



February 28, 2012

VIA HAND DELIVERY

Jami Bailey, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Case 14808

Re:

Application of Legacy Reserves Operating LP for approval of a salt water disposal well, Eddy County, New Mexico.

Dear Ms. Bailey:

Enclosed in triplicate is the above-referenced administrative application of Legacy Reserves Operating LP, as well as a copy of a new legal advertisement. The Division received an objection to this administrative application when it was originally filed on November 8, 2011. Consequently, Legacy Reserves Operating LP hereby requests that this matter be placed on the docket for the March 29, 2012, examiner hearing.

Very truly yours,

Adam G. Rankin

Enclosures

cc: Rusty Holt, Legacy Reserves Operating LP

CASE 14808:

Application of Legacy Reserves Operating LP for approval of a salt water disposal well, Eddy County, New Mexico. Applicant in the above-styled cause seeks an order authorizing injection for purposes of salt water disposal in the Andrew Arnquist Estate No. 2 Well, at a surface location 330 feet from the North line and 330 feet from the East line of Section 29, Township 18 South, Range 26 East, N.M.P.M., Eddy County, New Mexico. The target injection formation is the Cisco Canyon formation at a depth of approximately 7,750 feet to 8,100 feet. Said well is located approximately 1.5 miles southwest of Dayton, New Mexico.

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	ABOVE THIS LINE FOR DIVISION USE ONLY
	NEW MEXICO OIL CONSERVATION DIVISION - Engineering Bureau - 1220 South St. Francis Drive, Santa Fe, NM. 87505 - Hadrey Arasul
	ADMINISTRATIVE APPLICATION CHECKLIST 30-015-21
THIS CHECKLIST IS MA	ANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE
DHC-Dowr PC-Pod I	s: Indard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication] Indole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling] Indication [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement] INFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion] INFX-Water Disposal] [IPI-Injection Pressure Increase] Indication [IPR-Positive Production Response]
l] TYPE OF API [A]	PLICATION - Check Those Which Apply for [A] Location - Spacing Unit - Simultaneous Dedication NSL NSP SD
	One Only for [B] or [C] Commingling - Storage - Measurement DHC CTB PLC PC OLS OLM
[C]	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery WFX PMX SWD PPI EOR PPR Other: Specify
[D]	Other: Specify
] NOTIFICATIO [A]	N REQUIRED TO: - Check Those Which Apply, or Does Not Apply Working, Royalty or Overriding Royalty Interest Owners
[B]	Offset Operators, Leaseholders or Surface Owner
[C]	Application is One Which Requires Published Legal Notice
[D] [Notification and/or Concurrent Approval by BLM or SLO U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
[E] [For all of the above, Proof of Notification or Publication is Attached, and/or,
[F]	Waivers are Attached
SUBMIT ACCU OF APPLICATI	RATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE ON INDICATED ABOVE.
CERTIFICATIO	N: I hereby certify that the information submitted with this application for administrative

approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an Individual with managerial and/or supervisory capacity.

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

FORM C-108 Revised June 10, 2003

	KE	SOURCES DEPARTMENT Santa Fe, New Wiesito 67505
,		APPLICATION FOR AUTHORIZATION TO INJECT
	?	PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? X Yes No
	П.	OPERATOR: Legacy Reserves, Operating LP
		ADDRESS: Box 10848 Midland, TX 79702
		CONTACT PARTY: Pat Darden, P.E. PHONE: 432-689-5237
	III.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
	IV.	Is this an expansion of an existing project? Yes X No If yes, give the Division order number authorizing the project:
	V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
	VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
	VII.	Attach data on the proposed operation, including:
٠)	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and, If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
	*VIII	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
	IX.	Describe the proposed stimulation program, if any
	*X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
,	*XI.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
	XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
	XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
1	XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	<i>)</i>	NAME: Pat Darden TITLE: Sr. Engineer SIGNATURE: DATE: 1107/11.
	*	E-MAIL ADDRESS: <u>pdarden@legacylp.com</u> If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal:

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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ATTACHMENT TO APPLICATION C-108

Andrew Arnquist Estate #2 (API 30-015-21942) Unit A, Sect. 29, Tws. 18 S., Rng. 26 E. Eddy Co., NM

III. WELL DATA

- A. 1) See injection well data sheets and attached schematics.
 - 2) See injection well data sheets and attached schematics.
 - 3) 2 7/8" plastic coated tubing.
 - 4) Baker Tension Packer.
- B. 1) Injection formations is the Cisco Canyon.
 - 2) Injection interval perforations from 7750' to 8100'.
 - 3) Well was P & A, will re-enter and perforate.
 - 4) The next higher producing zone is the Abo at approximately 4440'.

