# STATE OF NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES OIL CONSERVATION DIVISION

# APPLICATION OF LONGWOOD WATER MANAGEMENT COMPANY, LLC FOR AUTHORIZATION TO INJECT INTO THE FLOWERS SWD No. 3 WELL FOR PURPOSES OF DISPOSAL, EDDY COUNTY, NEW MEXICO.

CASE NO. \_\_\_\_\_

## **APPLICATION**

Longwood Water Management Company, LLC ("Longwood") (OGRID No. 328484), through its undersigned attorneys, hereby files this application with the Oil Conservation Division pursuant to the provisions of NMSA 1978, § 70-2-12, for an order authorizing injection of produced saltwater for purposes of disposal. In support, Longwood states the following:

1. Attached is a complete Form C-108 application for authorization to inject which contains all the information necessary to authorize the requested approval to inject. *See* C-108, attached as **Exhibit A**, and incorporated herein.

2. Longwood proposes to drill a new saltwater disposal well to be named **Flowers SWD No. 3 Well** (API No. 30-015-pending), which will be located 1153 feet from the north line and 858 feet from the west line (Unit D), Section 21, Township 26 South, Range 31 East, NMPM, Eddy County, New Mexico.

3. The proposed injection disposal interval will be within the Devonian formation [SWD; Devonian (Pool Code 96101)] through an open-hole completion between 16,927 feet and 17,871 feet below the ground.

4. Disposal fluid will be produced saltwater primarily from oil and gas wells in the area producing from the Bone Spring, Delaware, and Wolfcamp formations.

5. The estimated average disposal volume will be 50,000 barrels of water per day with a maximum anticipated volume of 60,000 barrels of water per day. The average injection pressure is expected to be approximately 2,500 psi with a maximum injection pressure of 3,385 psi.

6. Granting this application will avoid the drilling of unnecessary wells, will prevent waste, and will protect correlative rights.

7. The administrative application was protested. Accordingly, Longwood hereby requests that its application be set for hearing pursuant to 19.15.26.8(E) NMAC.

WHEREFORE, Longwood Water Management Company, LLC requests that this application be set for hearing before an Examiner of the Oil Conservation Division on March 5, 2020, and, after notice and hearing as required by law, the Division enter an order approving this application.

Respectfully submitted,

HOLLAND & HAKT LLP By:

Michael H. Feldewert Adam G. Rankin Julia Broggi Kaitlyn A. Luck Post Office Box 2208 Santa Fe, New Mexico 87504-2208 (505) 988-4421 (505) 983-6043 Facsimile mfeldewert@hollandhart.com agrankin@hollandhart.com jbroggi@hollandhart.com kaluck@hollandhart.com

ATTORNEYS FOR LONGWOOD WATER MANAGEMENT COMPANY, LLC

Revised March 23, 2017

RECEIVED:	REVIEWER:	TYPE:	APP NO:	
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THIS	ADMINISTI CHECKLIST IS MANDATORY FOR A	RATIVE APPLICATI		DIVISION RULES AND
			DIVISION LEVEL IN SANTA FE	
Applicant: Longwo	ood Water Management Compa	ny, LLC	OGRID	Number: 328484
Well Name: Flow			API: 30-0	
Pool: SWD; Devonia	11		Pool Co	de: <u>96101</u>
	ATE AND COMPLETE IN	INDICATED BELC	W	E TYPE OF APPLICATION
A. Location	n – Spacing Uni <u>t</u> – Simul	taneous Dedicatio		
<ul> <li>[1] Com</li> <li>[1] Inject</li> <li>[11] Inject</li> <li>[11]</li></ul>	ction – Disposal – Pressu WFX PMX S N REQUIRED TO: Check toperators or lease hol lty, overriding royalty of cation requires publish cation and/or concurre cation and/or concurre cation and/or concurre concurre concurre concurre concurre concurre concurre concurre concurre concurre	LC PC C Jre Increase – Enho WD IPI E those which apply Iders wners, revenue ow ed notice ent approval by SL ent approval by BL f notification or pu	anced Oil Recovery OR	
administrative understand th	N: I hereby certify that approval is <b>accurate</b> nat <b>no action</b> will be tal are submitted to the Div	and <b>complete</b> to t ken on this applicc	he best of my know	ledge. I also
N	ote: Statement must be comple	eted by an individual with	managerial and/or superv	isory capacity.
Brian Wood			12-4-19 Date	
Print or Type Name	11			
R	1. low		505 466-8120 Phone Number	
2	an and		hrigh a normitement	com
Signature	rabbur.		e-mail Address	

