Occidental	North Dollarhide Devonian	TX	11/1/1997	1,280	28	17	Devonian	Tripol.	25.0	73	28	8	8,000	40	0.4	121	WF	1,187	594
Occidental	North Hobbs	NM	3/1/2003	21,258	181	123	San Andres	Dolo.	8.7	70	30	2	4,100	33	1.4	95	WF	7,333	5,518
Occidental	South Hobbs Unit	NM	7/7/2005	4,530	57	62	San Andres	Dolo.	12.0	32	35	8	4,400	34	1.0	105	WF	5,727	4,517
Occidental	Devonian Unit (South Cross)	TX	6/1/2988	2,747	95	47	Devonian	Tripol.	16.0	65	31	3	5,200	43	0.4	105	Prim., GI	4,140	3,992
Occidental	Salt Creek	TX	10/1/1993	15,000	222	111	Canyon	LS	0.2	70	25	5	6,700	41	0.6	130	WF	5,047	3,785
Occidental	Sharon Ridge	TX	2/1/1999	7,780	54	25	Canyon Reef	LS	7.0	81	30	5	2,300	28	2.7	108	WF	779	779
Occidental	Slaughter (Alex Slaughter Estate)	TX	36739	4,530	1	4	San Andres	Dolo./LS	15.0	52	35	20	4,100	34	1.0	105	WF	55	30
Occidental	Slaughter (Central Mallet Unit)	TX	12/1/1984	340	147	122	San Andres	Dolo.	14.9	72	30	4	4,900	32	2.0	97	WF	1,889	1,662
Occidental	Slaughter (Frazier Unit)	TX	12/1/1984	1,600	54	31	San Andres	Dolo./LS	11.4	50	23	3	4,500	34	1.0	100	WF	404	257
Occidental	Slaughter (H.T. Boyd)	TX	8/1/2001	6,304	38	23	San Andres	Dolo.	14.9	72	30	4	4,900	32	2.0	97	WF	517	465
Occidental	Slaughter (Igoe Smith)	TX	9/1/2005	16,381	40	24	San Andres	Dolo.	11.0	55	36	2	4,850	32	1.4	108	WF	1,292	541
Occidental	Slaughter (North West Mallet)	TX	1/1/1992	3,040	89	28	San Andres	Dolo.	12.6	68	31	2	5,200	31	1.1	90	WF	928	559
Occidental	Slaughter (Slaughter Estate Unit)	TX	12/1/1984	5,700	168	135	San Andres	Dolo./LS	11.0	82	35	4	5,000	32	1.4	108	WF	1,789	948
Occidental	Slaughter (Smith Igoe)	TX	8/5/2014	16,381	6	2	San Andres	Dolo.	11.0	55	36	2	4,850	32	1.4	108	WF	106	23
Occidental	Slaughter (West RKM Unit)	TX	11/1/2006	3,896	144	175	San Andres	Dolo.	11.0	71	32	4	4,900	32	1.4	105	WF	1,516	859
Occidental	South Wasson Clearfork	TX	10/1/1984	4,720	86	41	Clearfork	Dolo.	7.0	70	35	2	6,600	35	1.1	120	WF	918	-
Occidental	South Welch	TX	9/1/1993	5,428	116	42	San Andres	Dolo.	10.0	72	32	2	5,000	32	1.4	105	WF	411	210
Occidental	T-Star (Slaughter Consolidated)	TX	7/1/1999	4,472	58	26	Abo	Dolo.	6.2	75	45	2	7,600	30	1.9	135	Prim.	1,603	1,603
Occidental	Wasson (BRU)	TX	6/1/1995	1,246	225	139	San Andres	Dolo.	11.1	84	35	4	5,040	32	1.4	100	WF	5,344	4,907
Occidental	Wasson (Denver Unit)	TX	4/1/1983	27,000	1,097	533	San Andres	Dolo.	9.2	51	38	3	4,925	33	1.2	105	WF	20,731	20,639
Occidental	Wasson (ODC Unit)	TX	11/1/1984	2,820	348	301	San Andres	Dolo./LS	12.0	49	30	18	4,900	34	3.4	92	WF	7,567	5,830
Occidental	Wasson (Willard Unit)	TX	1/1/1986	26,423	408	250	San Andres	Dolo.	17.0	56	40	175	1,400	30	7.6	82	WF	6,516	6,365
Occidental	West Welch	TX	10/1/1997	13,379	313	129	San Andres	Dolo.	9.0	85	35	1	5,250	32	1.2	105	WF	830	-
Occidental	Levelland (South East Levelland)	TX	4/11/2014	1,581	184	68	San Andres	Dolo	9.9	49	32	1	4,800	32	1.4	108	WF	1,989	1,302
Occidental	West Seminole San Andres Unit	TX	7/1/2013	17,347	85	35	San Andres	Dolo	11.0	58	32	10	5,300	34	1.1	104	WF	4,040	3,876
Occidental	Seminole Unit	TX	3/1/1983	5,951	32	217	San Andres	Dolo	11.0	82	35	4	5,000	32	1.4	108	WF	19,728	19,728
Occidental	Slaughter (Sundown Unit)	TX	6/1/2017	7,879	52	25	San Andres	Dolo	11.0	85	35	5	5,250	32	1.2	105	WF	352	157
Occidental	Slaughter (West Sundown Unit)	TX	11/1/2018	11,954	128	51	San Andres	Dolo	13.3	49	33	3	4,900	34	3.4	92	WF	1,233	459
Occidental	COLLETT, EUGENIA	TX	8/1/2017	344	9	4	San Andres	Dolo	8.7	70	30	2	4,850	33	1.4	95	WF	208	-
				283,331	**6,361**	**3,725**												**121,902**	**100,292**
Orla Petco	East Ford	TX	7/95	1,953	11	4	Delaware, Ramsey	SS	23.0	49	36	30	2,680	40	0.8	82	Prim.	63	63
				1,953	**11**	**4**												**63**	**63**

