Initial

Application Part I

Received 1/15/21

This application is placed in file for record. It MAY or MAY NOT have been reviewed to be determined Administratively Complete

Revised March 23, 2017

RECEIVED: 1 /1 5 /0	REVIEWER:	TYPE: SWD	APP NO:	Revised Water 23, 201
RECEIVED: 1/15/2	KEVILVYEK.	ABOVE THIS TABLE FOR OCD DIVISION U	pBL	2101559018
	- Geologia	CO OIL CONSERVATIC cal & Engineering Bui ancis Drive, Santa Fe	N DIVISION reau –	C TO NEW WY
		ATIVE APPLICATION		
THIS CHE		LL ADMINISTRATIVE APPLICATIONS EQUIRE PROCESSING AT THE DIVISION		ION RULES AND
oplicant: Longfellow				umber: <u>372210</u>
AID State			API: 30-015-	
ol: SWD; Cisco-Canyo	n		Pool Code	96186
	E AND COMPLETE INF	FORMATION REQUIRED INDICATED BELOW	TO PROCESS THE T	YPE OF APPLICATION
	Spacing Unit – Simult			SWD-2411
 [1] Commi [1] Injectic [1] Injectic V NOTIFICATION R A. Offset op B. Royalty, C. Applica D. Notifica E. Notifica F. Surface G. For all of H. No notic 	VFX PMX S EQUIRED TO: Check overriding royalty over tion requires published tion and/or concurred tion and/or concurred owner f the above, proof of the required	LC PC OLS Jre Increase – Enhance WD IPI EOR those which apply. ders wners, revenue owners ed notice ent approval by SLO ent approval by BLM f notification or publico	PPR	
administrative a understand that	pproval is accurate of	the information submit and complete to the b ken on this application rision.	est of my knowled	dge. I also
Note:	Statement must be comple	ted by an individual with mana	igerial and/or supervisor	y capacity.
			-14-21	
rian Wood			Date	
rint or Type Name			05 166 0100	
7-	11/	-	505 466-8120	
17	wood	F	hone Number	

brian@permitswest.com	
e-mail Address	

Signature

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

APPLICATION FOR AUTHORIZATION TO INJECT

	AFFLICATION FOR AUTHORIZATION TO INJECT
I.	PURPOSE: Secondary Recovery Pressure Maintenance XXX Disposal Storage Application qualifies for administrative approval? XXX Yes No
Π.	OPERATOR: LONGFELLOW ENERGY, LP
	ADDRESS:16803 NORTH DALLAS PARKWAY, ADDISON TX 75001
	CONTACT PARTY: BRIAN WOOD (PERMITS WEST, INC.) PHONE: 505 466-8120
Ш.	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?YesXXXNo 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: AID STATE COM 1
	1. Proposed average and maximum daily rate and volume of fluids to be injected; <u>30-015-24076</u>
	2. 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,
	5. 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.
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: JAN. 12, 2021
	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:

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.

INJECTION WELL DATA SHEET

ELL LOCATION: <u>1980'</u> FSL	& 660' FEL	I	13		28 E
ELL LOCATION: <u>1980 '</u> FSL FOOTA	GE LOCATION	UNIT LETTER	SECTIO	N TOWNSHIP	RANGE
WELLBORE SCH	EMATIC			LL CONSTRUCTION 1	DATA
"As Is" (not to scale			Sur	face Casing	
		in Hole Size:	17.5"	Casing Size:	13.375"
10255	17.5" hole @ TOC (400 sx)	in Hole Size: 350' = GL (circ.) Cemented with: _	400	sx. <i>or</i>	ft ³
2.375" tbg @ 10255			GL		nined:CIRC.
.375" 1			Intern	nediate Casing	
2	8.625" 24 & 28# in 11" hole @ 2650' TOC (1200 sx) = GL	(circ 100 sxHole Size:	11"	Casing Size:	8.625"
9995		Cemented with: _	1200	sx. <i>or</i>	ft ⁻
		Top of Cement: _	GL	Method Determ	nined: CIRC 100
			Produ	uction Casing	
		Hole Size:	7.875"	Casing Size:	5.5"
	packer @ 10255'	Cemented with: _	1600	SX. <i>OT</i>	ft ³
	Morrow perfs 10408' - 10553'	Top of Cement: _	6600'	Method Determ	ined: CBL
	5.5" 17# in	Total Depth:	10670'	_	
	7.875" hole @ 10670' TOC (1600 sx) = 6600' (CBL)			tion Interval	

(Perforated or Open Hole; indicate which)

Side 1

INJECTION WELL DATA SHEET OPERATOR: LONGFELLOW ENERGY, LP WELL NAME & NUMBER: AID STATE COM 1 WELL LOCATION: 1980' FSL & 660' FEL 13 17 S 28 E UNIT LETTER FOOTAGE LOCATION SECTION TOWNSHIP RANGE WELLBORE SCHEMATIC WELL CONSTRUCTION DATA "Proposed" Surface Casing (not to scale) 8700' 13.375" 54# in Hole Size: 17.5" Casing Size: 13.375" 17.5" hole @ 350' TOC (400 sx) = GL(circ.)or 0 Cemented with: 400 ft³ SX. FJ IPC tbg Top of Cement: GL Method Determined: CIRC. Intermediate Casing 2 8.625" 24 & 28# in ŝ 11" hole @ 2650' TOC (1200 sx) = GL (circ 100 sx)Hole Size: 11" Casing Size: 8.625" ft^3 Cemented with: 1200 sx. or GL Top of Cement: Method Determined: CIRC 100 SX packer @ 8700' **Production Casing** perf Cisco & Canyon 🚄 8750' - 8965' Hole Size: 7.875" 5.5" Casing Size: CIBP @ 9065' ft3 Cemented with: 1600 SX. or + 35' cmt Morrow perfs Top of Cement: 6600' Method Determined: CBL 10408' - 10553' 5.5" 17# in Total Depth: 10670' 7.875" hole @ 10670' TOC (1600 sx) = 6600' (CBL)**Injection Interval** DV tool @ 8226' PBTD 10621' TD 10670' 8750 feet to 8965'

(Perforated or Open Hole; indicate which)

Side 1

INJECTION WELL DATA SHEET

Tub	ping Size: <u>FJ 3.5</u> " J-55 9.3# Lining Material: <u>INTERNAL PLASTIC COAT</u>		
Туј	pe of Packer: ASI-X		
Pac	eker Setting Depth: _≈8700 '		
Oth	ner Type of Tubing/Casing Seal (if applicable):		
	Additional Data		
1.	Is this a new well drilled for injection?YesXXX_No		
	If no, for what purpose was the well originally drilled? MORROW GAS WELL		
2.	Name of the Injection Formation: CISCO & CANYON		
3.	Name of Field or Pool (if applicable): SWD; CISCO-CANYON (96186)		
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. YES		
	MORROW PERFORATED 10408' - 10553' & WILL ISOLATE W/ CIBP @ 9065' +	35'	СМЛ
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:		
	OVER: SAN ANDRES (2373'), GLORIETA (3760'), YESO (3837'),		
	BLINEBRY (4505'), TUBB (5262')		
	UNDER: MORROW (10400')		

I. Plan is to convert a shut-in 10,670' deep Morrow gas well to a SWD; Cisco-Canyon (96186) saltwater disposal well. Disposal will be from 8750' to 8965' in the Cisco and Canyon. Well is on NM State Land Office surface and minerals. See Exhibit A for a USGS map and C-102 forms. Well produced 30 Mcfd in 2020 before being shut-in on October 11, 2020. It produced 2 Mcfd in October.