ENE	TE OF NEW MEXICOOil Conservation DivisionFORM C-108ERGY, MINERALS AND NATURAL1220 South St. Francis Dr.Revised June 10, 2003OURCES DEPARTMENTSanta Fe, New Mexico 87505
	APPLICATION FOR AUTHORIZATION TO INJECT
Į.	PURPOSE:       Secondary Recovery       Pressure Maintenance       XXX       Disposal       Storage         Application qualifies for administrative approval?       XXX       Yes       No
11.	OPERATOR:LONGWOOD WATER MANAGEMENT COMPANY, LLC
	ADDRESS:5400 LBJ FREEWAY, SUITE 1500, DALLAS TX 75240
	CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
111.	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 XXX 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: <b>Devonian</b> (96101)
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>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.).</li> </ol>
*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.
XIIIa	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
	NAME: BRIAN WOOD 7// TITLE: CONSULTANT
	SIGNATURE:DATE: NOV. 18, 2019
	E-MAIL ADDRESS: brian@permitswest.com
*	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:

Side 2

## III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
  - (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
  - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
  - (3) A description of the tubing to be used including its size, lining material, and setting depth.
  - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
  - (1) The name of the injection formation and, if applicable, the field or pool name.
  - (2) The injection interval and whether it is perforated or open-hole.
  - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
  - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
  - (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any,
- XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 2

Tut	Tubing Size: 7" by 5.5" Lini	Lining Material: IPC or Fiberglass lined
Tyl	Type of Packer: STAINLESS STEEL &/OR NICKEL	BL
Pac	Packer Setting Depth: 16, 827' - 16, 927'	
Oth	Other Type of Tubing/Casing Seal (if applicable):	
	<u>Additional Data</u>	Data
	1. Is this a new well drilled for injection?	XXX Yes No
	If no for what number was the well originally drilled?	illed)

No.	
XXX Yes	rilled?
Is this a new well drilled for injection?	If no, for what purpose was the well originally drilled? _

- Name of the Injection Formation: DEVONIAN 2
- Name of Field or Pool (if applicable): SWD; DEVONIAN (POOL CODE 96101) č.
- 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. 4

ON

Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: ŝ

(11,170'), SPRING (7,921'), WOLFCAMP BONE (3,982'), & PENN (13,500') OVER: DELAWARE

UNDER: none

INJECTION WELL DATA SHEET

Side 1

PAGE 1

# LONGWOOD WATER MANAGEMENT COMPANY, LLC FLOWERS SWD 3 1153' FNL & 858' FWL SEC. 21, T. 26 S., R. 31 E., EDDY COUNTY, NM

I. Goal is to drill a 17,871' deep commercial saltwater disposal well on BLM. Disposal interval will be 16,927' – 17,871' in the SWD; Devonian (96101). See Exhibit A for C-102 and map.

- II. Operator: Longwood Water Management Company, LLC [OGRID 328484] Operator phone number: (972) 371-5420 Operator address: 5400 LBJ Freeway, Suite 1500, Dallas TX 75240 Contact for Application: Brian Wood (Permits West, Inc.) Phone: (505) 466-8120
- III. A. (1) Lease (BLM): NMNM-138866 Lease Size: 640 acres
   Lease Area: all Sec. 21, T. 26 S., R 31 E.
   Well name and number: Flowers SWD 3
   Location: 1153' FNL & 858' FWL Section 21, T. 26 S., R. 31 E.
  - A. (2) Surface casing (20", 94 & 106.5#, J-55, BTC) will be set at 1,539' in a 26" hole and cemented to GL with 2,150 sacks (based on 50% OH excess).

First intermediate casing (13.375", 72#, N-80, BTC) will be set at 4,032' in a 17.5" hole and cemented to GL with 2,430 sacks (based on 50% OH excess).

Second intermediate casing (9.625", 40#, P-110 EC, BTC) will be set at 11,850' in a 12.25" hole and cemented to 3,832' with 1,860 sacks (based on 35% OH excess). An optional DV tool may be set at  $\approx$ 4282'.

Third intermediate casing (7.625", 33.7#, P-110HP, USS Liberty FJM) will be set from 11,350' to 16,927' in an 8.75" hole and cemented to 11,350' (CBL) with 530 sacks (based on 10% OH excess).