 The next lower producing zone is the Strawn at approximately 8200'
- IV. NO.
- V. MAP ATTACHED.
- VI, LIST OF WELLS AND DATA ATTACHED.
- VII. Legacy plans to re-enter the P & A Andrew Arnquist #2. Will drill out plug to original TD of 3000', squeeze old San Andres and Yeso perfs and deepen to 8200'. Legacy will run 5 ½" casing to TD and attempt to circulate cement. (run temp. survey)

We propose to perforate 5 ½" from 7750' to 8100', acidize as needed. Run in and set 2 7/8" IPC packer at 7700' and begin injecting into Cisco Canyon.

- 1) Plan to inject 5000 bpd with a maximum pressure of 1200# or whatever OCD allows.
- 2) Water will be from Legacy's own production from the Yeso
- 3) Injection will be a closed system.
- 4) Produced water analysis attached.

VIII. The proposed disposal formation is interbedded shale and limestone. The primary geologic name is the Cisco Canyon found from 7100' to 8200'.

The fresh water formation in the area is the Ogallala which ranges in thickness from 100' to 160'. Analysis of water well attached.

- IX. ACID AS NEEDED.
- X. WILL RE-LOG AND SEND UPON RE-ENTRY.
- XI. ATTACHED.
- XII. I, Pat Darden, have examined all available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zones and any underground source of drinking water pertaining to this well.
- XIII. ATTACHED.

OPERATOR: Legacy Reserves Operation	ng			
WELL NAME & NUMBER: Androw Arnquist	# 2			
WELL LOCATION: 330 E FOOTAGE LOCATION	UNIT LETTER	29 SECTION	/8 TOWNSHIP	36 RANGE

WELLBORE SCHEMATIC

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WELL CONSTRUCTION DATA Surface Casing

Casing Size: 13.375
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Casing Size: 9.625
orft ³
Method Determined: Circ
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Casing Size: 7
orft ³
Method Determined:
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to

INJECTION WELL DATA SHEET

OPERATOR: Legacy Reserves Operating	4			
WELL NAME & NUMBER: Andrew Arnquist	# 2			
WELL LOCATION: 330 F FOOTAGE LOCATION	A UNIT LETTER	29 SECTION	78 TOWNSHIP	26 RANGE
WELLBORE SCHEMATIC		WELL CO Surface	ONSTRUCTION DATA Casing	<u>4</u>
	Hole Size:		Casing Size:	
	Cemented with:	SX.	or	ft ³
	Top of Cement:	·	Method Determined	.:
		<u>Intermedia</u>	te Casing	
	Hole Size:		Casing Size:	
	Cemented with:		or	
	Top of Cement:		Method Determined	l:
		Productio	n Casing	
	Hole Size: 6.5		Casing Size: 5.	5
	Cemented with: emu	ch & Ciro sx.	or	ft ³
	Top of Cement: 5u	i)ace	Method Determined	d: Ciro
	Total Depth: 8200	<u> </u>		
		Injection	Interval	
	7750	fee	et to 8100	·
	F	erforated by Open 1	Hole: indicate which)	

INJECTION WELL DATA SHEET
Tubing Size: 27 Lining Material: IPC
Type of Packer: Baker Tension Type
Packer Setting Depth: 7700
Other Type of Tubing/Casing Seal (if applicable): NoNE
Additional Data
1. Is this a new well drilled for injection? Yes X No
If no, for what purpose was the well originally drilled? Producer
2. Name of the Injection Formation: Cisco Cangon
3. Name of Field or Pool (if applicable): Penasco Draw
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. See alachae
sefrematie.
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
(Abo at 4440)
Strawn at 8200

DISPOSAL WELL

API# PROPERTY NAME #	OPERATOR	TD	STATICO LAND U/L	SEC	TWN 🥞	RNG	N/S	Ē/W.
30-015-21942 LEGACY RESERVES OPERATI		3000					330 N	

Wells within 1/2 mile of the proposed disposal well		5280 5280
API# PROPERTY NAME	# OPERATOR TO TYPE STATICO LAND UIL SEC TW	/N RNG N/S E/W ≤1/2 mile
30-015-00212 ETHEL V NOEL	1 YATES PETROLEUM CORPORATION 9157 Gas A Eddy P P 20	18 S 26 E 990 S 990 E 1/2 mile
30-015-05926 LEN MAYER	1 YATES PETROLEUM CORPORATION 9225 Oil A Eddy P D 28	18 S 26 E 990 N 990 W 1/2 mile