II. Operator: Longfellow Energy, LP (OGRID 372210) Operator phone number: (972) 590-9900 Operator address: 16803 North Dallas Parkway, Addison TX 75001 Contact for Application: Brian Wood (Permits West, Inc.) Phone: (505) 466-8120

III. A. (1) Lease: NMSLO LG-3782-0000
 Lease Size: 240.00 acres
 Closest Lease Line: 660'
 Lease: SE4, NESW, & SWSW Section 13, T. 17 S., R. 28 E.

A. (2) Surface casing (13.375", 54#) is set at 350' in a 17.5" hole and cemented to GL with 400 sacks (circulated unknown amount).

Intermediate casing (8.625", 24# & 28#) is set at 2650' in an 11" hole and cemented to GL with 1200 sacks (circulated 100 sacks).

Production casing (5.5", 17#) is set at 10,670' in a 7.875" hole and cemented to 6,600' (CBL) with 1,600 sacks. A CIBP will be set @ 9065' and topped with \geq 35' of cement to isolate the deeper zones.

- A. (3) IPC tubing (flush joint 3.5", 9.3#, J-55, BT&C) will be set @ ≈8700'.
 (Disposal interval will be 8750' 8965'.)
- A. (4) A 5.5" ASI-X packer will be set @ ≈ 8700 ' (or in any event, ≤ 100 ' above the top perforation (8750').

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30-015-24076



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- B. (1) Disposal zone will be carbonates in the SWD; Cisco-Canyon (96186).
- B. (2) Disposal interval (8750' to 8965') will be perforated.
- B. (3) This existing well was drilled as a Morrow gas well in 1982.
- B. (4) Morrow is perforated from 10,408' to 10,553'
- B. (5) Next higher oil or gas zone in the area of review is the Tubb. Tubb bottom is at ≈5916', or ≈2646' above the Cisco. Morrow is the only producing oil or gas zone in the area of review below the Canyon. Highest Morrow perforation is at 10,408', or 968' below the bottom of the Canyon. No Cisco or Canyon producer is within 2-1/2 miles. Closest existing Cisco; SWD well (30-015-28759) is 5048' north in J-12-17s-28e. Closest existing SWD; Cisco-Canyon well (30-015-32216) is 6830' north in H-12-17s-28e. Closest existing Canyon; SWD well (30-015-29260) is 14,796' northeast in I-5-17s-29e.
- IV. This is not an expansion of an existing injection project. It is disposal only.

V. Exhibit B shows and tabulates 18 wells (15 producers + 3 P&A) within a half-mile (2640') radius. Three of the wells within a half-mile penetrated the Cisco and Canyon, two of which are P&A and the third is an active gas well. Exhibit C shows 555 existing wells (443 oil or gas + 104 P&A + 7 water injectors or disposers + 1 water) within a 2-mile radius.

Exhibit D maps and tabulates all well operators (regardless of depth), leases, and lessors (only NMSLO & BLM) within a half-mile radius. Exhibit E shows all leases (NMSLO, fee, & BLM) within a 2-mile radius.



PAGE 2

LONGFELLOW ENERGY, LP AID STATE COM 1 1980' FSL & 660' FEL SEC. 13, T. 17 S., R. 28 E., EDDY COUNTY, NM

30-015-24076

VI. Three (Exhibit F) of the 18 wells within a half-mile (2640') radius penetrated the Cisco and Canyon. Well construction abstracts are in Exhibit F. Diagrams of the two P&A penetrator wells are also in Exhibit F.

VII. 1. Average injection rate will be $\approx 15,000$ bwpd.

Maximum injection rate will be 20,000 bwpd.

- 2. System will be closed and open.
- 3. Average injection pressure will be ≈1500 psi. Maximum injection pressure will be 1750 psi (= 0.2 psi/ft x 8750' (highest perforation)).
- 4. Water source will be produced water from Permian Basin wells. In particular, Longfellow expects an increase of produced water from the Glorieta-Yeso. Exhibit G tabulates T. 17 S., R. 28 & 29 E. produced water analyses from New Mexico Produced Water Quality Database v.2. No compatibility problems have been reported from the closest Cisco, Canyon, or Cisco-Canyon SWD wells.

Well	Distance	Location	Disposal Zone	bwpd disposed
30-015-28759	5048'	J-12-17s-28e	Cisco	14,493,586
30-015-32216	6830'	H-12-17s-28e	Cisco-Canyon	933,450
30-015-29260	14796'	I-5-17s-29e	Canyon	13,794,687

5. Neither the Cisco nor the Canyon have been found productive of oil and gas within a mile. WAIDS analysis (Exhibit H) shows Cisco TDS at 216,236 mg/l.

VIII. The Cisco (416' thick) is comprised of limestone, dolomite, shale, and sandstone. The Canyon (462' thick) is composed of dolomite. Closest possible underground source of drinking water above the proposed disposal interval are the red beds in the top \approx 300'. Deepest water well within 2-miles is 140'. The >1.5-mile thick interval between the bottom of the red beds and the top of the Cisco include multiple confining layers of anhydrite, salt, and shale.

State Engineer records (Exhibit I) show the only water well (RA 12307 POD 1) within 2-miles is 1.05 miles northwest in A-14-17s-28e. It was sampled (Exhibit



LONGFELLOW ENERGY, LP AID STATE COM 1 1980' FSL & 660' FEL SEC. 13, T. 17 S., R. 28 E., EDDY COUNTY, NM

I) October 9, 2020. AID State Com 1 is 14 miles north of the Capitan and 16 miles west of the Ogallala.

No underground source of drinking water is below the proposed disposal interval. Produced water is currently being injected in 30 wells (Grayburg, Queen, San Andres, Seven Rivers, and Yates) and disposed in 12 wells (Abo, Canyon, Cisco, Permo-Penn, Wolfcamp) within 17s-28e.