A 6.5" open hole will be drilled from 16,927' to 17,871'.



# LONGWOOD WATER MANAGEMENT COMPANY, LLC FLOWERS SWD 3 1153' FNL & 858' FWL SEC. 21, T. 26 S., R. 31 E., EDDY COUNTY, NM

- A. (3) Tubing will be a tapered string. 7", 26#, P-110, BTC fiberglass lined tubing will be run from GL to 11,250'. 5.5", 20#, P-110IC, IPC or fiberglass lined will be run from 11,250' to 16,827'. Setting depth will be ≥16,827'. (Disposal interval will be 16,927' to 17,871'.)
- A. (4) A stainless steel and/or nickel packer will be set at  $\geq$ 16,827' (top of the open hole which will be at 16,927').
- B. (1) Disposal zone will be the Devonian (SWD; Devonian (96101) pool). Estimated fracture gradient is ≈0.62 to ≈0.68 psi per foot. Variation depends on whether limestone or dolomite.
- B. (2) Disposal interval will be open hole from 16,927' to 17,871'.
- B. (3) Well has not been drilled. It will be drilled as a saltwater disposal well.
- B. (4) No perforated intervals are in the well.
- B. (5) Only zones producing, now or in the past, in the area of review and above the Devonian (16,917') are the Delaware (3,982'), Bone Spring (7,912'), Wolfcamp (11,170'), and Penn (13,500'). No oil or gas zone is below the Devonian in the area of review.

IV. This is not an expansion of an existing injection project. It is disposal only.

V. Exhibit B shows and tabulates the 3 existing wells (1 gas + 2 P&A) within a 1-mile radius along with the closest existing well outside of that radius (P&A). Deepest well within a mile is 13,500' TVD. Closest partially approved (APD) SWD; Devonian well (30-025-44569) is 3.75 miles north in H-32-25s-31e. Closest fully approved (AAPD & C-108) SWD; Devonian well (30-025-45223) is 4.01 miles northwest in P-2-26s-30e. (Longwood has applied for a SWD; Devonian well (Jack Hammack Fed SWD 1) 1.81 miles east-northeast in P-15-26s-31e. Approvals are pending). Closest Devonian oil or gas well is >2 miles away. Exhibit C shows all wells within 2-miles.

All leases within a one-mile radius are BLM or NMSLO. Exhibit D shows and tabulates all the leases within a mile. Exhibit E shows all lessors within a two-mile radius. Two-mile radius leases are BLM, fee, or NMSLO.



# PAGE 2

# LONGWOOD WATER MANAGEMENT COMPANY, LLC FLOWERS SWD 3 1153' FNL & 858' FWL SEC. 21, T. 26 S., R. 31 E., EDDY COUNTY, NM

VI. No Devonian penetrator is within a mile. Deepest existing or proposed well within a mile is 13,500'. That well bottomed in the Penn.

- VII. 1. Average injection rate will be ≈50,000 bwpd.
  - Maximum injection rate will be 60,000 bwpd.
  - 2. System will be open and closed. Water will both be trucked and piped.
  - Average injection pressure will be ≈2,500 psi Maximum injection pressure will be 3,385 psi (= 0.2 psi/foot x 16,927' (top of open hole)).
  - 4. Disposal water will be produced water, mainly from Bone Spring, Delaware, and Wolfcamp wells. There are 36 approved Bone Spring wells, 10 approved Delaware wells, and 61 approved Wolfcamp wells in T. 26 S., R. 31 E. The well will take other Permian Basin waters. A summary of produced water analyses from T. 26 S., R. 31 E. is Exhibit F. Devonian produced water analyses (in mg/L) from wells in T. 25 S., R. 31 E. are in the table below. Compatibility problems are not expected. At least 15,798,856 barrels of water have been disposed in a Devonian; SWD (30-025-43379) that is 4-1/2 miles northeast.

