

Tables

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Table 1
NM Oil and Gas Wells within 2 Miles

API	OGRID	OGRID Name	Status	Well Type	Well Name	UL-S-T-R	Total Depth	Associated Pools
30-025-01801	214263	PRE-ONGARD WELL OPERATOR	P	O	PRE-ONGARD WELL #001	L-24-22S-33E	4497	<Null>
30-025-26902	214263	PRE-ONGARD WELL OPERATOR	P	O	PRE-ONGARD WELL #001	F-35-22S-33E	15700	<Null>
30-025-27524	214263	PRE-ONGARD WELL OPERATOR	P	O	PRE-ONGARD WELL #001	F-19-22S-34E	3799	<Null>
30-025-27625	214263	PRE-ONGARD WELL OPERATOR	P	O	PRE-ONGARD WELL #001Y	F-19-22S-34E	14270	<Null>
30-025-33009	25827	ROBERT E. LANDRETH	P	O	ENGLE 20 FEDERAL #001	D-20-22S-34E	9999	[96838] DRY AND ABANDONED
30-025-33341	7377	EOG RESOURCES INC	A	O	BARGAIN BQA FEDERAL #001H	J-22-22S-33E	9518	[96403] WILDCAT, BONE SPRING; [97846] WILDCAT G-06 S223322J, BONE SPRING
30-025-33342	14049	MARBOB ENERGY CORP	C	O	CHEAPER THAN KIDS FEDERAL #002	I-22-22S-33E	0	<Null>
30-025-33343	14049	MARBOB ENERGY CORP	C	O	CHEAPER THAN KIDS FEDERAL #003	E-23-22S-33E	0	<Null>
30-025-33682	20305	DEVON SFS OPERATING INC	P	G	GAUCHO UNIT #002	K-29-22S-34E	3783	<Null>
30-025-33929	20305	DEVON SFS OPERATING INC	C	G	GAUCHO UNIT #003	K-20-22S-34E	0	<Null>
30-025-34026	6137	DEVON ENERGY PRODUCTION COMPANY, LP	A	G	GAUCHO UNIT #002Y	K-29-22S-34E	13340	[96665] OJO CHISO, MORROW, WEST (GAS)
30-025-34149	6137	DEVON ENERGY PRODUCTION COMPANY, LP	P	G	GAUCHO UNIT #005	I-30-22S-34E	13450	[96665] OJO CHISO, MORROW, WEST (GAS)
30-025-34557	6137	DEVON ENERGY PRODUCTION COMPANY, LP	A	G	GAUCHO UNIT #003	N-20-22S-34E	13431	[96665] OJO CHISO, MORROW, WEST (GAS)
30-025-34793	6137	DEVON ENERGY PRODUCTION COMPANY, LP	C	G	GAUCHO UNIT #008	I-19-22S-34E	0	[96665] OJO CHISO, MORROW, WEST (GAS)
30-025-41853	6137	DEVON ENERGY PRODUCTION COMPANY, LP	A	O	GAUCHO UNIT #016H	P-19-22S-34E	10393	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-41854	6137	DEVON ENERGY PRODUCTION COMPANY, LP	A	O	GAUCHO UNIT #017H	P-19-22S-34E	10582	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-41979	6137	DEVON ENERGY PRODUCTION COMPANY, LP	C	O	GAUCHO UNIT #021C	N-29-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-42778	6137	DEVON ENERGY PRODUCTION COMPANY, LP	P	O	GAUCHO UNIT #020Y	N-29-22S-34E	3798	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-43373	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #099H	A-19-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-43386	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #066H	A-19-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-44179	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #081H	D-20-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-44180	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #082H	D-20-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-44690	12361	KAISER-FRANCIS OIL CO	N	O	BELL LAKE UNIT NORTH #201H	E-01-23S-33E	0	[5150] BELL LAKE, BONE SPRING, NORTH
30-025-45166	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #026H	P-30-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-45167	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #028H	P-30-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-45168	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #031H	P-30-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING
30-025-45169	6137	DEVON ENERGY PRODUCTION COMPANY, LP	N	O	GAUCHO UNIT #033H	P-30-22S-34E	0	[97922] WC-025 G-06 S223421L, BONE SPRING

Table 2a
NM BLM Leases within 2 Miles

Serial Number	Name 1	Acres
NMLC 0070544B	KAISER FRANICS OIL	314.45
NMLC 0070544A	CONOCOPHILLIPS CO	314.87
NMLC 0068387	CONOCOPHILLIPS CO	315.57
NMLC 0066438	JAVELINA PARTNERS	479.85
NMNM 012846	MCLANE MONTY D	800
NMNM 017440	FIRST INTL BK OF AZ	1794.49
NMNM 066271	DEVON ENERGY PROD CO LP	160
NMNM 061360	ENGLE FRED L	960
NMNM 069596	DEVON ENERGY PROD CO LP	830.64
NMNM 066272	DEVON ENERGY PROD CO LP	120
NMNM 092781	DEVON ENERGY PROD CO LP	960
NMNM 098247	CONOCOPHILLIPS CO	320
NMNM 104693	EOG Y RESOURCES INC	1040
NMNM 113969	DEVON ENERGY PROD CO LP	600
NMNM 0001244A	CONOCOPHILLIPS CO	634.35

Table 2b
NM SLO Oil and Gas Leases

OGRID	OGRID Name	Serial Number	Status	Acres
217817	CONOCOPHILLIPS COMPANY	B107520002	ACTIVE	200
217817	CONOCOPHILLIPS COMPANY	E017730004	ACTIVE	40
12361	KAISER-FRANCIS OIL CO	E035130001	ACTIVE	400
217817	CONOCOPHILLIPS COMPANY	E064340001	ACTIVE	560
6137	DEVON ENERGY PRODUCTION COMPANY, LP	VB19370001	ACTIVE	320
6137	DEVON ENERGY PRODUCTION COMPANY, LP	VB19380001	ACTIVE	320
6137	DEVON ENERGY PRODUCTION COMPANY, LP	VB19810000	ACTIVE	319.58

Table 2c
NM Surface Ownership within 2 Miles

PARCELCODE	Name	Address 1	Address 2	City	State	Zip	CALC_ACRE	TWP	RNG	SECTION_
4000501770002	LIMESTONE BASIN PROP RANCH LLC	18 DESTA DRIVE		MIDLAND	TX	79705	640	22	34	32
4000501780002	STATE OF NEW MEXICO		310 OLD SANTA FE TRAIL	SANTA FE	NM	87501	640	22	33	36
4000501800001	LIMESTONE BASIN PROP RANCH LLC	18 DESTA DRIVE		MIDLAND	TX	79705	157.17	22	34	31
4000501800005	LIMESTONE BASIN PROP RANCH LLC	18 DESTA DRIVE		MIDLAND	TX	79705	160.259359	23	33	1
4000501900014	MERCHANT LIVESTOCK	PO BOX 1105		EUNICE	NM	88231	640	22	33	13
4000501900018	MERCHANT LIVESTOCK	PO BOX 1105		EUNICE	NM	88231	633.04	22	34	18
	STATE - Limestone Livestock LLC						640	22	33	34
	USA - Limestone Livestock LLC						640	22	33	35
	STATE - Limestone Livestock LLC						320	22	33	25
	STATE - Limestone Livestock LLC						629.362	23	34	6
	STATE - Limestone Livestock LLC						639.057	23	33	2
	STATE - Limestone Livestock LLC						160.238	23	33	1
	STATE - Limestone Livestock LLC						320.601	23	33	1
	STATE - Limestone Livestock LLC						472.15	22	34	31
	STATE - Limestone Livestock LLC						640	22	34	29
	STATE - Limestone Livestock LLC						630.64	22	34	30
	USA - Merchant Livestock Co						320	22	34	20
	USA - Merchant Livestock Co						315.72	22	34	19
	USA - Limestone Livestock LLC						320	22	33	25
	STATE - Merchant Livestock Co						320	22	33	24
	USA - Limestone Livestock LLC						640	22	33	27
	USA - Limestone Livestock LLC						640	22	33	26
	USA - Merchant Livestock Co						640	22	33	22
	USA - Merchant Livestock Co						480	22	33	15
	USA - Merchant Livestock Co						480	22	33	14
	USA - Merchant Livestock Co						640	22	33	23
	USA - Merchant Livestock Co						320	22	33	24
	STATE - Merchant Livestock Co						160	22	33	14
	STATE - Merchant Livestock Co						316.04	22	34	19
	STATE - Merchant Livestock Co						320	22	34	17
	STATE - Merchant Livestock Co						320	22	34	20