Formation tops are:

Ouaternary = 0'Salt = 335' Yates = 810'Seven Rivers = 1065' Queen = 1629'Grayburg = 2048'San Andres = 2373'Glorieta = 3760'Yeso = 3837'Blinebry = 4505'Tubb = 5262'Abo = 5917'Wolfcamp = 7026'Cisco = 8562'Proposed Disposal Zone = 8750' - 8965' Canyon: 8958' Proposed CIBP: 9065' + 35' of cement Strawn = 9440' Morrow = 10400'PBTD = 10621'TD = 10670'

IX. The well will be stimulated with acid to clean out scale or fill.

X. DLL/MLL, CDN, and GR logs are on file with NMOCD.



30-015-24076

LONGFELLOW ENERGY, LP AID STATE COM 1 1980' FSL & 660' FEL SEC. 13, T. 17 S., R. 28 E., EDDY COUNTY, NM

30-015-24076

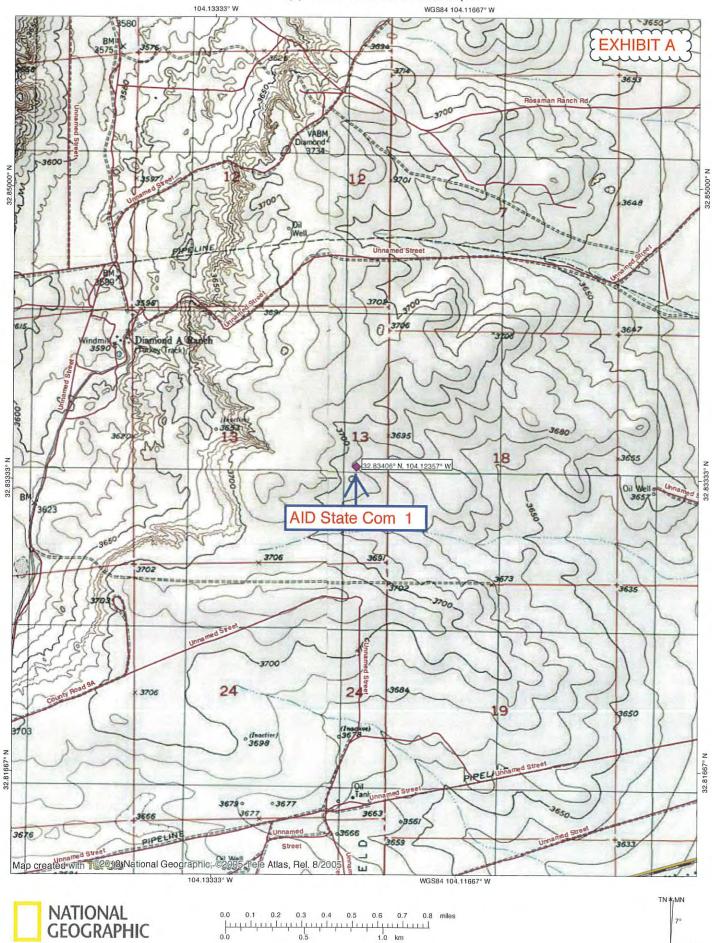
XI. No water well is within a mile. A water well 1.05 miles northwest was sampled (Exhibit I) on October 9, 2020.

XII. Longfellow Energy, LP is not aware of any geologic or engineering data (Exhibit J) that may indicate the Cisco is in hydrologic connection with any underground source of water. Twenty-one SWD; Cisco wells, twelve SWD; Canyon wells, and eleven SWD; Cisco-Canyon wells are active in New Mexico.

XIII. Legal ad (Exhibit K) was published in the Artesia newspaper on November 19, 2020. Notice (this application) is being sent (Exhibit L) to the surface owner (NMSLO), lessors, lessees of record, operating right holders, and well operators within a half-mile.



TOPO! map printed on 01/05/21 from "Untitled.tpo"



01/05/21

WELL LOCATION AND ACREAGE DEDICATION PLAT

perator	the second second second	All distances must be from	eque		
State of the second	EY E. YATES		AID STATE	Com.	Well No. 1
nit Letter	Section	Township	Range	County	
I tual Foolage Loca	13	17 SOUTH	28 EAST	EDDY	-
1980	leet from the	SOUTH line and	660	EAST	
ound Level Elev.	Producing Fo	A STATE OF	ool Und. S. Emp.	ie Mirrow	Dedicated Acreuge:
3692.0	Morrov	7	Willeat	10 101100	320 Acres
 2. If more that interest and 3. If more that dated by co X Yes If answer is this form if No allowabl 	an one lease is d royalty). n one lease of o mmunitization, No If a s "no." list the necessary.) e will be assign	different ownership is de unitization, force-pooling nswer is "yes," type of o owners and tract descrip ed to the well until all ir	dicated to the well, h dicated to the well, h . etc? onsolidation <u>C</u> tions which have actu	tify the ownership th ave the interests of <u>ommunitization</u> ually been consolida	ereof (both as to working all owners been consoli- ted. (Use reverse side of nunitization, unitization, approved by the Commis-
		K-3 I	630 nexco	toined here best of my	
	1	t	1		E. Yates Company
	LL L	1	New Mexico	Januar	y 28, 1982
THEINE THEINE THEINE THE THE THE THE	ER & LAMOCURVEYOR	LG-37 HE		560' shown on th notes of ac under my su is true and knowledge of Date Surveyed	1-22-82
		State of New	v Mexico	1 Sek	malit
				Certificate No	
00' 058 026	1320 1880 1980	2310 2640 2000	1800 1000 800	6	PATRICK A. ROMERO 6861 Ronald J. Eidean 323

District 1 1625 N French Dr., Hobbs, NM 88240 Phone (575) 393-6161 Fax (575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone (575) 748-1283 Fax: (575) 748-9720

District III 1000 Rio Brazos Road, Aztec, NM 87410

Phone: (505) 334-6178 Fax. (505) 334-6170 District IV

1220 S St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462 State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505



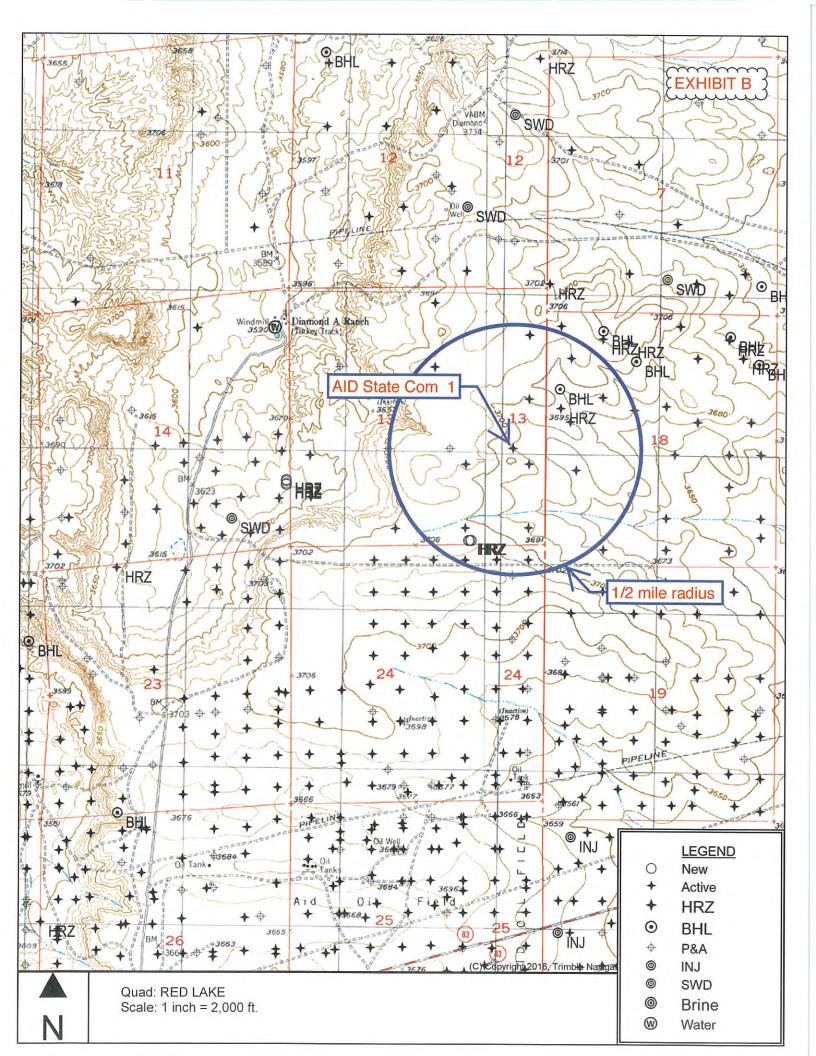
Revised August 1, 2011 Submit one copy to appropriate District Office