Wells within 1/2 mile which do not penatrate proposed disposal interval

	time which do not penatrate propos										:						
API#	PROPERTY NAME	#55	OPERATOR	TD	TYPE	STAT	co 🖔	LAND	Ú/Ľ	SEC	TWN	翘	RNG	N/S		E/W	< 1/2 mile €
30-015-21741	DAYTON FT	1	YATES PETROLEUM CORPORATION	1867	Oil	Α	Eddy	Р	М	21	18	S	26 E	330	S	990 W	1/2 mile
30-015-21770	DAYTON FY	1	YATES PETROLEUM CORPORATION	1775	Oil	Α	Eddy	F	L_	21	18	s	26 E	1650	s	990 W	1/2 mile
30-015-22040	ANDREW ARNQUIST ESTATE	4	LEGACY RESERVES OPERATING, LF	2825	Oil	Р	Eddy	Р	Н	29	18	S	26 E	1650	Ν	430 E	1/2 mile
30-015-22041	ANDREW ARNQUIST ESTATE	3	LEGACY RESERVES OPERATING, LF	2763	Oil	Р	Eddy	Р	В	29	18	S	26 E	330	Ν	1650 E	1/2 mile
30-015-22306	YATES IQ	1	YATES PETROLEUM CORPORATION	2900	Oil	Α	Eddy	Р	E	28	18	S	26 E	2310	Z	990 W	1/2 mile
30-015-22331	DAYTON FO	2	YATES PETROLEUM CORPORATION	2800	Oil	Α	Eddy	Р	F_	_ 28	18	S	26 E	1652	Ζ	1650 W	1/2 mile
30-015-28878	DAYTON FN	2	YATES PETROLEUM CORPORATION	1885	Oil	Α	Eddy	Р	С	28	18	S	26 E	330	Z	1650 W	1/2 mile

WELLBORE SCHEMATIC AND HISTORY

		WELL	BORE SCHEMAT		<u> </u>							
			LETION SCHEMAT	IC O-P			1: 30-015-21					
FORM	DEPTI		See From Confe (aggreened agents	Part Vall September			LEGACY					
		1220					ANDREW				WELL NO). 2 26E
		13 3/8 @ 400			SURF LOC:	UL:	A SEC 330 FNI		I VVIV.	18S 330	RNG: FEL	
		LOC © 0.	4 1 1 2	PLUG 80 sxs	BH LOC:	UL.:			TWN:	18S	RNG:	26E
·				472-0		J	330 FNL		1	330		
1					TD	3000	PBD	KB	3436	DF		
San Andres	. 875	i			DO 2:			GL	3422			
,					POOL		CAM ANDO	=e VE00	PERFS		2396-2706	
							SAN ANDRE 1/25/1976	=3-1 =3 U	<u> </u>			
					POOL	Somb 1			PERFS		1578-1594	
						DRAW;	SAN ANDRE	ES-YESO				
		9 5/8					4/09/1977					
-		@ 1200			POOL				PERFS			
 		TOC @ 0		PLUG 80 sxs 1541-1080 TAG								
]		1541-1080 TAG CIBP @ 1541	<u> </u>							
]		212. W 1071								
1		1						,				
				PERFS 1578-1594	ļ.						•	
Closista	0000											
Glorieta +/-	2300			 	:							
					CASING RI	ECORD			·			
					37.3	SIZE	DEPTH	CMT	T	HOLE S	IZE	TOC
					SURF.	13.375	400	360 sx	ks	17.5		0 Cir
					INT1	9.625	1200	750 sx		12.25		0 Cir
1		1		PBTD 2958	PROD	7	3000	684 sx	rs	8.75		0 Cir
				TD 3000			<u> </u>		<u>l</u>			<u> </u>
1				1D 3000								
ABO +/-	4440											
II .	1						SPU		0/28/1976			
							COM	IP: 11	1/25/1976		•	
								IP: 11				
							COM	IP: 11	1/25/1976			
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Cisco +/-	7100		·				COM	IP: 11	1/25/1976			
Cisco +/-	7100						COM	IP: 11	1/25/1976			
Cisco +/-	7100						COM	IP: 11	1/25/1976			
Cisco +/-	7100						COM	IP: 11	1/25/1976			
							COM	IP: 11	1/25/1976			
Cisco +/- Canyon +/-	7100 7770						COM	IP: 11	1/25/1976			
							COM	IP: 11	1/25/1976			
							COM	IP: 11	1/25/1976			
							COM	IP: 11	1/25/1976			
Canyon +/-	7770						COM	IP: 11	1/25/1976			
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Canyon +/-	7770						COM	IP: 11	1/25/1976			
Canyon +/-	7770						COM	IP: 11	1/25/1976			
Canyon +/-	7770						COM	IP: 11	1/25/1976			
Canyon +/-	7770						COM	IP: 11	1/25/1976			
Canyon +/- Strawn +/-	7770 8200						COM	IP: 11	1/25/1976			
Canyon +/-	7770						COM	IP: 11	1/25/1976			
Canyon +/- Strawn +/-	7770 8200						COM	IP: 11	1/25/1976			
Canyon +/- Strawn +/-	7770 8200						COM	IP: 11	1/25/1976			
Canyon +/- Strawn +/-	7770 8200						COM	IP: 11	1/25/1976			
Canyon +/- Strawn +/-	7770 8200			Г	DREDADE	ED BV	COM P&A:	IP: 11	1/25/1976 1/07/2007	IDDATE		10/24/44
Canyon +/- Strawn +/-	7770 8200				PREPARE	ED BY:	COM P&A:	IP: 11	1/25/1976 1/07/2007	JPDATEI	D	10/21/11