ΑΡΙ	section	unit	TDS (mg/L)	Chloride (mg/L)	Bicarbonate (mg/L)	Sulfate (mg/L)
3001529252	1	L	128946.5	78100	317	481
3001529728	2	I.	131449.7	79220	353	542
3001529728	2	1	85798.5	51300	59	389
3001529850	12	J	131449.7	79220	353	542
3001529252	1	L	135335.2	82003	248.9	477
3001529728	2	ł	136044.4	82374	311.1	468
3001529728	2	I	136576.4	82850	122.4	499
3001529252	1	L	133147.6	80547	341.6	468

5. No Devonian production is within >2 miles.



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PAGE 4

# LONGWOOD WATER MANAGEMENT COMPANY, LLC FLOWERS SWD 3 1153' FNL & 858' FWL SEC. 21, T. 26 S., R. 31 E., EDDY COUNTY, NM

VIII. The Devonian (estimated 964' thick) is comprised of limestone and dolomite. Closest possible underground source of drinking water above the proposed disposal interval is the Quaternary at the surface. There has been some interest in developing the brackish Dewey Lake which is below the Quaternary and above the Rustler.

According to State Engineer records (Exhibit G), 2 water wells are within 2 miles. Closest of the 2 wells is 1.84 miles northwest. Deepest of the 2 wells is 325'. Commingled flow from the wells was sampled on October 22, 2019. No underground source of drinking water is below the proposed disposal interval.

Formation tops are:

Quaternary = 0'Rustler anhydrite = 1514' Salado = 1895' Castile = 2260'Lamar = 3951' Bell Canyon = 3982' Cherry Canyon = 5094' Brushy Canyon = 6324' Bone Spring = 7912' Wolfcamp = 11170'Strawn = 13914' Atoka = 14032' Morrow = 14977' Barnett = 16117' Mississippian limestone = 16440' Woodford shale = 16781' Devonian carbonate = 16917' disposal interval = 16927' – 17871' TD = 17871' (Montoya = 17881')

Two water wells are within a 2-mile radius according to State Engineer records (Exhibit G) and were sampled on October 22, 2019. There will be >2.9 miles of vertical separation and shale, salt, and anhydrite intervals between the bottom of the only likely underground water source (Quaternary) and the top of the Devonian.

IX. The well will be stimulated with acid.

X. GR log will be run from the third intermediate to TD.



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# LONGWOOD WATER MANAGEMENT COMPANY, LLC FLOWERS SWD 3 1153' FNL & 858' FWL SEC. 21, T. 26 S., R. 31 E., EDDY COUNTY, NM

XI. Two water wells within 2 miles were found and sampled during an October 22, 2019 field inspection.

XII. Longwood Water Management Company, LLC (Exhibit H) is not aware of any geologic or engineering data that may indicate the Devonian is in hydrologic connection with any underground sources of water. There are 156 active Devonian SWD wells and 9 active Devonian water injection wells in New Mexico.

XIII. A legal ad (see Exhibit I) was published on October 31, 2019. Notice (this application) has been sent (Exhibit J) to the surface owner (BLM) and all operators, lessees, and unleased mineral interest owners within a mile who are required to receive notice.





District   1625 N French Dr., I	Hobbs: NM 882	40	State of New Mexico							FORM C-102		
Phone (575) 393-610 District II			Energy,		Revised August 1, 201							
8115 First St., Artes		18.0710		0,		epartment Submit one copy						
District III		OIL CONSERVATION DIVISION							District			
1000 Rio Brazos Roa Plione (505) 334-613						St. Francis Dr.						
District IV 1220 S. St. Francis D.						NM 87505			A!	MENDED REPORT		
Phone (505) 476-346	50 Fax (505)4		ÆLL L	OCATIO			AGE DEDICATION PLAT					
	<sup>1</sup> API Numbe			<sup>2</sup> Pool Code			<sup>3</sup> Pool Na					
30-015-				96101			SWD; Dev	onian/				
<sup>4</sup> Property (	Code				SPropert				011	ell Number		
					FLOWERS SWD 3							
<sup>7</sup> OGRID						rator Name <sup>9</sup> Elevation						
32848	4	I	ONGWC	ONGWOOD WATER MANAGEMENT COMPANY, LLC						3186'		
					<sup>10</sup> Surface	Location						
UL or lot no.	Section		Range	Lot Idn	Feet from th	e North/South line	Feet from the	nt the East/West line Con				
D	21	26-S	S 31-E – 1153' NORTH 858' WEST							EDDY		
			11	Bottom Hol	le Location If	Different From Su	rface					
UL or lot nn.	Section	Township	Range Lot Idn Feet from the North/South line Feet from the						Enst/West line County			
<sup>12</sup> Dedicated Acres	l an tabl <sup>(1)</sup>	nfil <sup>Pa</sup> Co	nsolidation Co	de <sup>15</sup> Orde	r No.		ļ					