X AMENDED REPORT (change pool)

		V	VELL LO	CATION	AND ACRE	EAGE DEDICA	TION PLAT	,	
'API Number 30-015-24076				² Pool Code ³ Pool Name 96186 SWD; CISCO-CAN					
⁴ Property Code					⁵ Property Name AID STATE COM				l Number
⁷ OGRID 3722				LONG	* Operator Name GFELLOW ENERGY, LP 3692				
					" Surface Lo	ocation			
UL or lot no. 	Section 13	Township 17 S	Range 28 E	Lot Idn	Feet from the 1980	North/South line	Feet from the	East/West line	County EDDY
			" Bott	tom Hole	Location If I	Different From	Surface		
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
¹² Dedicated Acre	s ¹³ Joint of	r Infill ¹⁴ C	onsolidation Co	ode ¹⁵ Orde	r No.				

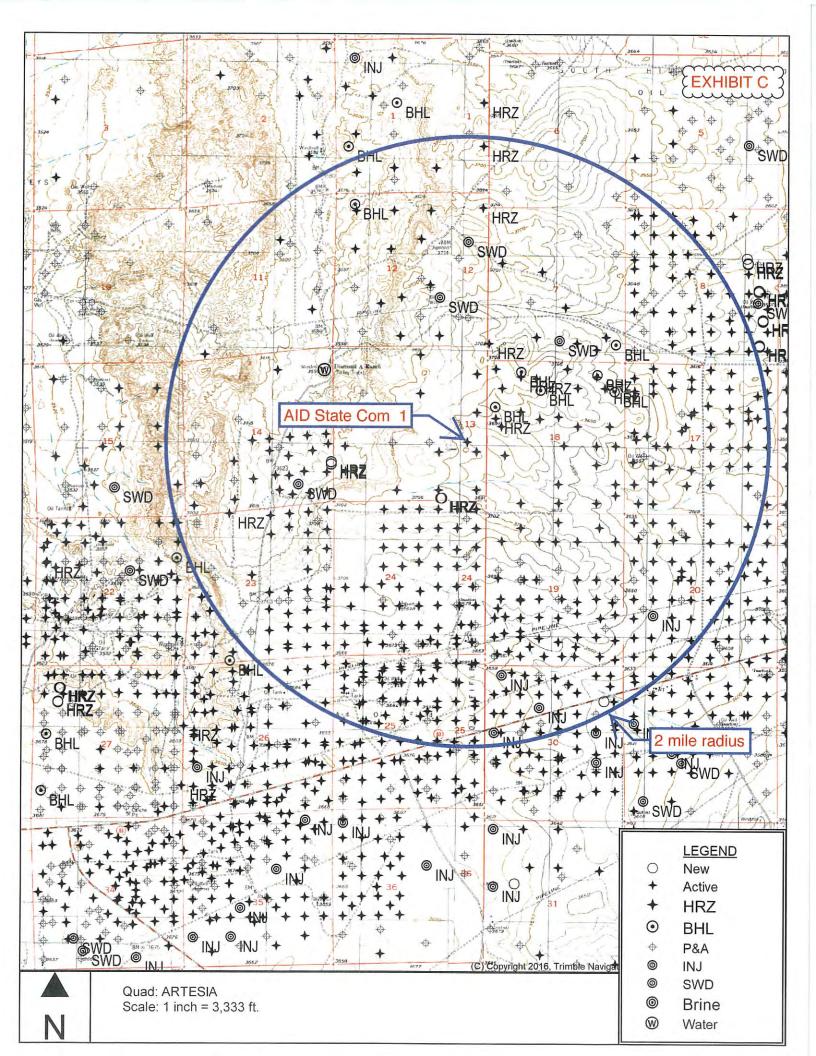
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

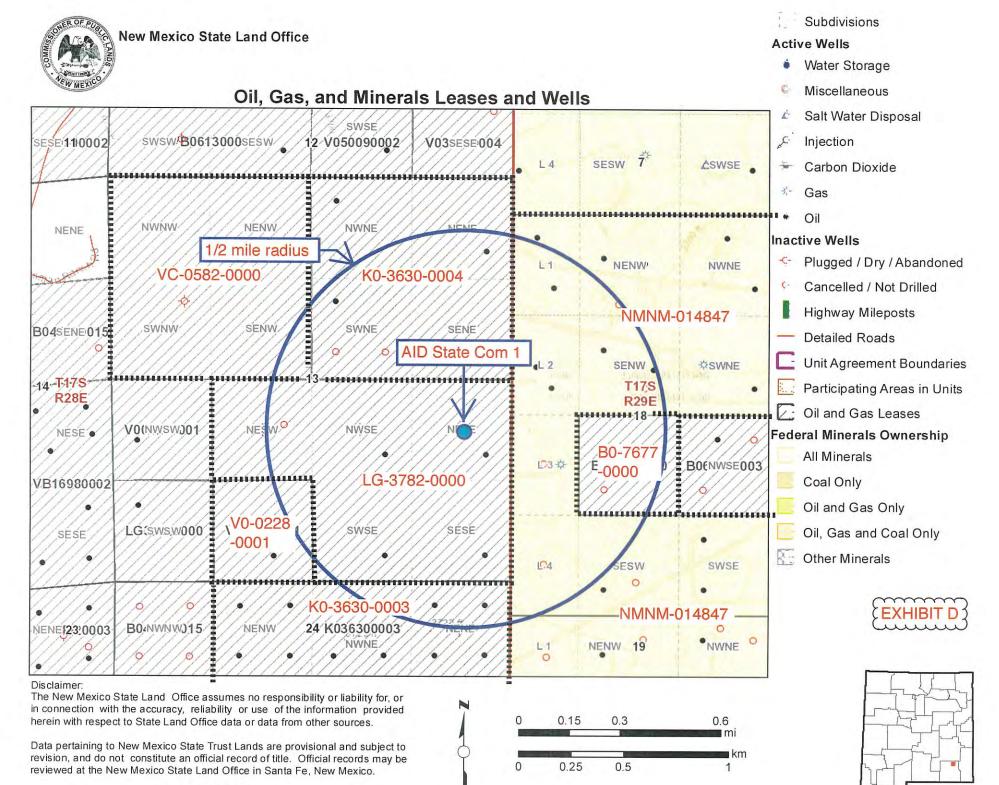
16		¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the kand including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order hereiofore energed by the difference.
		Signature Date BRIAN WOOD Printed Name brian@permitswest.com E-mail Address
	○ <660	505 466-8120 **SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 1-22-82
	1980'	Date of Survey Signature and Seal of Professional Surveyor: Original survey by John W. West #676 is on file with NMOCD. Certificate Number