WELLBORE SCHEMATIC AFTER

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	FORM	DEPTH		ETION S	CHEMA	TIC SWD		APINUM PERATOR				SODED	ΔΤΙΝΙΟ	I D		
┈╢	FURIM	DEPIH) Sale	(10) Es (sc)]]]	36 84 40 400										
			43.2/6					SENAME		SEC:	29	TWN:	18S	WELL NO). 2 26E	:
			13 3/8 @ 400				SURF LOC:	UL:		FNL	29	I VVIV.		FEL.	20⊑	
							BH LOC:	UL:		SEC:	29	TWN:	185	RNG:	26E	:
			±òc @ 0,			PLUG 80 sxs	BH LOC:	UL.		FNL	29	I VVIV.		FEL		
						113 4/2-0	TD	8200	PBD	INL	КВ	3436		1		
	San Andres	875						0200	יו טט		GL	3422	-اد			
∦,	Allules	013					POOL				, <u>UL</u>	PERFS	<u> </u>	2396-2706	SQZ	
		ļ					PENASCO	DRAW:	SAN AN	NDRES-	-YESO	1 1 1				
H	•	ļ						Comp 1			-					
		j					POOL					PERFS		1578-1594	SQZ	
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			@ 1200			828 B28	POOL					PERFS				
			тос @ 0			PLUG 80 sxs	SWD;CISC	CO-CANY	ON					7750-8100		
			•			1541-1080 TAG										
ı		·				CIBP @ 1541			•							
-		1								,						
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		.				PERFS 1578-1594	SQZ'D									
1	Cloriote + /	2200												-		
1	Glorieta +/-	2300				DEDEC 2206 6700	eozio									
		1				PERFS 2396-2706	CASING R	FCORD								
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							SURF.	13.375			360 sx		17.5	عاكات	0 Cir	
							INT1	9.625	1200		750 sx	-	12.25	· · · · · · · · · · · · · · · · · · ·	0 Cir	
			*				PROD	7	3000		684 sx		8.75		0 Cir	
		1					LINER1	5.5	8200			to circ			0 Cir	
		1									<u></u>				L	
	ABO +/-	4440							!	SPUD: COMP: P&A: RE-ENT	11/ 11/	28/1976 25/1976 07/2007 3D				
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		-				PERFS 7750-8100) ·									
C	anyon +/-	7770		80	**	1.211.97130-0100										
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A				•			PREPAR		<u>-</u> -	ddie S		1	PDATE		10/21/1	