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	SURFACE LOCATION NEW MEXICO EAST NAD 1927 X=668819 Y=375851 LAT:: N 32.0321598 LONG:: W 103.7885589 NAD 1983 X=710006 Y=375909 LAT:: N 32.0322849 LONG:: W 103.7890334	In the verify that the information and the devices is the send complete to the best of my breakdaps and halo that the dependent with the terms of working there is an an a signal the and the send of the readers interest of the sendence of an energy of such a more of se and a more of the a sendence of a sendence of a sendence the proposed bolton bas to atom an an use of such a more of se and a more of the a sendence of a sendence of a sendence in a sendence of the a sendence of the sendence of and a more of the a sendence of the sendence of and a more of the a sendence of the sendence of and a more of the a sendence of the sendence of and a better intered by the course and a better intered by the course and a better of the assendance of the analytic profile of the sendence of the assendance of the analytic of the assendance of the assendance of the better intered by the course and a sendence of the assendance of the brian @permitsweest.com E-mail Address 505 4666-8120 ISSURVEYOR CERTIFICATION is being a block of the test of a the device of the and the ploth of the first the null invalues the test of and the ploth of the profile of the device of a the and the ploth of the best of a the device of a the of the best of a the device of a the test of the best of any to be the and the sendence of spectral best of the device of a the device of spectral best of the best of a the device of spectral best of the best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of spectral best of the device of a the device of the device of the device of the device of a the device of the device
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SISURVEYMATADOR RESOURCES/FLOWERS SWD 1/FINAL PRODUCTS/LO FLOWERS SWD 1 REVI NWE INSIDATE 116 KA BALANOIDHIEF



## SORTED BY DISTANCE FROM FLOWERS SWD 3

ΑΡΙ	OPERATOR	WELL	STATUS	UNIT- SECTION- T26S-R31E	TVD	ZONE @ TD	FEET FROM FLOWERS SWD 3
3001531131	EOG	Phantom Draw Federal Unit 003	P&A	J-20	13500	Penn	3604
3001530485	EOG	Merphan 16 State 001	G	E-16	12643	Wolfcamp	4692
3001505888	Finley & Cherry	Buchly	P&A	D-28	4080	Delaware	4791
3001505862	Buckles Mosie	Federal 1-15	P&A	M-15	4155	Delaware	5413





			r	
Aliquot Parts in Area of Review (T. 26 S., R. 31 E.)	Lessor	Lease	Lessee(s) of Record	Operators (all shallower than Devonian)
W2SW4 Sec. 15	BLM	NMNM-138865	MRC Permian	N/A
W2, S2NE4, & SE4 Sec. 16	NMSLO	V0-4509-0001	EOG	EOG
E2E2, SENW, SWNE, NWSE, & NESW Sec. 17	BLM	NMNM-059060	EOG	N/A
S2SW4 & SWSE Sec. 17	BLM	unleased	NÌA	N/A
N2, N2S2, SESW, & S2SE4 Sec. 20	BLM	NMNM-0437880	EOG	N/A
all Sec. 21	BLM	NMNM-138866	MRC Permian	N/A
NWNW Sec. 22	BLM	NMNM-018626	Occidental Permian	N/A
SWNW & W2SW4 Sec. 22	BLM	NMNM-138865	MRC Permian	N/A
N2N2 Sec. 28	BLM	NMNM-138867	MRC Permian	N/A
NENE Sec. 29	BLM	NMNM-138867	MRC Permian	N/A
NWNE Sec. 29	BLM	NMNM-0437880	EOG	N/A

# FLOWERS SWD 3 AREA OF REVIEW LEASES



PRODUCED WATER SAMPLES FROM T. 26 S., R. 31 E. (in mg/l)