SORTED BY DISTANCE FROM AID STATE COM 1

ΑΡΙ	OPERATOR	WELL	WELL STATUS	UNIT- SECTION	TVD	ZONE @ TVD	FEET FROM AID STATE
3001537790	Longfellow	Aid State 004	0	I-13	5400	Tubb	465
3001537791	Longfellow	Aid State 005	0	J-13	5363	Tubb	1053
3001537845	Longfellow	Aid State 006	0	H-13	5400	Tubb	1078
3001539055	Spur	Pere Marquette 18 Federal 009H	0	E-18	4848	Blinebry	1294
3001539059	Spur	Pere Marquette 18 Federal 012	0	E-18	5242	Tubb	1315
3001501363	Kincaid & Watson	Superior ST 001	P&A	J-13	2485	San Andres	1328
3001531399	Mewbourne	Empire 18 Federal Com 002	G	L-18	10800	Chester Barnett	1398
3001537067	Longfellow	Aid State Com 003	0	P-13	5294	Tubb	1680
3001537068	Longfellow	Aid State Com 002	0	0-13	5335	Tubb	1935
3001538998	Spur	Pere Marquette 18 Federal 010	0	F-18	5282	Tubb	2157
3001539023	Spur	Pere Marquette 18 Federal 008	о	D-18	5250	Tubb	2230
3001536483	Spur	Kool Aid State 006	0	A-24	5410	Tubb	2331
3001537545	Spur	Kool Aid State 020	0	A-24	5410	Tubb	2337
3001538462	Longfellow	Aid State 010	ο	G-13	5325	Tubb	2360
3001538142	Longfellow	Aid State 008	0	A-13	5380	Tubb	2369
3001536485	Spur	Kool Aid State 008	0	B-24	5395	Tubb	2524
3001525192	EOG	Woodchuck ABW State Com 001	P&A	K-13	10760	Chester Barnett	2594
3001520361	Pennzoil	Aid State Com 001	P&A	A-24	10796	Barnett	2640
3001539056	Spur	Pere Marquette 18 Federal 011	о	F-18	4722	Blinebry	2667



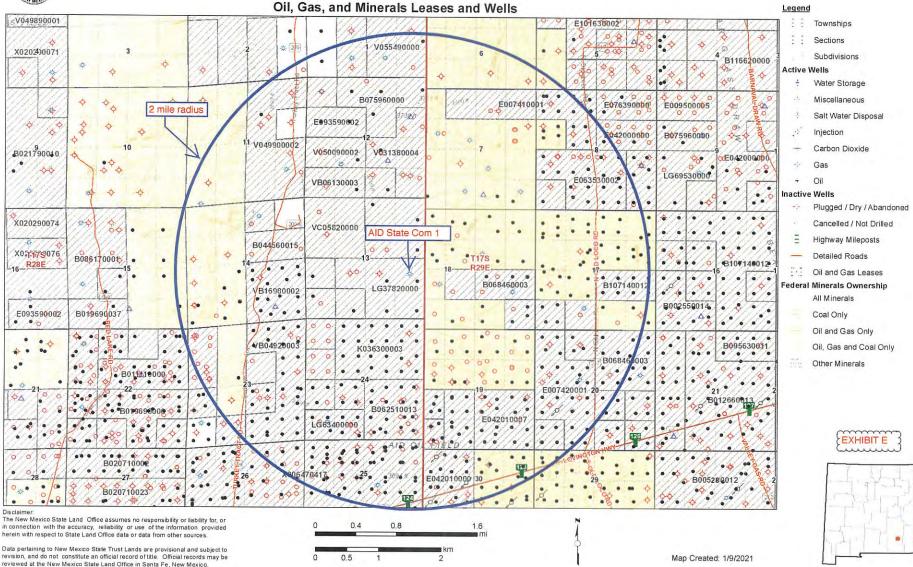


Croated: 1/0/2021

Aliquot Parts in Area of Review (T. 17 S., R. 28 E.)	Lessor	Lease	Lessee of Record	Well Operator (none Cisco o Canyon)	
NE4 Sec. 13	NMSLO	K0-3630-0004	Longfellow	Longfellow	
SENW Sec. 13	NMSLO	VC-0582-0000	St. Devote	Longfellow	
SE4 & NESW Sec. 13	NMSLO	LG-3782-0000	MRC Delaware	Longfellow	
SESW Sec. 13	NMSLO	V0-0228-0001	EOG	EOG	
N2NE4 Sec. 24	NMSLO	K0-3630-0003	Fasken	Spur	
Aliquot Parts in Area of Review (T. 17 S., R. 29 E.)	Lessor	Lease	Lessee of Record	Well Operators (none Cisco or Canyon)	
Lots 1-4, E2NW4, & SESW Sec. 18	BLM	NMNM-014847	ConocoPhillips	ConocoPhillips, Longfellow, & Spur	
NESW Sec. 18	NMSLO	B0-7677-0000	ConocoPhillips	Longfellow & Mewbourne	
Lot 1 Sec. 19	BLM	NMNM-014847	ConocoPhillips	none	