Table 3
Produced Water

wellname	api	section	township	range	county	state	field	formation	samplesource	sampledate	ph	specificgravity	tds_mgL	resistivity_ohm_cm	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL	CorrectFlag
RIO BLANCO 4 FEDERAL COM #003	3002536425	4	23S	34E	Lea	NM				9/3/2014 0:00	6.1		179000.8		53519.9	12080.6	38.7	1748.7	2.4	109000	122	0	200	FALSE
BELL LAKE UNIT #006	3002508483	6	23S	34E	LEA	NM	BELL LAKE NORTH	DEVONIAN	HEATER TREATER		7		71078							42200	500	1000		TRUE
BELL LAKE UNIT #002	3002508489	30	23S	34E	LEA	NM	SWD	DELAWARE	UNKNOWN				52115							32200	451	529		TRUE
RIO BLANCO 4 FEDERAL COM #003	3002536425	4	23S	34E	Lea	NM				10/15/2015 0:00	7		254017.1	0.025	62818	24835.8	47	4233.5	5.48	160463.8	244	425	1000	FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				10/15/2015 0:00	6.07		185742	0.034	60151.2	9297	80.6	1501	1.68	113474.4	341.6	560	800	FALSE
CABALLO 9 STATE #001	3002534577	9	23S	34E	Lea	NM				9/10/2014 0:00	7.81		71862.4		24399.6	2685.9	462.1	367.8	2.86	42700	576	0	0	FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				9/10/2014 0:00	6.9		71718.6		23830.8	2540	0	346.3	0	42400	610	170	100	FALSE
RIO BLANCA 4 FEDERAL COM #001	3002534515	4	23S	34E	Lea	NM				9/8/2004 0:00	6.1		43388.1		13982.1	1697	363	243		25721	207	574		FALSE
RIO BLANCA 4 FEDERAL COM #001	3002534515	4	23S	34E	Lea	NM				12/16/2004 0:00	6.1		70316.5		25492.9	1361	7	162		41669	228.1	1011	100	FALSE
RIO BLANCO 9 STATE #001	3002536302	9	23S	34E	Lea	NM				12/16/2004 0:00	5.6		65810.3		15070.8	6754	28	2137		41261	165.9	277		FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				12/16/2004 0:00	6.2		71521.1		25245.7	1754	5	255		42308	207.4	1176	75	FALSE
RIO BLANCA 4 FEDERAL COM #001	3002534515	4	23S	34E	Lea	NM				4/26/2005 0:00	5.7		84267.8		28936.1	2670	64	383		50154	153.7	1230		FALSE
RIO BLANCO 9 STATE #001	3002536302	9	23S	34E	Lea	NM				4/26/2005 0:00	5.9		83217.6		28207.2	2817	1	493		49511	290.4	1188		FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				4/26/2005 0:00	5.8		81393.3		27656.1	2657	9.5	497		48230	331.8	1340		FALSE
RIO BLANCA 4 FEDERAL COM #001	3002534515	4	23S	34E	Lea	NM				5/23/2005 0:00	5.9		76404.4		25237.5	2495	1087	329		45259	290.4	1093		FALSE
RIO BLANCO 9 STATE #001	3002536302	9	23S	34E	Lea	NM				5/23/2005 0:00	5.9		74771.3		25099.8	2724	5	454		44417	311.1	1123		FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				5/23/2005 0:00	5.8		72187.8		24914.3	2151	7.5	345		42673	331.8	1198		FALSE
RIO BLANCA 4 FEDERAL COM #001	3002534515	4	23S	34E	Lea	NM				6/30/2005 0:00	6.1		74296		25272.2	2538	47	343		44022	456.3	1031	60	FALSE
RIO BLANCO 9 STATE #001	3002536302	9	23S	34E	Lea	NM				6/30/2005 0:00	6		74579		25426.9	2472	33	363		44159	414.8	1112	50	FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				6/30/2005 0:00	6.1		73515.4		25199.7	2394	22	320		43444	456.3	1134	25	FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				4/10/2007 0:00	6.6		73741.5		24583.3	2814	5	363	0.2	42853	732	1724		FALSE
ANTELOPE RIDGE UNIT #003	3002521082	34	23S	34E	LEA	NM	ANTELOPE RIDGE	DEVONIAN	UNKNOWN	11/14/1967 0:00	6.9		80187							47900	476	900		TRUE
CABALLO 9 STATE #001	3002534577	9	23S	34E	Lea	NM				5/14/2014 0:00	6.9		70554		22500.6	2476.8	0	337.7	0	42521	732	1299	200	FALSE
RIO BLANCO 9 STATE #001	3002536302	9	23S	34E	Lea	NM				5/14/2014 0:00	6.2		192154		54068.3	13499.7	59.3	1983	2.7	119614	122	943	200	FALSE
BELL LAKE UNIT #009	3002520261	18	23S	34E	LEA	NM	BELL LAKE NORTH	BONE SPRING	UNKNOWN				204652							130000	512	260		TRUE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				3/29/2010 0:00	7		77292.8		25964.7	2876	1	378	0.08	45890	244	1186	100	FALSE
MAD DOG 15 FEDERAL COM #001	3002536778	15	23S	34E	Lea	NM				8/24/2010 0:00	8.4		69356		24262.3	1833	4.5	298	0.2	40711	366	1404	20	FALSE
CABALLO 9 STATE #001	3002534577	9	23S	34E	Lea	NM				10/14/2010 0:00	7		122402.2		38021	6823	11	1120	1	73600	622.2	1213	300	FALSE
THISTLE UNIT #017H	3002539893	33	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		2/6/2015 0:00	6		89832		22107	15	4443	3	189304	73	200	350	FALSE	
THISTLE UNIT #018H	3002540010	28	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		2/6/2015 0:00	5.7		93485		22643	31	4570	3.2	195932	73	270	390	FALSE	
THISTLE UNIT #049H	3002541254	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		2/6/2015 0:00	6.1		51720		8636	84	1117	0.95	98474	183	690	300	FALSE	
THISTLE UNIT #065H	3002541303	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		3/14/2015 0:00	6.3		80875		6665	79	871	0.65	138579	183	470	300	FALSE	
THISTLE UNIT #061H	3002541487	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		3/14/2015 0:00	6.3		84834		7818	12	927	0.12	146896	146	480	250	FALSE	
THISTLE UNIT #004	3002534456	34	23S	33E	Lea	NM				5/31/2001 0:00	5.08		21757.8		315.8	4914	284	368		12856	163	150		FALSE
THISTLE UNIT #005	3002534580	34	23S	33E	Lea	NM				5/31/2001 0:00	6.99		74186		25899	1996	27	253		44527	386	269		FALSE
THISTLE UNIT #018H	3002540010	28	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		9/10/2014 0:00	6		254702.7		70206.8	20688.4	47.7	3452.1	3.83	157600	122	0	200	FALSE
THISTLE UNIT #032H	3002540016	33	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		9/10/2014 0:00	6		256044.9		68990.7	20375.4	30.7	3375.3	3.98	160600	122	0	400	FALSE
THISTLE UNIT #043H	3002540898	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/10/2014 0:00	6.6		143879.2		46056.9	7296.4	79.8	820.9	2.6	86700	244	0	300	FALSE
THISTLE UNIT #046H	3002541118	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/10/2014 0:00	6.5		163164.2		52347.9	8192.1	46.1	890.3	1.64	99400	122	0	200	FALSE
THISTLE UNIT #048H	3002541253	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/10/2014 0:00	6.5		161403.3		51347.4	7892.9	18.5	856.7	1.12	99100	122	0	250	FALSE
THISTLE UNIT #049H	3002541254	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/10/2014 0:00	6.5		161244.1		50959.5	7851.1	21.9	845.1	1.18	99300	122	0	200	FALSE
THISTLE UNIT #050H	3002541302	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/10/2014 0:00	6.5		158786.1		51053.6	8121.8	10.6	874.5	1.42	96500	122	0	150	FALSE
THISTLE UNIT #058H	3002541342	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/10/2014 0:00	6.4		165329.7		52112.8	8757.2	22.5	16537.2	1.43	101300	183	0	200	FALSE
THISTLE UNIT #017H	3002539893	33	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		9/25/2014 0:00	6		283085.1		71469.2	25489.1	54.1	3893.9	6.57	179335	427	0	100	FALSE
THISTLE UNIT #044H	3002541032	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		11/14/2014 0:00	5.7		55748		7983	68	924	1.4	103965	171	740	250	FALSE	
THISTLE UNIT #062H	3002541466	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		11/14/2014 0:00	6.6		45038		7608	34	833	1.2	86371	122	680	200	FALSE	
THISTLE UNIT #063H	3002541467	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		11/14/2014 0:00	6.2		47247		8197	19	896	0.78	90999	244	600	230	FALSE	
THISTLE UNIT #064H	3002541468	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		11/14/2014 0:00	6.1		47592		7723	16	841	0.8	90540	98	660	190	FALSE	
THISTLE UNIT #044H	3002541032	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		3/20/2015 0:00	6.2		74216		6933	14	882	0.41	129179	122	430	100	FALSE	
THISTLE UNIT #017H	3002539893	33	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		4/8/2015 0:00	5.9		82059		19233	14	3716	23	169603	61	640	200	FALSE	
THISTLE UNIT #032H	3002540016	33	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		4/8/2015 0:00	6.1		91267		22892	11	4435	3.2	193029	37	250	290	FALSE	
THISTLE UNIT #044H	3002541032	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/8/2015 0:00	6.1		77388		9133	27	1113	0.74	138954	98	640	270	FALSE	
THISTLE UNIT #046H	3002541118	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/8/2015 0:00	6		70262		10319	26	1543	1.1	131655	122	620	250	FALSE	
THISTLE UNIT #047H	3002541252	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/8/2015 0:00	6.1		85383		8644	36	1037	0.56	150004	85	650	330	FALSE	
THISTLE UNIT #050H	3002541302	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/8/2015 0:00	6		83406		8769	52	1081	0.79	147503	122	540	230	FALSE	
THISTLE UNIT #065H	3002541303	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/8/2015 0:00	5.9		87039		9224	50	1170	0.69	154348	98	700	250	FALSE	
THISTLE UNIT #061H	3002541487	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/8/2015 0:00	7.3		87007		9441	27	1109	0.45	154055	110	460	230	FALSE	
THISTLE UNIT #05																								