Sulfate	632	756	0	844	0	600	0	872	658	0	0	618	0	355	365
Chloride	131072	97161	101374	101374	118195	127230	134075	118943	122172	94055	84470	84470	57490	58782	59015
Magnesium	1922	776	110	110	1523	1557	1649	1066	904	801	781	781	484	439	444
lron	210	42	22	22	111	203	636	12	112	29	30	30	32	20	15
Calcium	10438	3886	617	617	7560	7327	8744	5059	4407	6731	6281	6281	3679	3403	3424
Sodium	76002	57137	71576	71576	68948	06002	77011	68797	72261	48496	4459	44459	31353	30032	30225
TDS	223019	162560	179789	179938	199639	209352	225190	196577	203079	152439	138162	138376	94966	94518	94864
Formation	AVALON UPPER	BONE SPRING 2ND SAND	BONE SPRING 2ND SAND	BONE SPRING 2ND SAND	BONE SPRING 3RD SAND	BONE SPRING 3RD SAND	BONE SPRING 3RD SAND								
П	Σ	z	0	0	В	В	z	z	z	z	Р	Р	z	z	z
Section	2	2	2	2	10	10	11	11	11	10	10	10	2	2	2
API	3001539036	3001539104	3001539162	3001539162	3001537899	3001537899	3001538193	3001538193	3001538193	3001539866	3001540994	3001540994	3001542113	3001542113	3001542113

Received by OCD: 2/4/2020 11:24:13 AM

EXHIBIT F

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API	Section	UL	Formation	TDS	Sodium	Calcium	Iron	Magnesium	Chloride	Sulfate
30015/07112	ſ	2	BONE SPRING	000000	1070C	5 F F F C	ر ۲	ŗ		
CTTZLCTON	7	Z	<b>3RD SAND</b>	21203	17/07	044T	OT	43/	/ כעסכ	328
3001505886	26	0	DELAWARE	212112					132100	425
3001542688	2	Р	WOLFCAMP	81366	26319	2687	26	327	50281	400

EXHIBIT F

	W	ate									the State <b>ge De</b>			ter	
A CLW##### in the POD suffix indicates the POD has been replaced 2 no longer serves a vater right file.)	(R=POD replaced, O=orpha C=the file closed)	ned, e is	1						√ 2=NF. est to lar	3=SW 4=SI gest) (N	E) (AD83 UTM in w	eters)	(In t	eet)	
		POD Sub-		0	Q	n								11	ater
OD Number	Code		County		_	-	Sec	Tws	Rng	Х	Y	DistanceDep	othWellDep		
01777		С	ED				08	26S	31E	613245	3547409* 🍪	2965	325	300	2
02248		CUB	ED	I	2	3	08	26S	31E	612942	3547316* 🍪	3008	300	292	
02249		CUB	ED	1	2	3	08	26S	31E	612942	3547316* 🌍	3008	300	292	
											Avera	ge Depth to Wal	ier:	294 fee	t
												Minimum De	pth	292 fee	t
												Maximum De	pth:	300 fee	t
tecord Count: 3															
UTMNAD83 Radius	Search (in	<u>meters)</u>	1												
Easting (X): 6143	346		North	ing	( <b>Y</b> ):	3	35440	655			Radius: 3220				
UTM location was derived	from PLSS	- see Hel	p												
he data is furnished by the N te accuracy, completeness, rel											that the OSE/ISC n	nake no warrantie	s, expressed o	r implied, cone	emin



Hall Environmental Analysis Laboratory, Inc.

# Analytical REXHIBIT G Lab Order 1910C90

#### Date Reported: 10/31/2019

CLIENT:	Permits West		C	lient S	ample II	D: Tr	ough WM 1 Flowers S	WD 3
Project:	Longwood Flowers SWD 3			Collec	tion Dat	e: 10	/22/2019 11:50:00 AN	1
Lab ID:	1910C90-001	Matrix: A	QUEOUS	Rece	ived Dat	<b>e:</b> 10	/23/2019 3:28:00 PM	
Analyses	3	Res	ult RL	, Qual	Units	DF	Date Analyzed	Batch
EPA ME	THOD 1664B						Analys	: KMN
N-Hexar	ne Extractable Material		ND 9.26	6	mg/L	1	10/30/2019 9:47:00 AN	48413
EPA MET	THOD 300.0: ANIONS						Analys	CAS
Chloride			19 0,50	)	mg/L	1	10/23/2019 6:08:35 PM	R63920
SM25400	C MOD: TOTAL DISSOLVED SC	DLIDS					Analys	KS
	ssolved Solids		340 20.0		mg/L	1.20	10/28/2019 5:39:00 PM	48386

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- Value exceeds Maximum Contaminant Level
   Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded.
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 4