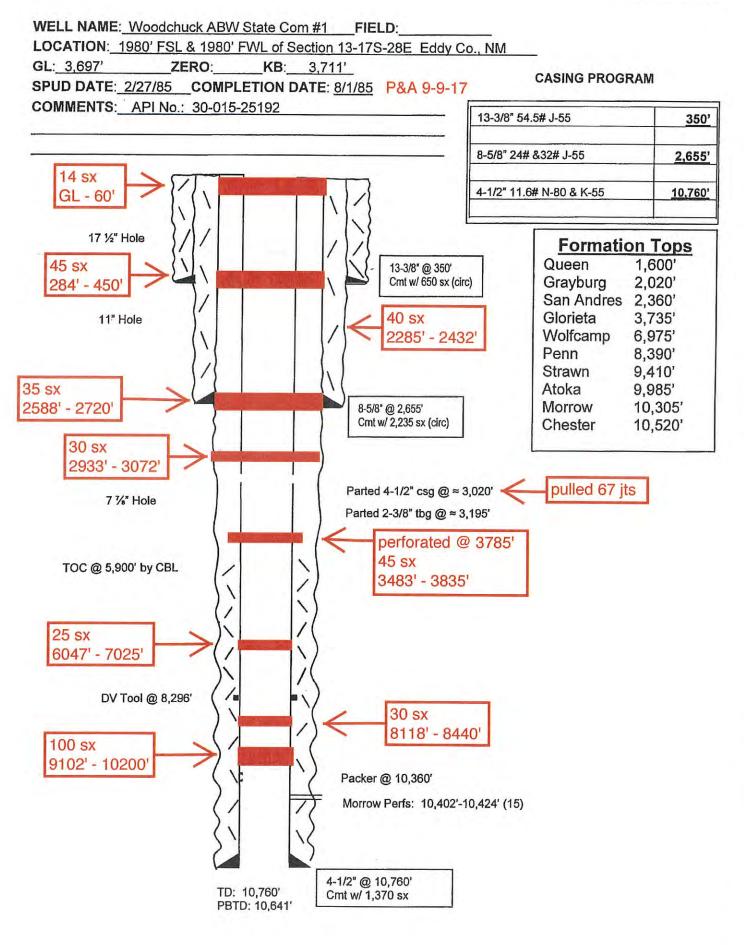
AID STATE COM 1 AREA OF REVIEW LEASES





WELL	SPUD	TVD	FORMATION @ TVD	STATUS	HOLE O.D.	CASING O.D.	SET @	CEMENT	тос	HOW TOC DETERMINED
Empire 18 Federal Com 002	12/11/00	10800	Barnett	G	17.5	13.375	408	360	Surface	Circ 50 sx
30-015-31399					12.25	8.625	2630	1150	Surface	Circ 125 sx
L-18-17S-29E					7.875	5.5	10800	1760	230	no report
Woodchuck ABW State Com 001	2/27/85	10760	Barnett/Chester	P&A	17.5	13.375	350	650 sx	Surface	Circ to Surface
30-015-25192					11	8.625	2655	2235 sx	Surface	Circ 21 sx
K-13-17S-28E					7.875	4.5	10760	1370 sx	5900	CBL
AID State Com 001	12/18/70	10796	Barnett	P&A	17.5	13.375	420	450 sx	Surface	Circ to Surface
30-015-20361					11.75	8.625	1982	250 sx	Surface	Circ to Surface
A-24-17S-28E					7.875	5.5	10796	1000 sx	5430	Temp Survey

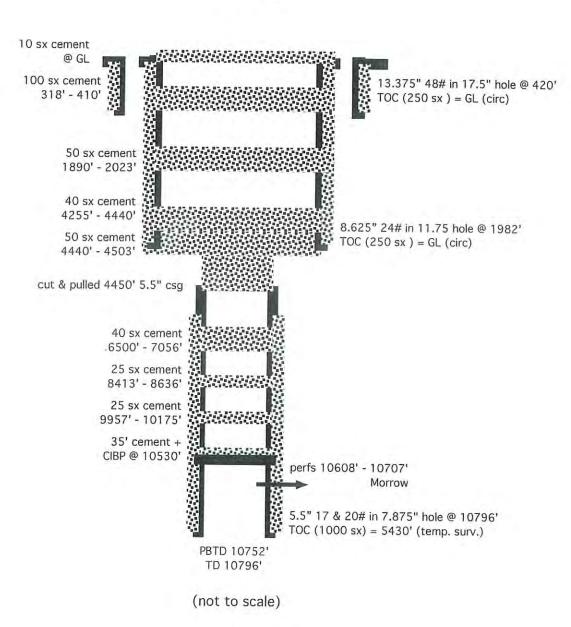




-

HIRIT

AID State Com 1 30-015-20361 A-24-17s-28e spud: 12-18-70 P&A: 1-22-86





PRODUCED WATER ANAYLSES (in mg/l) T. 17 S., R. 28 and 29 E.

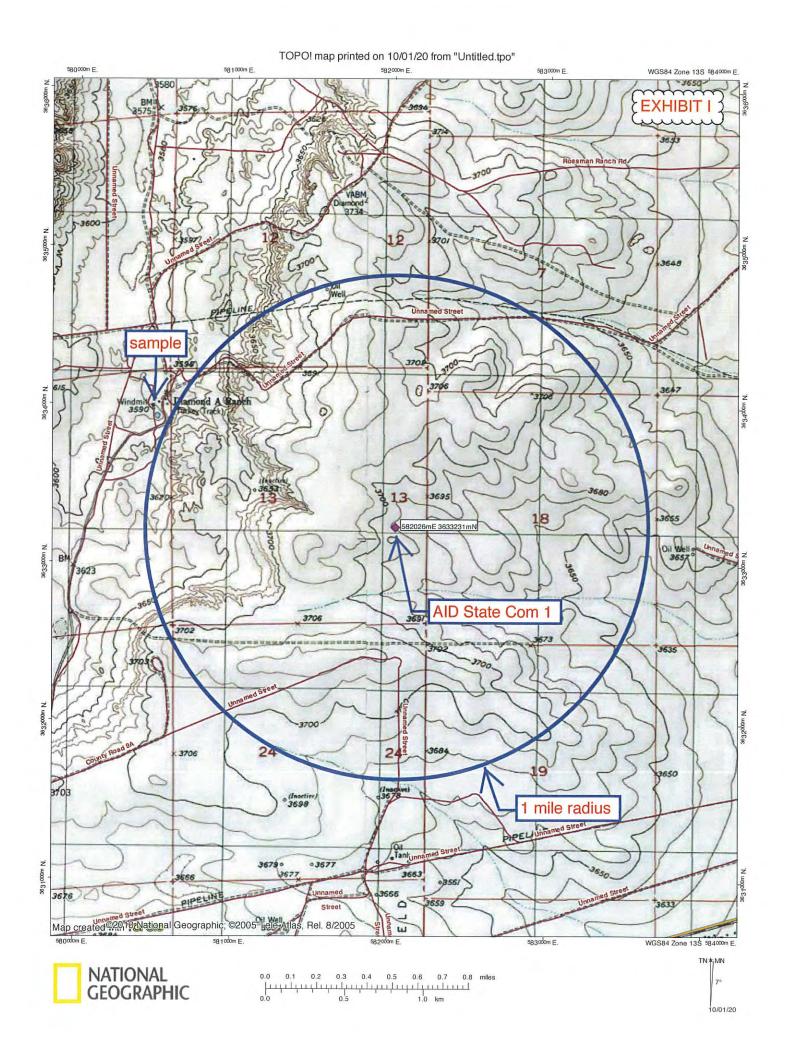
API	Section	Township	Range	Formation	TDS	Chloride	Bicarbonate	Sulfate
3001501583	27	175	28E	Abo	224062	135900	378	699
3001501673	32	17S	28E	Abo	34958	19380	2217	1980
3001503083	25	17S	29E	Abo	59305	28980	1677	6934
3001503083	25	17S	29E	Abo	65091	38030	995	2069
3001503183	29	17S	29E	Abo	29400	13700	2520	2800
3001501595	28	17S	28E	Artesia	237482	147300	46	1044
3001501595	28	17S	28E	Artesia	230189	143300	35	925
3001501595	28	17S	28E	Artesia	217219	133800	137	1030
3001501595	28	17S	28E	Artesia	241926	149300	35	1162
3001501595	28	17S	28E	Artesia	30400	12800	2320	4500
3001501595	28	17S	28E	Artesia	222174	137000	109	922
3001501652	31	17S	28E	Artesia	187566	109300	575	4910
3001530889	32	17S	28E	Artesia	163842	111692	836	44
3001530889	32	17S	28E	Artesia	97568	61161	245	2111
3001530299	33	17S	28E	Artesia	194617	129205	674	4405
3001502886	4	17S	29E	Artesia	38560	21670	668	2157
3001502891	4	17S	29E	Artesia	227185	140700	47	900
3001502912	7	17S	29E	Artesia	267895	166300	47	625
3001502996	16	17S	29E	Artesia	102782	57400	450	5600
3001502996	16	17S	29E	Artesia	120438	71800	989	653
3001502996	16	17S	29E	Artesia	1751	799	200	210
3001502996	16	17S	29E	Artesia	138560	75600	1200	9000
3001503019	21	17S	29E	Artesia	237424			
3001503019	21	17S	29E	Artesia	68550	39100	850	2500
3001503019	21	17S	29E	Artesia	69875	41200	485	1800
3001503019	21	17S	29E	Artesia	132353	78840	332	2628
3001503019	21	175	29E	Artesia	37260	17200	1610	4800
3001503042	22	17S	29E	Artesia	178711	104425	402	4600
3001503034	22	17S	29E	Artesia	56179	31824	716	2350
3001503042	22	175	29E	Artesia	146796	88400	69	2030
3001503170	28	17S	29E	Artesia	195904	129855	587	4825
3001531125	28	17S	29E	Artesia	240561	176450	91	1054
3001531125	28	17S	29E	Artesia	174045	120583	433	2087
3001503172	28	17S	29E	Artesia	29210	12500	2370	3950
3001503172	28	175	29E	Artesia	29961	13360	1387	4284
3001503196	33	17S	29E	Artesia	277375	172900	194	1384
3001530334	33	17S	28E	Glorieta/Yeso	206471	137940	504	4742
3001502866	2	175	29E	Grayburg/San Andres	1406	780	10	550
3001502873	3	17S	29E	Grayburg/San Andres	109000	63070	339	3538