Table 3
Produced Water

wellname	api	section	township	range	county	state	field	formation	samplesource	sampledate	ph	specificgravity	tds_mgL	resistivity_ohm_cm	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL	CorrectFlag
THISTLE UNIT #050H	3002541302	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/7/2015 0:00	6.7				60221	6449	42	772	1.4	106000	195	717	330	FALSE
BLACK MAMBA 15 STATE COM #002H	3002540173	15	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/29/2014 0:00	6.2		178123		56623.9	9330.2	65.4	985.2	1.6	108363	183	752	350	FALSE
TAIPAN 10 STATE COM #001H	3002540743	15	23S	33E	Lea	NM		BONE SPRING 2ND SAND		4/29/2014 0:00	6.1		179067		55815.4	9602.9	89	997.5	2.3	109984	122	684	300	FALSE
THISTLE UNIT #061H	3002541487	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/1/2014 0:00	6.7		154843.8		51189.4	8662.8	20.4	924.1	1.5	91763	122	0	250	FALSE
THISTLE UNIT #055H	3002541488	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/1/2014 0:00	6.4		144752.8		47940.9	7687.8	36.9	847.7	1.92	85978	122	0	300	FALSE
BLACK MAMBA 15 STATE COM #002H	3002540173	15	23S	33E	Lea	NM		BONE SPRING 2ND SAND		12/17/2014 0:00	6.75				78099	12696	75	1273	1.4	148309	122	480	130	FALSE
THISTLE UNIT #047H	3002541252	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		12/17/2014 0:00	6.25				77109	10168	43	1135	0.1	141623	110	580	130	FALSE
THISTLE UNIT #057H	3002541341	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		12/17/2014 0:00	6.5				79448	10789	52	1174	1.2	146515	122	520	120	FALSE
THISTLE UNIT #058H	3002541342	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		12/17/2014 0:00	6.5				60347	10265	60	1130	1.3	115793	134	560	100	FALSE
THISTLE UNIT #064H	3002541468	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		1/8/2015 0:00	6.2				47696	7829	32	888	0.85	90068	61	540	190	FALSE
THISTLE UNIT #055H	3002541488	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		1/8/2015 0:00	6.2				52748	8257	44	911	1	98911	73	460	190	FALSE
PRONGHORN AHO FEDERAL #001	3002526496	6	23S	33E	LEA	NM	LIVINGSTON RIDGE	STRAWN		9/26/2000 0:00	5.5	1.148				20.1	0	12.2		35.5	61.1	48.8		TRUE
THISTLE UNIT #065H	3002541303	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/7/2015 0:00	6.5				53029	9452	70	1354	1.7	102000	122	668	330	FALSE
TAIPAN 10 STATE COM #001H	3002540743	15	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/14/2015 0:00	6.7				57680	10931	52	1378	1.1	112000	134	492	660	FALSE
SEA SNAKE 35 STATE #002H	3002541599	35	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/14/2015 0:00	6.8				49141	6084	22	921	0.62	89000	220	269	440	FALSE
SEA SNAKE 35 STATE #001H	3002541625	35	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/14/2015 0:00	6.9				48857	6766	26	1090	1.8	90000	183	655	440	FALSE
THISTLE UNIT #053H	3002541794	28	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/14/2015 0:00	6.9				49335	11192	46	1560	1.3	100000	195	594	264	FALSE
THISTLE UNIT #059H	3002541796	28	23S	33E	Lea	NM		BONE SPRING 2ND SAND		5/14/2015 0:00	6.6				59742	11512	106	1633	2.1	117000	220	363	374	FALSE
THISTLE UNIT #043H	3002540898	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/16/2015 0:00	7		155146.4	0.041	51155.5	7420	35.9	868.5	1.25	94478.7	183	600	900	FALSE
THISTLE UNIT #046H	3002541118	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/16/2015 0:00	7		166100.9	0.039	55345.3	7538	8.9	884.9	1.68	101077.2	244	635	500	FALSE
THISTLE UNIT #048H	3002541253	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/16/2015 0:00	6.7		162709.3	0.039	53857.8	7649	29.6	877.2	1.03	98977.7	244	675	300	FALSE
THISTLE UNIT #050H	3002541302	34	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/16/2015 0:00	6.68		146169.4	0.044	47938.1	7126	53.7	824.4	1.43	88480	488	880	500	FALSE
THISTLE UNIT #065H	3002541303	33	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/16/2015 0:00	6.73		159590.4	0.04	52593.6	7634	38.6	905.6	1.28	97178.1	183	635	450	FALSE
SEA SNAKE 35 STATE #001H	3002541625	35	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/16/2015 0:00	7		146173.6	0.044	48514.2	6777	38.9	763.1	1.51	88880	207.4	635	60	FALSE
SEA SNAKE 35 STATE #003H	3002542283	35	23S	33E	Lea	NM		BONE SPRING 2ND SAND		7/23/2015 0:00	7		118969.6	0.054	39811	5202	26.1	612.4	1.05	71983.8	231.8	820	40	FALSE
THISTLE UNIT #018H	3002540010	28	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		9/9/2015 0:00	6.5		182009	0.035	56667.9	11090	47.3	1461	2	111474.9	61	600	260	FALSE
THISTLE UNIT #020H	3002540015	27	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		9/9/2015 0:00	6.5		167967.8	0.038	53995.6	9118	40.6	1014	1.19	102676.8	73.2	425	200	FALSE
TAIPAN 10 STATE COM #001H	3002540743	15	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	6.5		183673.6	0.035	59642.2	9492	48.1	1067	1.08	111974.8	61	765	230	FALSE
THISTLE UNIT #056H	3002541340	22	23S	33E	Lea	NM				9/9/2015 0:00	5.43		135196.2	0.047	43673.3	7109	54.7	790.2	1.15	81881.5	500.2	765	600	FALSE
THISTLE UNIT #057H	3002541341	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	7		130630.5	0.049	47917.4	2149	12.9	341.3	0.3	78382.3	561	710	210	FALSE
THISTLE UNIT #058H	3002541342	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.63		172311.7	0.037	54411.1	10120	45.1	105276.3	1.24	105276.3	305	425	550	FALSE
THISTLE UNIT #062H	3002541466	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	7.54		106744.9	0.06	32885.4	5523	0.8	1747	0.1	64285.5	976	1205	600	FALSE
THISTLE UNIT #063H	3002541467	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.62		164203.7	0.039	53030.1	8746	37.1	968.7	1.11	100077.4	193	635	670	FALSE
THISTLE UNIT #064H	3002541468	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.03		184017	0.035	59935.2	9356	57.2	1065	1.28	111874.8	256.2	940	810	FALSE
THISTLE UNIT #061H	3002541487	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	4.63		236468.1	0.027	65180.9	19100	44.5	4014	3.95	146666.9	75.2	425	640	FALSE
THISTLE UNIT #055H	3002541488	22	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.72		217107.3	0.029	62587.2	15640	25.7	322	3.22	133869.8	256.2	635	1100	FALSE
THISTLE UNIT #059H	3002541796	28	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.1		140101.6	0.046	47035.8	5996	30.2	763	1.97	84880.9	439.2	740	780	FALSE
THISTLE UNIT #051H	3002541896	28	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.16		101658.2	0.063	34198.8	4245	13.2	578.6	0.37	61286.2	158.6	1030	170	FALSE
THISTLE UNIT #052H	3002541897	28	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	6.5		161549.2	0.04	51767.5	8900	56.2	1004	1.25	98777.7	73.2	425	250	FALSE
HORNED VIPER 20 FEDERAL COM #001H	3002541913	20	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	7		130154.4	0.049	49951.8	721	11.4	140	0.1	78282.4	158.6	740	210	FALSE
HORNED VIPER 20 FEDERAL COM #002H	3002541914	20	23S	33E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	6.1		272936.3	0.023	76649.8	21050	34.8	4456	4.19	169061.9	40	600	300	FALSE
THISTLE UNIT #071H	3002542425	27	23S	33E	Lea	NM		BONE SPRING 1ST SAND		9/9/2015 0:00	5.6		171476.3	0.037	55363.2	9140	40.4	1023	1.1	104576.4	244	560	770	FALSE
THISTLE UNIT #026H	3002542431	22	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		9/9/2015 0:00	5.04		133984.6	0.048	45518.8	5227	38.2	672.7	0.72	80481.9	972.2	880	240	FALSE
MARSHALL #001	3002508358	19	23S	33E	LEA	NM	CRUZ	DELAWARE	UNKNOWN				238931							148600	127	156		TRUE
THISTLE UNIT #017H	3002539893	33	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		11/18/2011 0:00	7		249357.8		68908.3	19792	108	3609	3.5	153350	61	1010	300	FALSE
THISTLE UNIT #020H	3002540015	27	23S	33E	Lea	NM		DELAWARE-BRUSHY CANYON		11/18/2011 0:00	7		245475		66848	20494	40	3559	4	151089	61	990	300	FALSE
GAUCHO UNIT #011H	3002541184	17	22S	34E	Lea	NM		BONE SPRING 3RD SAND		2/20/2015 0:00	6.8				43301	5338	0	769	0	78300	122	640	120	FALSE
NEW MEXICO BS STATE #001	3002508468	1	22S	34E	LEA	NM			DST				129792							70560	412	9365		TRUE
SLATTERY PERMIT #001	3002508473	7	22S	34E	LEA	NM			UNKNOWN				4460							2502	158	243		TRUE
GAUCHO UNIT #001	3002533440	29	22S	34E	Lea	NM				5/19/2001 0:00	7.83		19593.3		6825.3	543	49	70		11533	450	39	90	FALSE
GAUCHO 21 FEDERAL #001	3002534266	21	22S	34E	Lea	NM				5/19/2001 0:00	6.67		6188.8		2079.6	215	25	30		3593	183	39	90	FALSE
GAUCHO UNIT #003	3002534557	20	22S	34E	Lea	NM				5/19/2001 0:00	5.02		628.8		118.9	18	83	2		200	109.8	92	125	FALSE
GAUCHO UNIT #006	3002534789	17	22S	34E	Lea	NM				5/19/2001 0:00	5.98		46757.5		16350.9	1379	150	162		28247	158.6	152	175	FALSE
GAUCHO UNIT #011H	3002541184	17	22S	34E	Lea	NM		BONE SPRING 3RD SAND		9/30/2015 0:00	7.5		156141.2	0.041	48642.5	6969.8	30.2	943.9	1.46	97977.9	305	1005	470	FALSE
GAUCHO UNIT #012H	3002541564	20	22S	34E	Lea	NM		BONE SPRING 2ND SAND		9/3														