Permits West

**Client:** 

Page 26 of 36

# EXHIBIT G WO#: 1910C90 31-Oct-19

Project: Longwo	ood Flowers SWD 3					
Sample ID: MB-48413	SampType: MBLK	TestCode: EPA Method	1664B			
Client ID: PBW	Batch ID: 48413	RunNo: 64068				
Prep Date: 10/28/2019	Analysis Date: 10/30/2019	SeqNo: 2192136	Units: mg/L			
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %	%RPD	RPDLimit	Qual
V-Hexane Extractable Material	ND 10.0					
Sample ID: LCS-48413	SampType: LCS	TestCode: EPA Method	1664B			
Client ID: LCSW	Batch ID: 48413	RunNo: 64068				
Prep Date: 10/28/2019	Analysis Date: 10/30/2019	SeqNo: 2192137	Units: mg/L			
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %	%RPD	RPDLimit	Qual
V-Hexane Extractable Material	39.2 10.0 40.00	0 98.0 78	114			

#### Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 4

# **QC SUMMARY REPORT**

Permits West

Client:

**Project:** 

Analyte

Chioride

Sample ID: MB

Client ID: PBW Prep Date:

Sample ID: LCS

Qualifiers:

\* D

н

ND

POL

S

Value exceeds Maximum Contaminant Level

Holding times for preparation or analysis exceeded

% Recovery ourside of range due to dilution or matrix

Sample Diluted Due to Matrix

Practical Quanitative Limit

Not Detected at the Reporting Limit

TestCode: EPA Method 300.0: Anions SampType: Ics RunNo: 63920 Batch ID: R63920

Client ID: LCSW	Batch	1 ID: R6	3920	F	RunNo: 6	3920				
Prep Date:	Analysis D	ate: 10	/23/2019	5	SeqNo: 2	185717	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.9	90	110			

SPK value SPK Ref Val %REC LowLimit

TestCode: EPA Method 300.0: Anions

Units: mg/L

HighLimit

%RPD

RPDLimit

RunNo: 63920

SeqNo: 2185716

# Hall Environmental Analysis Laboratory, Inc.

Longwood Flowers SWD 3

Result

ND

SampType: mblk Batch ID: R63920

Analysis Date: 10/23/2019

PQL

0.50

ß Analyte detected in the associated Method Blank

- Ŀ Value above quantitation range
- 1 Analyte detected below quantitation limits
- Ρ Sample pH Not In Range
- RL Reporting Limit

Page 3 of 4

EXHIBIT G WO#: 1910C90 31-Oct-19

Quai

# **QC SUMMARY REPORT** Hall Environmental Analysis Laboratory, Inc. =

EXHIBIT G WO#: 1910C90 31-Oct-19

	ermits West ongwood Flowers	SWD 3						
Sample ID: MB-4838	SampTy	ype: MBLK	Tes	tCode: SM2540C M	OD: Total Diss	olved So	lids	
Client ID: PBW	Batch	ID: 48386	F	RunNo: 64021				
Prep Date: 10/25/20	19 Analysis Da	ate: 10/28/201	9 8	SeqNo: <b>2190105</b>	Units: mg/L			
Analyte	Result	PQL SPK v	alue SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fotal Dissolved Solids	NĎ	20.0						
Sample ID: LCS-4838	6 SampTy	ype: LCS	Tes	tCode: SM2540C M	OD: Total Diss	olved So	lids	
Client ID: LCSW	Batch	ID: 48386	F	RunNo: 64021				
Prep Date: 10/25/20	19 Analysis Da	ate: 10/28/201	9 5	GeqNo: <b>2190106</b>	Units: mg/L			
Analyte	Result	PQL SPK va	alue SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
fotal Dissolved Solids	1010	20.0 1	000 0	101 80	120			

Qualifiers:

- ٠ Value exceeds Maximum Contaminant Level
- D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- Practical Quanitative Limit PQL
- S
  - % Recovery outside of range due to dilution or matrix

- Analyte detected in the associated Method Blank В
- E Value above quantitation range
- Analyte detected below quantitation limits J
- Sample pH Not In Range р
- RL. Reporting Limit

Page 4 of 4



# Longwood Water Management Company, LLC

One Lincoln Centre • 5400 LBJ Freeway • Suite 1500 • Dallas, Texas 75240 Voice 972.371.5200 • Fax 972.371.5201 jharrington@matadorresources.com

Jake Harrington Senior Geologist

October 10, 2019

NM Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, NM 87505

> Re: Geology Statement Flowers SWD #3 Section 21, T. 26S, R. 31E Eddy County, New Mexico

To whom it may concern:

Available geologic and engineering data related to the proposed Well have been thoroughly reviewed, and no evidence for a hydrological connection between the proposed deep Devonian injection zone, located at approximately 16,917 ft., and any underground sources of drinking water has been found.