PRODUCED WATER ANAYLSES (in mg/l) T. 17 S., R. 28 and 29 E.

API	Section	Township	Range	Formation	TDS	Chloride	Bicarbonate	Sulfate
3001521279	31	17S	29E	Morrow	35148	19800	1510	450
3001521279	31	17S	29E	Morrow	33627	19300	900	540
3001502933	9	175	29E	Permo-Penn	310744	192950	179	1259
3001537329	5	17S	28E	Wolfcamp	92636	54800	207	0
3001537429	5	17S	28E	Wolfcamp	84981	50400	171	0
3001538084	5	17S	28E	Wolfcamp	84923	49800	635	0
3001537429	5	17S	28E	Wolfcamp	91974	55168	439	0
3001538084	5	17S	28E	Wolfcamp	93671	54565	427	0
3001538084	5	17S	28E	Wolfcamp	67849	39804	98	2172
3001530915	19	17S	29E	Yeso	192637	130436	822	2724
3001530916	19	17S	29E	Yeso	212361	142111	945	4613
3001530944	19	17S	29E	Yeso	215197	144157	409	4785
3001530917	19	17S	29E	Yeso	213384	142829	448	4903
3001530307	29	17S	29E	Yeso	208172	140286	612	3456
3001530451	29	17S	29E	Yeso	182240	121966	933	3445
3001530307	29	17S	29E	Yeso	200501	133638	822	4560
3001530931	29	17S	29E	Yeso	207695	138951	495	4750
3001530305	29	17S	29E	Yeso	207078	137913	660	5163
3001530694	29	17S	29E	Yeso	194357	152244	1112	5958
3001530575	30	17S	29E	Yeso	9557	3819	806	1616
3001530575	30	17S	29E	Yeso	8483	3308	448	1711

ANALYSES IN MG/L

API	Section	Township	Range	Formation	TDS	Calcium	Magnesium	Chloride	Bicarbonate	Sulfate
3001526468	14	205	24E	CISCO	216236	4576	463	53321	72619	952



	W	/ate					00			e Engine pth tc	~	er	ITI
(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD replaced. O=orpha C=the fil closed)	, ned,	1				V 2=NE : est to lar	3=SW 4=SE gest) (N	:) AD83 UTM in n	neters)	(In feet)		
		POD Sub-		QQ	2								
POD Number	Code	-	County			Tws	Rng	х	Y	DistanceDep	thWellDepthV		ater lumn
RA 12307 POD1		RA	ED		2 14	175	28E	580495	3633981 🌍	1705	140	58	82
									Avera	ge Depth to Wate	er;	58 feet	t
										Minimum Dep	oth:	58 feet	t
										Maximum Dep	oth:	58 feet	Ċ.
Record Count: 1													
UTMNAD83 Radius	Search (in	meters)	6										
Easting (X): 582	026		North	ning (Y):	3633	3231			Radius: 3220				

10/1/20 1:42 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

XHIB Analytical Re

Lab Order 2010548

Date Reported: 10/26/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Permits West		C	lient Sa	ample I	D: RA	12307	
Project:	AID State Com 1			Collect	ion Dat	te: 10/	9/2020 10:35:00 AM	
Lab ID:	2010548-001	Matrix: AQUEOUS		Recei	ved Dat	te: 10/	/9/2020 4:13:00 PM	
Analyses		Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA MET	THOD 1664B						Analys	t: KMN
N-Hexan	e Extractable Material	ND	9.42		mg/L	1	10/14/2020 11:31:00 A	M 55792
EPA MET	HOD 300.0: ANIONS						Analys	t: JMT
Chloride		960	50	*	mg/L	100	10/22/2020 5:48:58 PM	R72867
SM2540C	MOD: TOTAL DISSOLVED SOLIE	S					Analys	t: MH
Total Dis	solved Solids	3520	20.0	*	mg/L	1	10/15/2020 3:10:00 PM	55818

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

Qualifiers:

18

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Value above quantitation range E

J Analyte detected below quantitation limits

р Sample pH Not In Range

RL Reporting Limit

Page 1 of 4

EXHIBIT I 2 WO#: 2010548 26-Oct-20

	s West tate Com 1		
Sample ID: MB-55792 Client ID: PBW Prep Date: 10/13/2020 Analyte	SampType: MBLK Batch ID: 55792 Analysis Date: 10/14/2020 Result PQL SPK value SP	TestCode: EPA Method 1664B RunNo: 72635 SeqNo: 2550799 Units: mg/L K Ref Val %REC LowLimit HighLimit %	RPD RPDLimit Qual
N-Hexane Extractable Material	ND 10.0		
Sample ID: LCS-55792 Client ID: LCSW Prep Date: 10/13/2020	SampType: LCS Batch ID: 55792 Analysis Date: 10/14/2020	TestCode: EPA Method 1664B RunNo: 72635 SeqNo: 2550800 Units: mg/L	
Analyte N-Hexane Extractable Material	Result PQL SPK value SP 38.4 10.0 40.00		RPD RPDLimit Qual