WELLBORE SCHEMATIC AND HISTORY

F					DRE SCHEMATIC		J. (1	A (7) 14 11 12	1 00 01 00	10				
∦	FORM	IDi	EPTH		TION SCHEMATIC	G-A	ļ		1: 30-015-002		M COPP			
ଐ	FURM	Jul	= 11	Lateral Lateral	<u></u>	He.	-		R: YATES PE		INI CORP		MELLNO	
					.] ·		SURF LO		P SEC		TWN:	18S	WELL NO RNG:). 1 26E
							SURF LU	,o. <u>OL</u> .	990 FSL		TIVVIA.		FEL	
1							BH LOC:	UL:		20	TWN:	18\$	RNG:	26E
1									990 FSL				FEL	
					· I			TD 9157	PBD	KB		DF	3439)
	San Andre	es	887							GL				
ı					ł		POOL				PERFS		8892-9100	
-					1 1	@ 925	ATOKA	;PENNSYL	VANIAN (GA	S)	ļ		·-··	
		•			-	- -	POOL				PERFS			
							FUUL				FERFS			
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-					1		POOL				PERFS	•		
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l			.	i		İ			SPUD		/28/1976			
1			- 1	:		1		*	COMP		25/1976			
		,				!			P&A:	11	/07/2007			
				;		i			DV Tool @ 92	25	Stg 1 467	sxs cir	rc.	
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			7	@ 9155	No.									
				OC @ 7295 T	S =	TD 9157								
L							PREPA	RED BY:	Eddie	Seay	U	PDATE	D	10/21/11
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			BORE SC										
			LETION SC	HEMATI	C G-A			1: 30-015-059					
FORM	DEPTI							R: YATES PE		M CORP			
,								LEN MAYE				WELL NO	
						SURF LOC:	UL:		: 28	TWN:	18S	RNG:	26E
					TOC @			990 FNL		<u> </u>	990	FWL	
,					366'	BH LOC:	UL:		28	TWN:	185	RNG:	26E
								990 FNL			990	FWL	
						TD	9225	PBD	KB		DF		
San Andres	893								GL				
						POOL				PERFS	-	9009-9172	
						ATOKA;PE	NNSYL	VANIAN (GA	S)				
										,			,
		8 5/8	4		KN	POOL				PERFS		2435-2688	
		@ 1255			-	ATOKA;GL	ORIETA	-YESO					
		LOC @ 0.											
						POOL				PERFS		1596-1660	
		1				ATOKA;SA	N ANDE	RES					
		ļ			PERFS	,							
		l			1596-1660					L			
		1				CASING RI	CORD						
		1				1	SIZE	DEPTH	CMT		HOLE S	SIZE	TOC
		1				SURF.	8 5/8	1255	400 sx		11		0 Cir
		ł				PROD	5.5	6550-9225	600 sx		7.785		6540 T
Florieta	2282					PROD	5.5	0-3000	600 sx		7.785		366 TS
					CIBP @ 2350 c			10 0000	1000 OX		7.700	1	000 10
		1			2550 0	cap w oo chine							
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					2435-2688								
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			2					CDUD	. 441	05/4000			
					PLUG 35 sxs 3	3000-3100		SPUD		25/1960			
			i.		í			COMP	': 01/	18/1961			
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			SECTION STATEMENT AND ADDRESS OF THE PARTY O	NATIONAL DELANGED									
∕po	4506				PLUG 35 sxs 4	1456-4556							
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ìsco anyon trawn	7130 7803 8250				PLUG 35 sxs 5	5830-5930 5500-6600 <u>9</u> 6550							
ìsco anyon trawn	7130 7803 8250				PLUG 35 sxs 5 PLUG 35 sxs 6 CUT & PULL @	5830-5930 6500-6600 9 6550							
isco anyon trawn	7130 7803 8250	5 1/2			PLUG 35 sxs 5	5830-5930 6500-6600 9 6550							
anyon trawn	7130 7803 8250 8737	5 1/2 @ 9225			PLUG 35 sxs 5 PLUG 35 sxs 6 CUT & PULL @	5830-5930 6500-6600 9 6550							
ìsco anyon trawn	7130 7803 8250 8737	5 1/2 @ 9225 TOC @ 654			PLUG 35 sxs 5 PLUG 35 sxs 6 CUT & PULL @	5830-5930 6500-6600 9 6550							



Water Analysis

Date: 2/24/2005

2401 Sivley, Artesia NM 88210

Phone (505) 746-3140 Fax (505) 746-2293

Analyzed For

Westall	<u> </u>	itate G#1		New Mexico		
Sample Source	•		• • •	· 1 .		
Formation	Canyo	n.	Depth			
Specific Gravity	1.050		SG @	60 °F	1.051 Not Tested	
ρH	6.30		S	ulfidəs		
Temperature (°F)	65		Reducing A	Not Tested		
Cations				•		
Sodium (Calc)		in Mg/L	9,518	in PPM	9,056	
Calcium		in Mg/L	5,600	in PPM	5,328	
Magnesium		in Mg/L	240	in PPM	228	
Soluable Iron (FE2)		in Mg/L	300.0	in PPM	285	
Anions	# 01 PM			-		
Chlorides		in Mg/L	24,000	in PPM	22,835	
Sulfates		in Mg/L	2,000	in PPM	1,903	
Bicarbonates		in Mg/L	185	in PPM	176	
Total Hardness (as CaCO)	3)	In Mg/L	15,000	in PPM	14,272	
Total Dissolved Solids (Ca		in Mg/L	41,844	in PPM	39,813	
Equivalent NaCl Concentra	•	in Mg/L	38,410	in PPM	36,546	
caling Tendencies	•	_	· 	· ;	_	
Colcium Carbonate Index					1,038,464	