Table 3
Produced Water

wellname	api	section	township	range	county	state	field	formation	samplesource	sampledate	ph	specificgravity	tds_mgL	resistivity_ohm_cm	sodium_mgL	calcium_mgL	iron_mgL	magnesium_mgL	manganese_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL	co2_mgL	CorrectFlag
RIO BLANCO 33 FEDERAL #003	3002537860	33	22S	34E	Lea	NM				9/9/2015 0:00	5.6		138283.7	0.046	44690.7	7319	28	807.6	0.85	83981.1	366	675	561.2	FALSE
GAUCHO UNIT #010H	3002541183	17	22S	34E	Lea	NM		BONE SPRING 3RD SAND		9/9/2015 0:00	5.58		165155.1	0.039	52757.1	9222	54.2	1040	1.44	100777.3	219.6	560	600	FALSE
GAUCHO UNIT #015H	3002541566	20	22S	34E	Lea	NM		BONE SPRING 2ND SAND		9/9/2015 0:00	5.42		158146.5	0.04	50243.6	9024	42.8	1042	1.08	96378.3	231.8	710	860	FALSE

Table 4 - Chemistry of Produced Water from Formations

wellname	api	section	township	range	unit	county	state	field	formation	depth	samplesource	sampledate	ph	specificgravity	specificgravity_temp_F	tds_mgL	resistivity_ohm_cm	resistivity_ohm_cm_temp_F	conductivity	conductivity_temp_F	sodium_mgL	calcium_mgL	magnesium_mgL	chloride_mgL	bicarbonate_mgL	sulfate_mgL
MCKITTRICK FED #1	3001500135	25	22S	25E	G	EDDY	NM		DEVONIAN		DST					16200							8762	290	1175	
MCKITTRICK FED #1	3001500135	25	22S	25E	G	EDDY	NM		DEVONIAN		DST					17510							9389	664	982	
CARNERO PEAK UT #001	3001510053	31	22S	25E	A	EDDY	NM		DEVONIAN		DST					14601							7236	515	1487	
CARNERO PEAK UT #001	3001510053	31	22S	25E	A	EDDY	NM		DEVONIAN		DST					15780							8126	336	1467	
CARNERO PEAK UT #001	3001510053	31	22S	25E	A	EDDY	NM		DEVONIAN		DST					15580							7853	487	1488	
BANDANA POINT UT #001	3001500044	13	23S	23E	O	EDDY	NM	BANDANA POINT	DEVONIAN		DST					15500							8020	500	1190	
TORTOISE ASB COM #001	3001510490	29	23S	24E	G	EDDY	NM		DEVONIAN		DST					17861							7760	490	3100	
TORTOISE ASB COM #001	3001510490	29	23S	24E	G	EDDY	NM		DEVONIAN		DST					15601							7780	476	1600	
REMUDA BASIN UNIT #001	3001503691	24	23S	29E	J	EDDY	NM	REMUDA	DEVONIAN		SWAB					64582							37500	610	1700	
REMUDA BASIN UNIT #001	3001503691	24	23S	29E	J	EDDY	NM	REMUDA	DEVONIAN		SWAB					56922							29000	1740	4980	
BELL LAKE UNIT #006	3002508483	6	23S	34E	O	LEA	NM	BELL LAKE NORTH	DEVONIAN		HEATER TREATER		7			71078							42200	500	1000	
ANTELOPE RIDGE UNIT #003	3002521082	34	23S	34E	K	LEA	NM	ANTELOPE RIDGE	DEVONIAN		UNKNOWN	14/11/1967 0:00	6,9			80187							47900	476	900	
ANTELOPE RIDGE UNIT #003	3002521082	34	23S	34E	K	LEA	NM	ANTELOPE RIDGE	DEVONIAN		UNKNOWN	14/11/1967 0:00	6,9			80187							47900	476	900	
CLINE FEDERAL #001	3002510717	14	23S	37E	K	LEA	NM	CLINE	DEVONIAN		PRODUCTION TEST					118979							71280	462	2593	
E C HILL B FEDERAL #001	3002510945	34	23S	37E	A	LEA	NM	TEAGUE	DEVONIAN		UNKNOWN					112959							67390	288	2765	
E C HILL D FEDERAL #001	3002510947	34	23S	37E	H	LEA	NM	TEAGUE	DEVONIAN		UNKNOWN					35639										
E C HILL D FEDERAL #004	3002510950	34	23S	37E	A	LEA	NM	TEAGUE	DEVONIAN		UNKNOWN					236252							147000	129	781	
HUAPACHE #003	3001500020	22	24S	22E	F	EDDY	NM		DEVONIAN		DST					3110							48	246	2020	
JURNEGAN POINT #001	3001510280	5	24S	25E	M	EDDY	NM	WILDCAT	DEVONIAN		DST	14/12/1964 0:00	7			229706							136964	198	2511	
JURNEGAN POINT #001	3001510280	5	24S	25E	M	EDDY	NM	WILDCAT	DEVONIAN		DST	14/12/1964 0:00	7			203100							121100	175	2220	
WHITE CITY PENN GAS COM UNIT 1 #001	3001500408	29	24S	26E	A	EDDY	NM		DEVONIAN		DST	01/03/1960 0:00	7	1,012	60		0,36	75	25596	64	6072	1002	132	10120	653	1336
STATE B COM #001	3002509716	36	24S	36E	C	LEA	NM	CUSTER	DEVONIAN		UNKNOWN					176234							107400	128	1004	
ELLIOTT H FEDERAL #001	3002512272	31	24S	38E	H	LEA	NM	DOLLARHIDE	DEVONIAN		WELLHEAD					58687										
ELLIOTT H FEDERAL #001	3002512272	31	24S	38E	H	LEA	NM	DOLLARHIDE	DEVONIAN		WELLHEAD					57018										