> Sincerely, Longwood Water Management Company, LLC

Jake Harrington

# Carlsbad Current Argus.



#### Affidavit of Publication Ad # 0003874372

F./ 37 VERANO LOOP

#### **SANTA FE, NM 87508**

I, a legal clerk of the Carlsbad Current Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

October 31, 2019

Legal Clerk

Subscribed and sworn before me this October 31,

2019: State of WI, County of Brown

NOTARY PUBLIC

ι 0 My commission expires

Ad # 0003874372 PO #: Longwood Water Management # of Affidavits : 1



Longwood Water Manage-ment Company, LLC is apply-ing to drill the Flowers SWD 3 as a saltwater disposal well. The well is staked at 1153' FNL & 858' FWL Sec 21, T. 26 S., R. 31 E., Eddy County, NM. This is 21 miles southeast of Loving, NM and 16 miles northeast of Orla, TX. Disposal will be in the Devonian from 16,927' to 17,871'. Maximum injec-tion pressure will be 3,385 psi. Maximum disposal rate will be 60,000 bwpd. Inter-ested parties must file ob-jections or requests for hear-ing with the NM Oil Conser-vation Division, 1220 South Saint Francis Dr., Santa Fe, NM 87505 within 15 days. Additional information can be obtained by contacting: Brian Wood, Permits West. NM 87505 within 15 days. Additional information can be obtained by contacting: Brian Wood, Permits West, Inc., 37 Verano Loop, Santa Fe, NM 87508. Phone num-ber is (505) 466-8120. October 31, 2019



PROVIDING PERMITS for LAND USERS 47 Verano Loop, Santa Fe. New Alexico 87508 (505): 466-(1120)



November 23, 2019

BLM 620 E. Greene Carlsbad NM 88220

Longwood Water Management Company, LLC is applying (see attached application) to drill the Flowers SWD 3 well as a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposed saltwater disposal well. This letter is a notice only. No action is needed unless you have questions or objections.

Well Name:Flowers SWD 3 (BLM surface & lease)TD = 17,871'Proposed Disposal Zone:Devonian (from 16,927' to 17,871')Location:1153' FNL & 858' FWL Sec. 21, T. 26 S., R. 31 E., Eddy County, NMApproximate Location:21 miles southeast of Loving, NMApplicant:Longwood Water Management Company, LLC (972) 371-5420Applicant's Address:5400 LBJ Freeway, Suite 1500, Dallas TX 75240

<u>Submittal Information</u>: Application for a saltwater disposal well will be filed with the NMOCD. If you have an objection, or wish to request a hearing, then it must be filed with the NMOCD within 15 days of receipt of this letter. NMOCD address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Phone is (505) 476-3440.

Please call me if you have any questions.

Sincerely.

#### Brian Wood







Q.



December 3, 2019, 7:41 pm Arrived at USPS Regional Destination Facility MIDLAND TX DISTRIBUTION CENTER



December 2, 2019, 8:58 pm Departed USPS Regional Facility OKLAHOMA CITY OK DISTRIBUTION CENTER

December 2, 2019, 1:43 pm Arrived at USPS Regional Facility OKLAHOMA CITY OK DISTRIBUTION CENTER

November 30, 2019, 10:26 am Forwarded MIDLAND, TX

November 29, 2019, 4:23 pm Forwarded MIDLAND, TX

November 29, 2019, 2:23 pm Arrived at Unit MIDLAND, TX 79705

November 29, 2019, 2:19 pm Available for Pickup MIDLAND, TX 79710

November 28, 2019, 6:10 am Departed USPS Regional Facility MIDLAND TX DISTRIBUTION CENTER

November 27, 2019, 8:05 pm Arrived at USPS Regional Facility MIDLAND TX DISTRIBUTION CENTER

November 25, 2019, 10:18 pm Departed USPS Facility ALBUQUERQUE, NM 87101

November 25, 2019, 10:02 pm Arrived at USPS Origin Facility ALBUQUERQUE, NM 87101

November 25, 2019, 4:18 pm Departed Post Office GLORIETA, NM 87535