Below 500,000 Remote / 500,000 - 1,000,000 Possible / Above 1,000,000 Probable

*Calcium Sulfate (Gyp) Index

11,200,000

Below 500,000 Remote / 500,000 - 10,000,00 Possible / Above 10,000,000 Probable

"This Calculation is only an approximation and is only valid before treatment of a well or soveral wreeks after treatment.

Remarks

FAX 677-2361

•				CHLORIDES
POOL			• ,	
Dean Permo Pennsylvanian	·		• .	44,730
Dean Devonian				19,525
Denton Wolfcamp			•	37,275
Denton Devonian				37,062
South Denton Wolfcamp	•		,	54,315
South Denton Devonian		. •		34,080
				39,760
Medicine Rock Devonian	j			23,288
Little Lucky Lake Devonian			,	132,770
Wantz Abo		•	!	58,220
Crosby Devonian		·	· . · .	3,443 (Rerf)
Scarborough Yates Seven Rive	ers			
Teague Simpson	,	· 4	•	114,665
Teague Ellenburger			`a	120,345
Rhodes Yates Seven Rivers			e e e e e e e e e e e e e e e e e e e	144,485
House San Andres	 .:			93,365
House Drinkard			•	49,700
South Leonard Queen		•		115,375
Elliott Abo			₩.	55,380
Scharb Bone Springs				30,601
EK Queen		•		41,890
East EK Queen				179,630
Maljamar Grayburg San Andres	69		· ×	46,079
Maljamar Paddock				115,375
Maljamar Devonian	. "			25,418
Salt Lake Yates				6,781 (Reef)
Teas Yates Seven Rivers	Andrichia P.C.			22,152 (Reef?)

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Analytical Results For:

Eddle Seay Consulting Eddie Seay 601 W. Illinois Hobbs NM, 88242

Fax To:

(505) 392-6949

Received:

01/06/2011

Reported:

01/18/2011

ECS - 1 W

Project Name:

Project Number:

Project Location:

Sampling Date:

01/05/2011

Sampling Type:

Water

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: ECS - 1 W (H100028-01)

Bicarbonate 310.1M	m	ıg/L	Analy	red By: HM				<u></u>	· 	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Alkalinity, Bicarbonate	185	5.00	01/07/2011	ND	954	96.4	1000	7.79		
Calcium SM3500Ca-D	m	g/L	Analyz	ed By: HM			· · · · · · · · · · · · · · · · · · ·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Calcium	70.5	1.60	01/13/2011	ND	52.1	104	50.0	4.83		
rbonate 310.1M	m	g/L	Analyz	ed By: HM					· •	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Alkalinity, Carbonate	<0.00	0.00	01/07/2011	ND	· ND		0.00			
Chloride, SM4500CI-B	mç	ı/L	Analyz	ed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	4.00	01/10/2011	ND	104	104	100	3.77		
Conductivity 120,1	uS	/cm	Analyze	ed By: HM		٧				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Conductivity	600	1.00	01/07/2011	ND .	1410	100	1410	0.333		
Magnesium SM3500MgE	mg	/L	Analyze	d By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifler	
dagnesium	17.5	1.00	01/13/2011	ND	55.9	.112	50.0	0.00		
ьн	рН	Units	Analyzo	d By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Н	7.88	0.100	01/07/2011		7.03	100	7.00	0.253		
otassium 8049	mg/	L	Analyze	ł ву: нм						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	

Cardinal Laboratories

Celey D. Keine

^{*=}Accredited Analyte





Analytical Results For:

Eddie Seay Consulting Eddie Seay 601 W. Illinois Hobbs NM, 88242

Fax To:

(505) 392-6949

Received:

01/06/2011

Reported:

01/18/2011

Project Name:

Project Number:

Project Location:

ECS - 1 W

Sampling Date:

01/05/2011

Sampling Type:

Water

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: E C S - 1 W (H100028-01)