WEST DOLLARHIDE DEVONIAN UNIT #104	3002512297	32	24S	38E	I	LEA	NM	DOLLARHIDE	DEVONIAN		WELLHEAD					50858							30200	183	980	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST	17/06/1961 0:00	6			80880							46200	340	3050	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					84900							48600	840	2650	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					72200							41000	370	2960	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					80900							46200	340	3050	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					77600							44000	550	3240	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					135000							77000	650	5810	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					114000							65000	280	5110	
WESTATES FEDERAL #004	3002511389	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		DST					135000							77000	500	5320	
WESTATES FEDERAL #008	3002511393	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		UNKNOWN					91058							51020	376	4783	
WESTATES FEDERAL #008	3002511393	1	25S	37E	E	LEA	NM	JUSTIS NORTH	FUSSELMAN		UNKNOWN					86847							50450	363	2544	
STATE NJ A #001	3002511398	2	25S	37E	A	LEA	NM	JUSTIS NORTH	DEVONIAN		DST					105350							59300	660	4950	
NEW MEXICO BM STATE #002	3002511407	2	25S	37E	I	LEA	NM	JUSTIS NORTH	MONTOYA		UNKNOWN					77770							45500	1800	2400	
HALE STATE #003	3002512581	2	25S	37E	H	LEA	NM	JUSTIS NORTH	MONTOYA		WELLHEAD					64916							37000	813	2500	
SOUTH JUSTIS UNIT #016F	3002511556	13	25S	37E	F	LEA	NM	JUSTIS	FUSSELMAN		UNKNOWN					57675							34030	595	1211	
LEARCY MCBUFFINGTON #008	3002511569	13	25S	37E	N	LEA	NM	203MNTY, 259FSLM	FUSSELMAN	7052		02/01/1900 0:00	7,6	1,037	78	67909			81429	67		2603	684	38887	742	2489
LEARCY MCBUFFINGTON #008	3002511569	13	25S	37E	N	LEA	NM	JUSTIS	MONTOYA		UNKNOWN					67898							38880	742	2489	
A B COATES C FEDERAL #014	3002511736	24	25S	37E	G	LEA	NM	JUSTIS	MONTOYA		UNKNOWN					39261							22840	871	1030	
SOUTH JUSTIS UNIT #023C	3002511760	25	25S	37E	C	LEA	NM	JUSTIS	FUSSELMAN		SEPARATOR					63817							35870	360	3442	
CARLSON A #002	3002511764	25	25S	37E	I	LEA	NM	JUSTIS	FUSSELMAN		DST					208280							124000	510	3400	
STATE Y #009	3002511777	25	25S	37E	A	LEA	NM	JUSTIS	FUSSELMAN		DST	17/03/1961 0:00	7,3			219570							129000	960	4630	
STATE Y #009	3002511777	25	25S	37E	A	LEA	NM	JUSTIS	FUSSELMAN		DST	18/03/1961 0:00	6,8			163430							96000	290	3780	
CARLSON B 25 #004	3002511784	25	25S	37E	P	LEA	NM	JUSTIS	FUSSELMAN		SEPARATOR					184030							112900	68	1806	
COPPER #001	3002511818	28	25S	37E	J	LEA	NM	CROSBY	DEVONIAN		UNKNOWN					27506							15270	1089	1079	
ARNOTT RAMSAY NCT-B #003	3002511863	32	25S	37E	A	LEA	NM	CROSBY	DEVONIAN	8797		02/01/1900 0:00		1,142	70							17244	5345	100382	476	
ARNOTT RAMSAY NCT-B #003	3002511863	32	25S	37E	A	LEA	NM	CROSBY	DEVONIAN		UNKNOWN					158761										
WEST DOLLARHIDE DEVONIAN UNIT #110	3002512386	5	25S	38E	B	LEA	NM	DOLLARHIDE	DEVONIAN		UNKNOWN					56776										
FARNSWORTH FEDERAL #006	3002511950	4	26S	37E	A	LEA	NM	CROSBY	DEVONIAN		UNKNOWN					31931							20450	302	591	

OSE Well Logs – NO WATER SUPPLY WELLS

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

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July 16, 2019

Hobbs News Sun
201 N. Thorp
P.O. Box 850
Hobbs, N.M. 88240

LEGAL NOTICE

AWR Disposal LLC, 3300 N. A Street, Ste. 220, Midland, TX 79705 is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Russell State SWD #1 will be located 741 feet from the North line and 2349 feet from the West line, Section 25, Township 22 South, Range 33 East, Lea County, New Mexico. Produced water and recycled produced water from area production will be commercially disposed into the Devonian, Fusselman and Montoya Formations at a depth of 16,410 feet to 18,151 feet at a maximum surface pressure of 3,000 psi and an average injection rate of 30,000 barrels per day. The proposed SWD well is located approximately 29 miles west of Eunice, New Mexico.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, NM 87505 (505) 476-3460 within 15 days of the date of this notice.

Additional information can be obtained by contacting Mr. Randall Hicks, agent for Accelerated Water Resources, LP, at 505-238-9515.

Sincerely,
R.T. Hicks Consultants



Randall Hicks
Principal

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

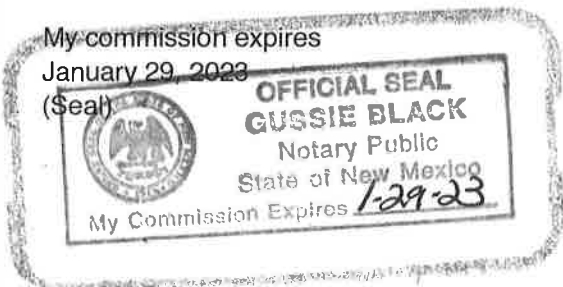
Beginning with the issue dated
July 17, 2019
and ending with the issue dated
July 17, 2019.