A Survey of U.S. CO2 Enhanced Oil Recovery Projects

2020 Operator	Field	State	Start Date	Area	Prod.	Inj.	Pay Zone	Lithology	Porosity	Soi	Sor	Avg.Perm.	Depth	Gravity	Oil Visc.	Res. Temp.	Prev. Prod.	2020 Tot. Prod.	2020 Enh. Prod.
				(ac)	Wells	Wells			(%)	(%)	(%)	(md)	(ft)	(Deg API)	(cp)	(Deg F)		bbl/d	bbl/d
Perdure Petroleum	NW Velma Hoxbar	OK	9/1/2010	410	26	9	Hoxbar	SS	26.0	77	-	280	2,228	27	2.4	84	WF	123	93
Perdure Petroleum	Camrick	OK	4/01	2,320	38	32	Morrow	SS	15.0	52	-	63	7,260	39	2.2	152	WF	462	462
Perdure Petroleum	Burbank	OK	6/6/2013	50,000	650	500	Burbank	SS	17.0	70	30	50	3000	37	3.0	122	WF	3,016	2,049
Perdure Petroleum	East Seminole	TX	10/1/2013	160	12	4	San Andres	Dolomite	10.0	80	44	6	5,400	33	2.2	108	Prim./WF	368	309
Perdure Petroleum	Wellman	TX	7/1/1983	1,400	14	9	Wolfcamp	LS	9.2	35	10	100	9800	44	0.5	151	WF	1,121	1,121
Perdure Petroleum	North Perryton	TX	12/07	2,500	59	5	Upper Morrow	SS	15.2	52	-	63	7,300	38	2.0	152	WF	319	315
Perdure Petroleum	Albert Spicer Unit	TX	10/2009	577	5	2	Upper Morrow	SS	21.0	51	-	50	8,060	39	2.0	177	WF	91	91
Perdure Petroleum	Booker Trosper Unit	TX	10/2009	1,325	3	3	Upper Morrow	SS	20.0	56	-	50	8,060	39	2.0	177	WF	88	87
Perdure Petroleum	Gramstorff Unit	TX	10/2009	829	5	3	Upper Morrow	SS	21.0	57	-	109	8,060	39	2.0	177	WF	294	283
Perdure Petroleum	Farnsworth	TX	12/15/2010	10,300	33	18	Upper Morrow	SS	14.0	60	25	48	7,940	38	1.0	170	WF	1,167	1,138
Perdure Petroleum	Emma Field	TX	01/2015	-	164	11	San Andres	Carbonate	-	-	-	-	-	-	-	-		517	503
				69,821	**1,009**	**596**												**7,566**	**6,452**
PetroSantander	Stewart	KS	1/1/2012	8,500	53	40		SS	-	-	-	-	4,750	-	-	-		139	139
				8,500	**53**	**40**												**139**	**139**
Remnant Energy	Hansford Marmaton	TX	6/80	2,010	21	3	Marmaton	SS	18.1	43	-	48	6,500	44	1.6	142	Prim.	8	8
				2,010	**21**	**3**												**8**	**8**
Sabinal Energy	Slaughter Sundown	TX	1/94	5,500	180	135	San Andres	Dolo.	11.0	41	25	6	4,950	33	1.4	105	WF	2,741	2,741
Sabinal Energy	East Penwell (SA) Unit	TX	5/96	1,020	121	36	San Andres	Dolo.	10.0	55	40	4	4,000	34	2.0	86	WF	588	298
				6,520	**301**	**171**												**3,329**	**3,039**
Tellus	West Yellow Creek	MS	03/2017	3,500	24	-	Eutaw	SS	-	-	-	-	-	-	-	-		1,677	1,499
				3,500	**24**	**-**												**1,677**	**1,499**
TMR Exploration	Lockhart Crossing	LA	12/07	3,500	34	4	Wilcox	SS	20.0	32	-	30	10,100	40	-	212	Prim/WF	607	607
				3,500	**34**	**4**												**607**	**607**
XTO Energy Inc.	Goldsmith	TX	12/96	330	457	4	San Andres	Dolo.	11.6	-	-	32	4,200	35	-	105	WF	1,136	-
XTO Energy Inc.	Cordona Lake	TX	12/85	2,084	73	25	Devonian	Tripol.	22.0	-	-	4	5,500	40	0.5	101	WF	684	684
XTO Energy Inc.	Wasson (Cornell Unit)	TX	7/85	1,923	127	85	San Andres	Dolo.	8.6	-	-	2	4,500	33	1.0	106	WF	1,810	1,810
XTO Energy Inc.	Wasson (Mahoney)	TX	10/85	640	89	33	San Andres	Dolo.	13.0	54	39	6	5,100	33	1.0	110	WF	940	940
XTO Energy Inc.	Means (San Andres)	TX	11/83	8,500	430	213	San Andres	Dolo.	9.0	-	-	20	4,300	29	6.0	97	WF	5,913	5,209
				13,477	**1,176**	**360**												**10,483**	**8,643**

TOTAL	**307,575**	**272,789**