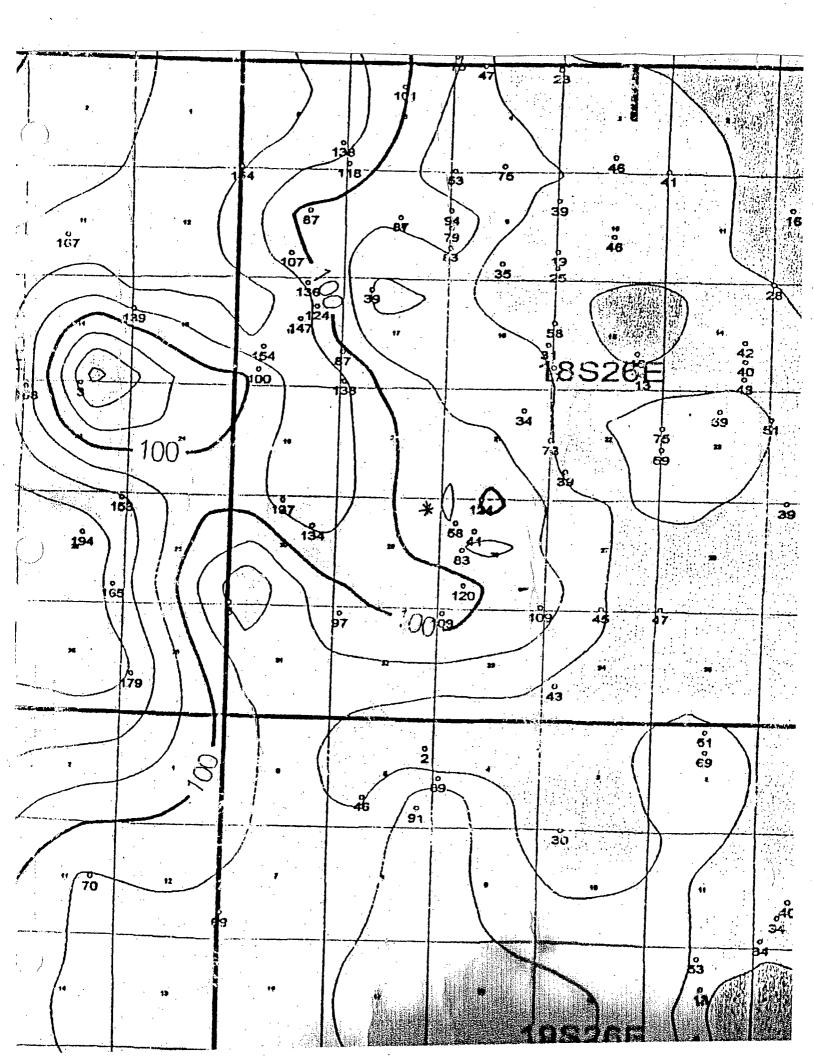
Potasaium 8049	m]/L	Analyz	ed By: HM				· ·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Potassium	1.60	1.00	01/13/2011	ИD	7.61	95.1	8.00	9.11	
Sodium Calculated	mg/L		Analyzed By: HM			·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifler
Sodium	18.0	1.00	01/13/2011	ND					
fate 375.4	mg	/L	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Sulfate	67.5	10.0	01/11/2011	ND	40.4	101	40.0	7.90	-
TDS 160.1	mg	mg/L		Analyzed By: HM		<u>:</u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifler
ms	407	5.00	01/06/2011	ND				0,00	٠
Total Alkalinity 310.1M	mg,	/L	Analyze	d By: HM			-		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	B\$	% Recovery	True Value QC	RPD	Qualifier
likalinity, Total	152	4.00	01/07/2011	ND	790	96.3	820	7.59	

Cardinal Laboratories

*=Accredited Analyte

_PASE NOTE: Liability and Damages. Cardinal's Mality and clerk's exclusive remedy for any claim arising, winther based in contract or bott, shall be limited to the amount past by clent for analyses. All claims, including those for negligence and any other cause whatnower shall be deemed waived unless made in writing and received by Clertful with thirty (20) days after completion of the applicable service. In no event shall Certiful be bable for incidental or consequential demages including, without limitation, bushess intemptors, loss of use, or loss of profits incurred by client, its substitutives, efflicient or accessors arising out of or related to the performance of the services hereunder by Cardinal, reportless of whether such claims is based upon any of the above stated researce or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine



LEGACY RESERVES, LP

RE: Andrew Arnquist Estate #2 (API 30-015-21942) Unit A, Section 29, Tws. 18 S., Rng. 26 E. Eddy Co. New Mexico

Dear Sir:

In accordance with the Rules and Regulations of the Oil Conservation Division of the State of New Mexico, you are being provided a copy of the C-108, Application for Authorization to Inject in to the above captioned well.