Publisher

Sworn and subscribed to before me this
17th day of July 2019.


Business Manager

My commission expires
January 29, 2023
(Seal)



This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE JULY 17, 2019

AWR Disposal LLC, 3300 N. A Street, Ste. 220, Midland, TX 79705 is filing Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Russell State SWD #1 will be located 741 feet from the North line and 2349 feet from the West line, Section 25, Township 22 South, Range 33 East, Lea County, New Mexico. Produced water and recycled produced water from area production will be commercially disposed into the Devonian, Fusselman and Montoya Formations at a depth of 16,410 feet to 18,151 feet at a maximum surface pressure of 3,000 psi and an average injection rate of 30,000 barrels per day. The proposed SWD well is located approximately 29 miles west of Eunice, New Mexico.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, NM 87505 (505) 476-3460 within 15 days of the date of this notice.

Additional information can be obtained by contacting Mr. Randall Hicks, agent for Accelerated Water Resources, LP, at 505-238-9515.

Sincerely,
R.T. Hicks Consultants
Randall Hicks
Principal
#34446

67115764

00230913

RANDALL HICKS
R.T. HICKS CONSULTANTS, LTD
901 RIO GRANDE BLVD NM
SUITE F-142
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July 16, 2019

NOTIFICATION TO INTERESTED PARTIES

Via U.S. Certified Mail – Return Receipt Requested

To Whom It May Concern:

AWR Disposal LLC, Midland, Texas, has made application to the New Mexico Oil Conservation Division to drill and complete, for salt water disposal, the Russell State SWD #1. The proposed commercial operation will be for produced water disposal from area operators. As indicated in the notice below, the well is located in Section 25, Township 22 South, Range 33 East, Lea County, New Mexico.

The published notice states that the interval will be from 16,410 feet to 18,151 feet into the Devonian, Fusselman and Montoya Formations.

LEGAL NOTICE

AWR Disposal LLC, 3300 N. A Street, Ste. 220, Midland, TX 79705 filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Russell State SWD #1 will be located 741 feet from the North line and 2349 feet from the West line, Section 25, Township 22 South, Range 33 East, Lea County, New Mexico. Produced water from area production will be commercially disposed into the Devonian, Fusselman and Montoya Formations at a depth of 16,410 feet to 18,151 feet at a maximum surface pressure of 3,000 psi and an average injection rate of 30,000 barrels per day. The proposed SWD well is located approximately 29 miles west of Eunice, New Mexico.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, NM 87505 (505) 476-3460 within 15 days of the date of this notice.

You have been identified as a party who may be interested as an offset lessee or operator. **IF YOU WOULD LIKE AN ELECTRONIC COPY OF THE ENTIRE PERMIT PACKAGE, PLEASE SEND YOUR REQUEST TO r@rthicksconsult.com** (request a read receipt to avoid your email becoming stuck in spam).

Thank you for your attention in this matter.

Sincerely,
R.T. Hicks Consultants



Randall Hicks
Principal

OPERATORS, LEASEHOLDERS AND SURFACE OWNERS WITHIN 2 MILES -RADIUS

DATA EXTRACTED FROM TABLES 1, 2A, 2B AND 2C

KAISER-FRANCIS OIL CO Russell State SWD #1 6733 S YALE AVE TULSA, OK, OK 74136	FIRST INTL BK OF AZ Russell State SWD #1 2231 E Camelback Rd Phoenix, AZ 85016	DEVON ENERGY PROD. COMPANY, LP Russell State SWD #1 333 West Sheridan Ave. Oklahoma City, OK 73102
EOG Y RESOURCES, INC. Russell State SWD #1 104 S 4TH ST ARTESIA, NM 88210	CONOCOPHILLIPS COMPANY Russell State SWD #1 P. O. BOX 7500 BARTLESVILLE, OK 74005	JAVELINA PARTNERS Russell State SWD #1 616 Texas St. Fort Worth, TX 76102
ROBERT E. LANDRETH Russell State SWD #1 110 W. LOUISIANA SUITE 404 MIDLAND, TX 79701	EOG RESOURCES INC Russell State SWD #1 P.O. Box 2267 Midland, TX 79702	MARBOB ENERGY CORP Russell State SWD #1 PO BOX 227 ARTESIA, NM 882110227
DEVON SFS OPERATING INC Russell State SWD #1 20 N. BROADWAY STE 1500 OKLAHOMA CITY, OK 73102	New Mexico State Land Office Russell State SWD #1 310 Old Santa Fe Trail Santa Fe, NM 87501	Bureau of Land Management Russell State SWD #1 620 E. Greene Street Carlsbad, NM 88220-6292
LIMESTONE BASIN PROP RANCH LLC Russell State SWD #1 18 DESTA DRIVE MIDLAND, TX 79705	MERCHANT LIVESTOCK Russell State SWD #1 PO BOX 1105 EUNICE, NM 88231	

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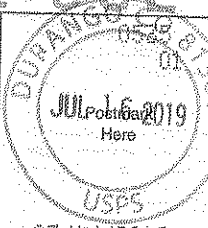
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Bureau of Land Management	
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July 23, 2019

Mr. Phillip Goetze, P.G.
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: AWR Disposal LLC Russell State SWD#1
UL C, Section 25 T22S R33E, Lea County

Dear Mr. Goetze:

On behalf of AWR Disposal LLC, R.T. Hicks Consultants is providing data and an opinion regarding the probability that injection of wastewater in the above referenced well at the proposed rates will cause seismic events of sufficient magnitude to create damage. It is our understanding that OCD is interested in such an opinion as part of the SWD approval process. We elected to provide this opinion as a separate submission as the C-108 does not specifically require such an opinion.

We relied upon the following data to develop our opinion

- State of stress in the Permian Basin, Texas and New Mexico: Implications for induced seismicity, Jens-Erik Lund Snee and Mark D. Zoback, The Leading Edge, February 2018¹
- Plate 5, which is reproduced from the Snee and Zoback publication, which uses the following references
 - Crone, A. J., and R. L. Wheeler, 2000, Data for Quaternary faults, liquefaction features, and possible tectonic features in the Central and Eastern United States, east of the Rocky Mountain front; U.S. Geological Survey Open-File Report.
 - Ewing, T. E., R. T. Budnik, J. T. Ames, and D. M. Ridner, 1990, Tectonic map of Texas: Bureau of Economic Geology, University of Texas at Austin.
 - Green, G. N., and G. E. Jones, 1997, e digital geologic map of New Mexico in ARC/INFO format: U.S. Geological Survey Open-File Report.
 - Ruppel, S. C., R. H. Jones, C. L. Breton, and J. A. Kane, 2005, Preparation of maps depicting geothermal gradient and Precambrian structure in the Permian Basin: USGS Order no. 04CRSA0834 and Requisition no. 04CRPR01474.
 - NMOCD database of oil and gas wells
- Plate 5, which shows the distribution of active and new SWD wells in the area of the proposed AWR Disposal SWD well
- Stratigraphic and lithologic information from two deep wells in the Delaware Basin
- Data on the thickness and lithology of the Simpson Group from the Texas Bureau of Economic Geology²

¹ https://scits.stanford.edu/sites/default/files/3702_tss_lundsnee_v2.pdf

² http://www.beg.utexas.edu/resprog/permianbasin/PBGSP_members/writ_synth/Simpson.pdf

Plate 5 reproduces Figure 3 of the 2018 publication of Snee and Zoback and shows

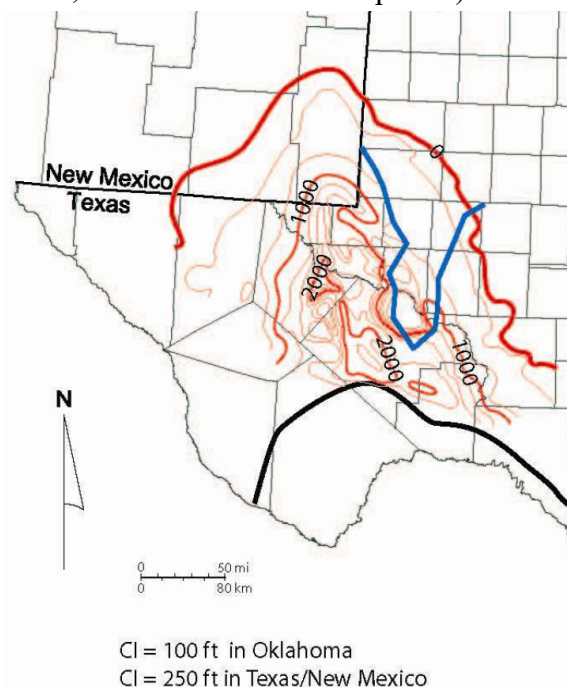
1. Fault traces based upon the references provided above for which Dr. Snee and Dr. Zoback provide a value of the fault slip potential (FSP)
2. Areas of documented seismic activity, such as the Dagger Draw area and a magnitude 2.0-2.9 earthquake that occurred between 1970-2004 about 27-miles southeast of the proposed Russell State SWD #1. A slightly larger magnitude and more recent seismic event is reported about 22 miles west of the Russell State SWD #1 well location.
3. Although Plate 5 does not show faults that may be identified in confidential seismic data owned by oil and gas operators, the mapped fault that is closest to the Russell State SWD #1 (about 4.5 miles to the west) exhibits a low FSP (less than 5%) based upon the modeling and analysis of Snee and Zoback referenced above
4. Other mapped faults in southern Lea County shown on Plate 5 also show a low FSP, except for part of southwest-northeast trending fault about 40 miles west of the Russell State SWD #1 well that has a FSP of about 25 – 33% in the central portion of this fault trace.

Plate 6 reproduces the major elements of Plate 5 in the inset map and also shows that within an 8-mile radius around the proposed Russell State SWD #1, the OCD database shows 4 active and 7 new/proposed Devonian SWDs, which translates into an average density of about one active SWD for every 12.5 square miles and a density of one SWD for every 4.6 square miles if all of the proposed Devonian SWDs are drilled.

Figure 4 from the referenced Bureau of Economic Geology (The Middle-Upper Ordovician Simpson Group of the Permian Basin: Deposition, Diagenesis, And Reservoir Development) is attached to this letter and the portion of that figure for the Delaware Basin is shown to the right. In southern Lea County the mapped thickness appears to be 500-1500 feet thick (note one contour line appears to be missing on the map). This unit, which is clay-rich carbonate interbedded with shale and sandstone, provides an excellent permeability/pressure barrier between the injection zone and the basement faults that were re-activated during Woodford time.

Data from the Amoco Federal CW Com 1 (3002528119) show that the thickness of the Simpson in the Antelope Ridge area of Lea County (Section 3 24S 34E) is about 450 feet thick with. This is consistent with Figure 4 of the BEG paper (probably because this well was used to produce the isopach map).

We contend that the data permit conclusion that unmapped faults (which may be located by confidential seismic data that AWR Disposal does not possess) near the Russell State SWD #1



July 23, 2019

Page 3

would be dominantly north-south normal faults, as is common in Lea County. The data on Plate 6 permit a conclusion that faults near the Russell State SWD #1 are also most likely to exhibit a low FSP, like the mapped faults shown on Plate 5.

Given the density of Devonian SWDs (planned/new and active) near the proposed Russell State SWD #1 well and the high likelihood that any unmapped faults in the area would exhibit a low FSP, the probability that injection into the Russell State SWD #1 would cause an increase in pore pressure to trigger a seismic event of sufficient magnitude to cause damage is very low.

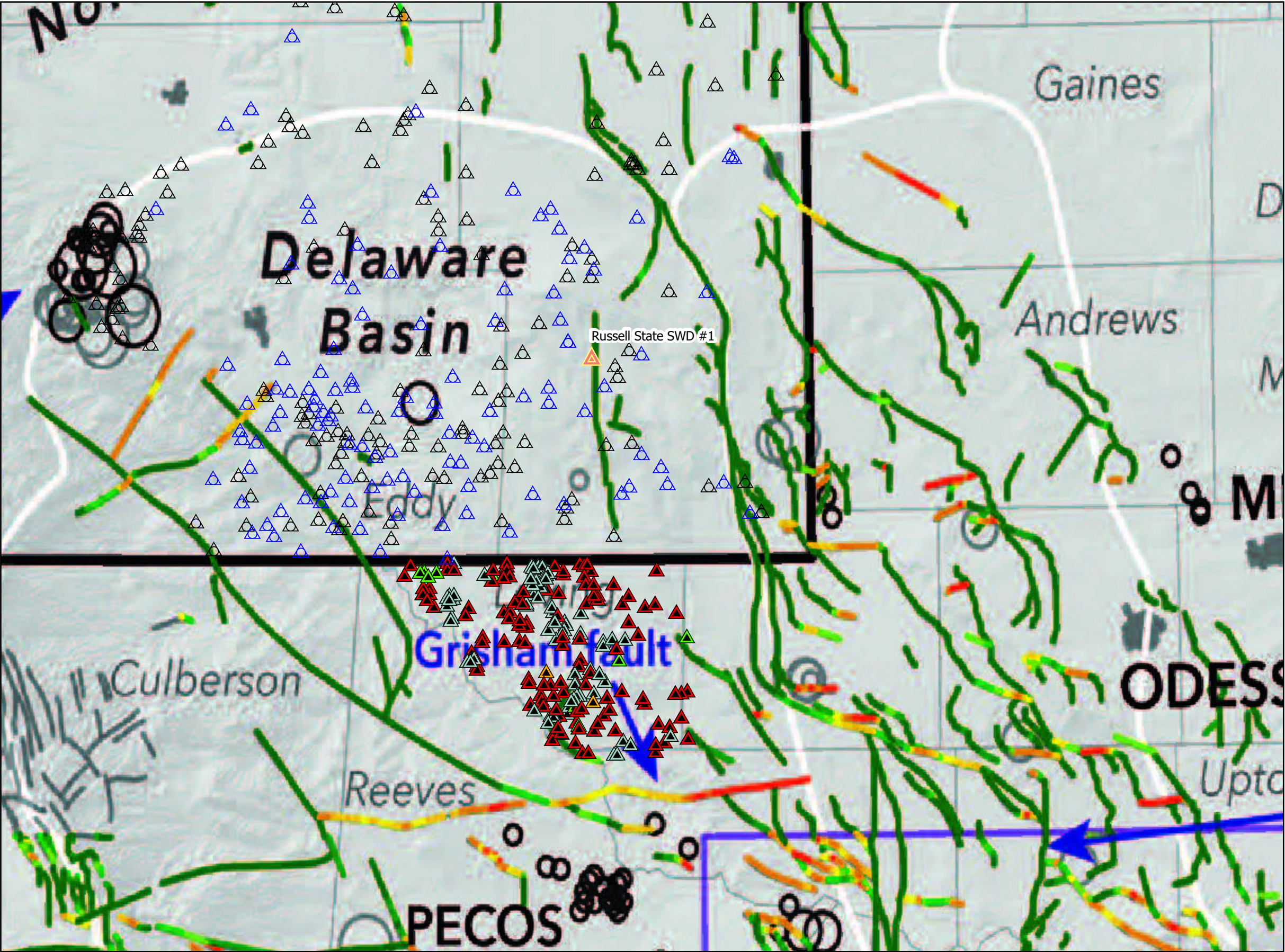
The users of this letter should recognize the uncertainties of using seismic maps of the Permian Basin to determine probability that injection of wastewater into a single SWD well could cause seismic events of sufficient magnitude to cause damage. However, on a regional basis injection by numerous wells into the Devonian/Fusselman/Montoya interval will raise the hydrostatic pressure. If pressure increases sufficiently, fluid could migrate from the injection zone along fault planes, up and down. Downward fluid migration will be intercepted first by the sandstone units of the Simpson Group. After fluid pressure increases in these sandstones, fluid would migrate downward into the Ellenberger Formation, which lies beneath the Simpson Group. This downward migration will next enter the permeable units of the Ellenberger and, over time, increase the fluid pressure. After fluid pressure in the Ellenberger is sufficiently large to cause downward migration along fault planes or other conduits, the migrating fluid will, in some areas, enter a thinner horizon of granite wash. Downward migrating fluids from the injection zone could then enter basement fault planes if the pressure in the granite wash horizon is sufficient, and reduce the frictional resistance (lubricate the faults). Reduction in the frictional force in faults due to fluid invasion can and has caused seismic events. In my opinion, the probability that injection into the Russell State SWD will measurably contribute to the events described above and will cause a seismic event resulting in damage is so low as to be nil.