Any questions about the permit can be directed to Pat Darden, (432)689-5237. Any objections or request for hearing must be filed with the Oil Conservation Division within fifteen (15) days from the date received. The OCD address is 1220 S. Saint Francis Drive, Santa Fe, NM 87504, (505)476-3440.

Thank You,

Pat Darden, P.E. Legacy Reserves

Box 10848

Midland, TX 79702

432-689-5237

LEASE OWNERS AND OFFSETS

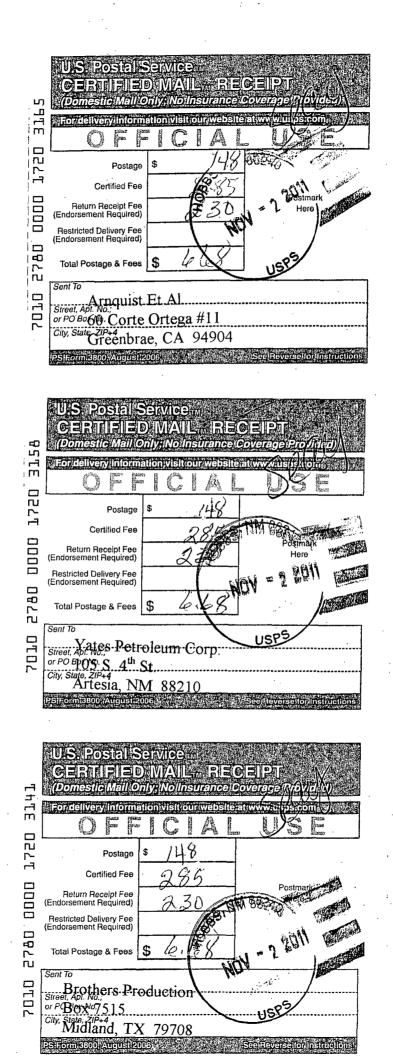
LEASE OWNERS

Arnquist Et Al 60 Corte Ortega #11 Greenbrae, CA 94904

OFFSET OPERATORS OR LEASE OWNERS

Yates Petroleum Corp. 105 S. 4th St. Artesia, NM 88210

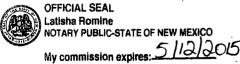
Brothers Production Box 7515 Midland, TX 79708



LEGAL NOTICE

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, Legacy Reserves Operating LP, Box 10848, Midland, TX 79702, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the Andrew Arnquist Estate #2 (API 30-015-21942), located in Unit A, Section 29, Township 18 South, Range 26 East, Eddy Co., NM. The injection formation is the Cysco Canyon from 7700' to 8100' below surface. Expected maximum injection rate is 5000 bpd., and the expected maximum injection pressure is 1200 psi or what the OCD allows. Any questions about the application can be directed to Eddie W. Seay, (575)392-2236, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504, within fifteen (15) days.

Affidavit of Publication
NO . 21899
()TE OF NEW MEXICO
County of Eddy:
Danny Scott Warmy Scar
being duly sworn, says that he is the Publisher
of the Artesia Daily Press, a daily newspaper of general
circulation, published in English at Artesia, said county
and state, and that the hereto attached
Legal Notice
was published in a regular and entire issue of the said
Artesia Daily Press, a daily newspaper duly qualified
for that purpose within the meaning of Chapter 167 of
the 1937 Session Laws of the state of New Mexico for
1 Consecutive weeks/days on the same
as follows:
First Publication October 30, 2011
Second Publication
Third Publication
Fourth Publication
Fifth Publication
Subscribed and sworn to before me this
31st day of October 2011



Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

LÉGALNÓT

Rursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico. Legacy Reserves Operating LIP, Box 10848 Midland TX 79702 is filing a C-108, Application for Salt Water Disposal The well being applied for is the Andrew Amquist Estate: (:#2 (API :: 30-015-21942); located in Unit A; Section 29, Township 18, South; Range 26 East; Eddy Co. NM. The injection formation is the Cysco Canyon from 7700 to 8100 below surface. Expected maximum injection rate is 5000 bpd; and the expected maximum injection pressure is 1200 psi or what the OCD allows. Any questions about the application can be directed to Eddie W Seay; (575)392-2236; or any objection or request; for hearing must be directed to the Oil Conservation Division; (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504 within fifteen (15) days Published in the Artesia Daily Press, Artesia, N.M., Oct. 30, 2011, Legal No. 21899.