Sincerely,
R.T. Hicks Consultants

A handwritten signature in black ink, appearing to read "Randall T. Hicks". The signature is stylized with a large, looped "R" and a cursive "Hicks".

Randall T. Hicks
Principal

Copy: AWR Disposal LLC



 SWD

Oil and Gas (NMOCD)

 Salt Water Injection, Active

 Salt Water Injection, New

 Injection/Disposal From Gas

 Injection/Disposal From Oil

 Injection/Disposal From Oil/Gas

 Injection/Disposal Well

well301s (Loving, TX)

Seismicity:

 M_w 2.0-2.9

 Since 2005

 M_w 3.0-3.9

 1970-2004

 M_w 4.0+

Fault slip potential (%):

0

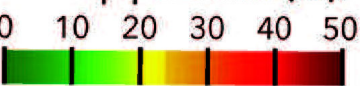
10

20

30

40

50+



Seismic and Fault Slip Potential-
Ewing et al. (1990), Green and Jones (1997), Ruppel
et al. (2005), and the USGS Quaternary Faults and
Folds Database (Crone and Wheeler, 2000).



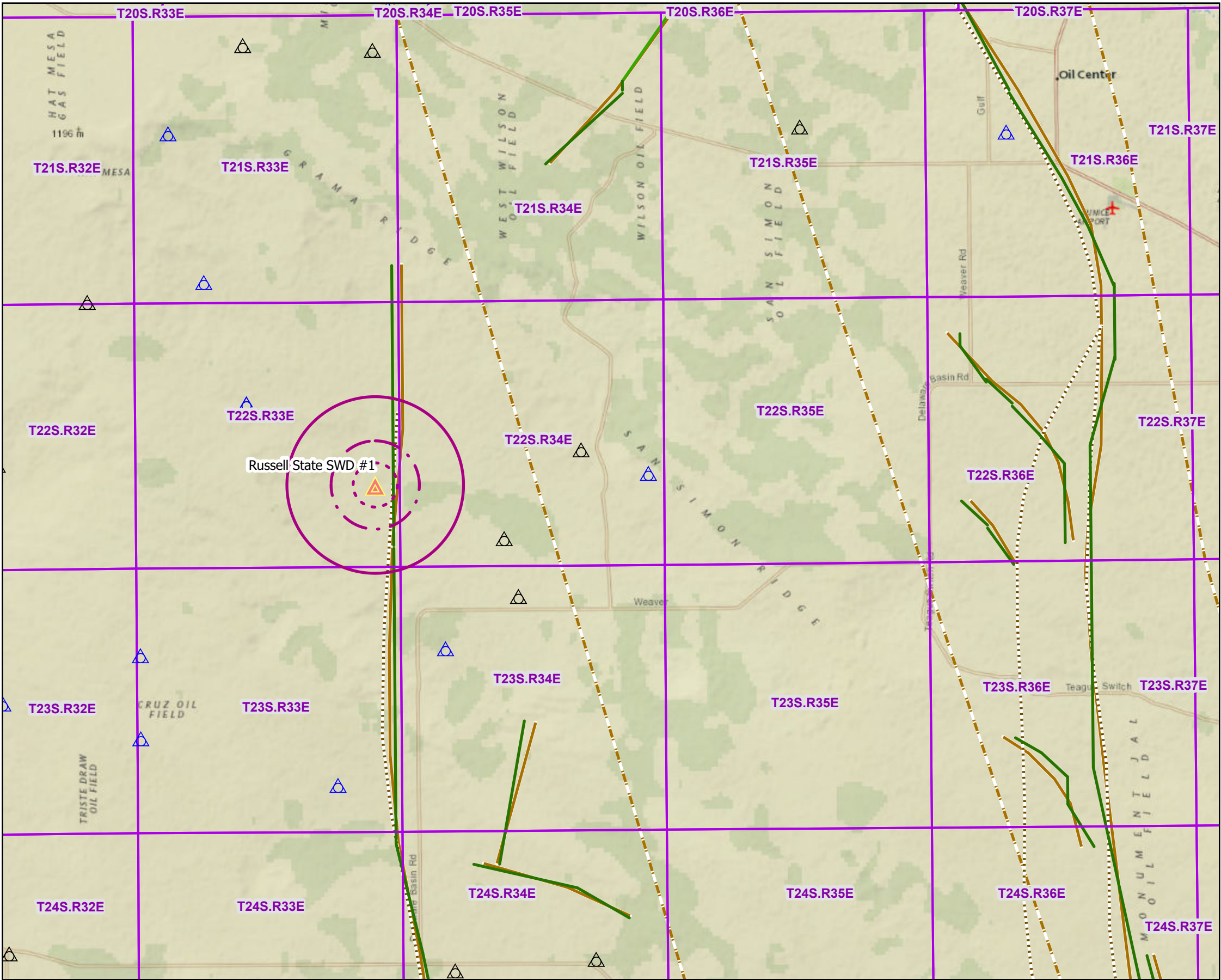
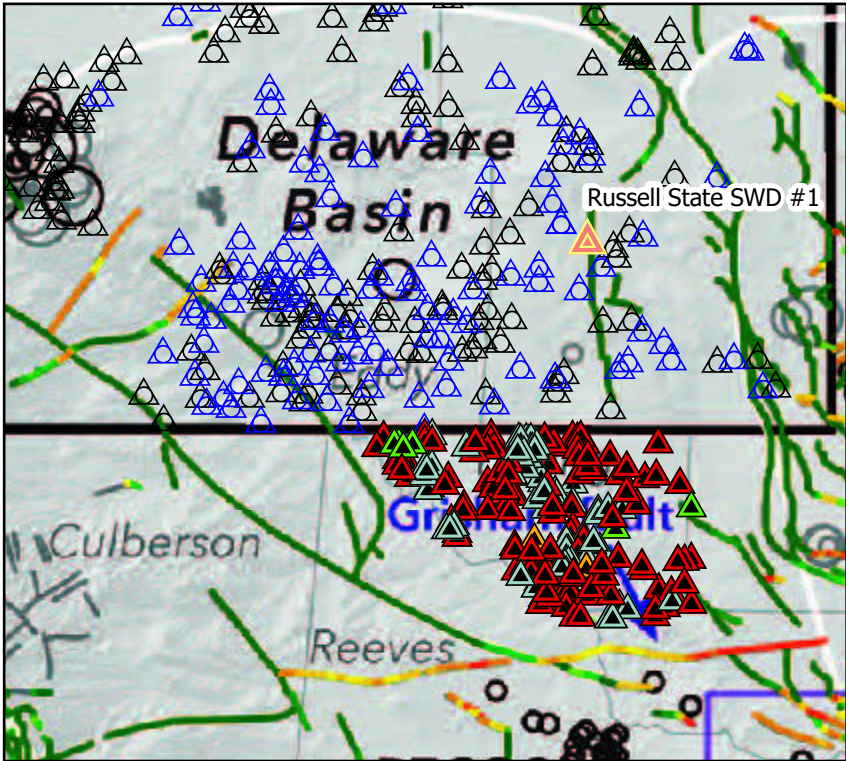
R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Seismicity and Fault Slip Potential

AWR Disposal, LLC
Russell State SWD #1

Plate 5

June 2019



- ▲ SWD
- Distance (miles)
 - 0.5
 - 1
 - 2
- Oil and Gas (NMOCD)
 - ▲ Salt Water Injection, Active
 - ▲ Salt Water Injection, New
- Faults
 - Fault - Woodford
 - - - - Fault - Precambrian
 - Fault - Basement
- Fault Slip Potential (%)
 - <5
 - 5 - 10
 - 10 - 15

Seismic and Fault Slip Potential-
Ewing et al. (1990), Green and Jones (1997), Ruppel
et al. (2005), and the USGS Quaternary Faults and
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Fault Slip Potential

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Russell State SWD #1

Plate 6

June 2019