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

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

EXHIBIT I) wo#: 2010548

26-Oct-20

Client: Project:	Permits West AID State Com 1
Sample ID: MB	SampType: mblk TestCode: EPA Method 300.0: Anions
Client ID: PBW	Batch ID: R72867 RunNo: 72867
Prep Date:	Analysis Date: 10/22/2020 SeqNo: 2561188 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND 0.50
Sample ID: LCS	SampType: Ics TestCode: EPA Method 300.0: Anions
Client ID: LCSW	Batch ID: R72867 RunNo: 72867
Prep Date:	Analysis Date: 10/22/2020 SeqNo: 2561189 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	4.6 0.50 5.000 0 92.3 90 110

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

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

2010548 26-Oct-20

(HIBIT

WO#:

5.000 M 100	nits West State Com 1
Sample ID: MB-55818	SampType: MBLK TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: PBW	Batch ID: 55818 RunNo: 72677
Prep Date: 10/14/2020	Analysis Date: 10/15/2020 SeqNo: 2552764 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Fotal Dissolved Solids	ND 20.0
Sample ID: LCS-55818	SampType: LCS TestCode: SM2540C MOD: Total Dissolved Solids
Client ID: LCSW	Batch ID: 55818 RunNo: 72677
Prep Date: 10/14/2020	Analysis Date: 10/15/2020 SeqNo: 2552765 Units: mg/L
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
fotal Dissolved Solids	999 20.0 1000 0 99.9 80 120

Qualifiers:

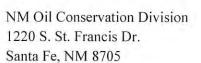
- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix D
- H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank.
- Е Value above quantitation range
- J Analyte detected below quantitation limits P Sample pH Not In Range

Page 4 of 4

RL Reporting Limit





Re: Geology Statement Longfellow Energy LP AID State Com No. 1 Section 13, T. 17S, R. 28E Eddy County, New Mexico

To whom it may concern:

Publicly available geologic and engineering data related to the proposed well have been thoroughly reviewed, and no evidence for open faults or any other hydrologic connection between the proposed Cisco and Canyon injection zone and any underground sources of drinking water has been found. Please see the attached geologic assessment for additional information.

Sincerely,

FXHIBIT

Cory Walk

Cory Walk, M.S. Geologist

EXHIBIT

Geologic Assessment

Longfellow Energy L.P.

AID State Com No. 1

Section 13, Township 17 South, Range 28 East

Eddy County, New Mexico

Cory Walk

Cory Walk

B.S., M.S.

Geologist

Permits West Inc.

January 11, 2021



General Information

Longfellow Energy proposes to convert the AID State Com 1 gas well to a saltwater disposal (SWD) well in the SE 1/4, section 13, T17S, R28E, about 16 miles east of Artesia, NM in the Permian Basin. The proposed injection zone is within the Cisco and Canyon formations from 8,750'-8,965' below ground surface. This report assesses any potential concerns relating to the connection between the injection zone and known underground potable water sources.

Groundwater Sources

Quaternary Alluvium acts as the principal aquifer used for potable ground water near the AID State Com 1 location (Hendrickson and Jones, 1952). Nicholson and Clebsch (1961) state, "Potable ground water is not available below the Permian and Triassic unconformity but, because this boundary is not easily defined, the top of the Rustler anhydrite formation is regarded as the effective lower limit of 'potable' ground water." Around the AID State Com 1, the Rustler Formation lies at a depth of ~360 feet bgs.

Faults and Fractures

The Geologic Map of New Mexico (2003) shows the nearest fault to the SWD location is found 17 miles to the northwest (Figure 1). A large accumulation of northwest trending Basin and Range style normal faults lie ~65 miles from the proposed water injection well. This fault zone is interpreted to be a southeastern extension of the Rio Grande Rift zone (Muehlberger et al., 1978) and is the only area in which deeply penetrating faults exist throughout the region.

A structure contour map of the Precambrian Basement shows the AID State Com 1 well is approximately 13 miles to the nearest Precambrian basement fault (Figure 1; Modified from Ruppel et al., 2009). However, Montgomery (1997) shows that these faults remain deep below the surface and do not act as conduits between the Pennsylvanian Cisco and Canyon formations and aquifers near the surface (Figure 2).

Stratigraphy

Well data indicates ~8,390 ft of rock separating the top of the injection zone within the Cisco and Canyon formation from the previously stated lower limit of potable water at the top of the Rustler anhydrite formation. Within the separating ~8,390 feet of strata include several horizons of impermeable formations including the Rustler anhydrite and Salado halite formations.

Concluding Statement

After examination of publically available geologic and engineering data, there is no evidence of open faults or any other hydrologic connection between the proposed injection zone and any underground sources of drinking water.



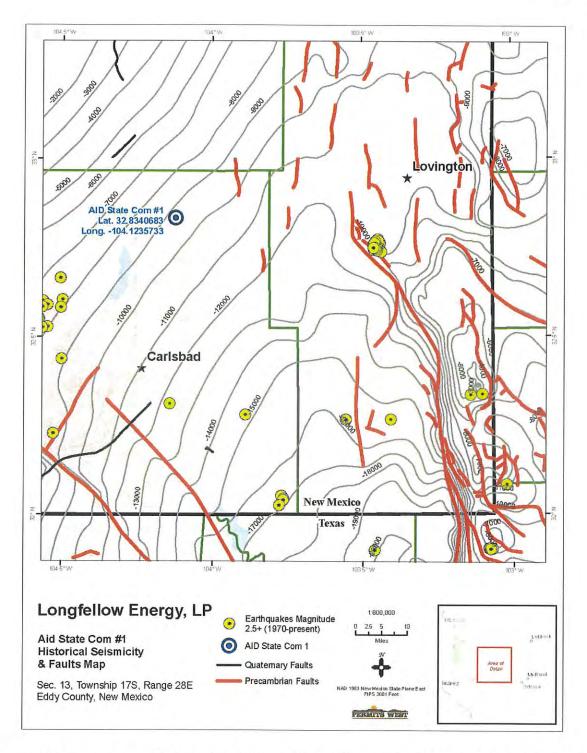


Figure 1. Structural contour map of the Precambrian Basement. Thick red lines represent the locations of deep Precambrian basement faults and black lines represent Quaternary surface faults.



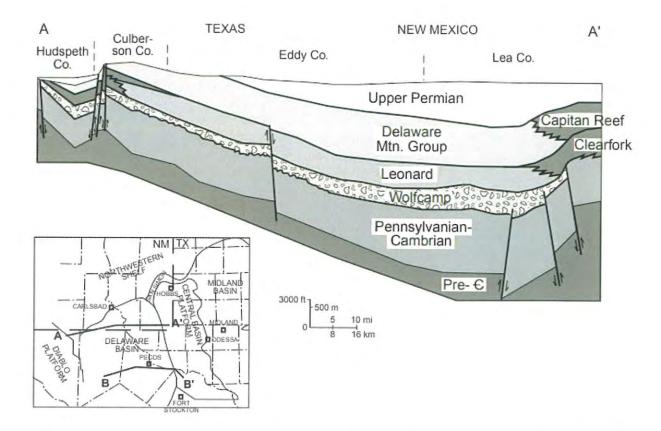


Figure 2. Cross section of the Permian Basin from Montomery (1997). Notice the basement faults within the basin do not reach the surface and therefore do not act as conduits to near surface aquifers.

References Cited

- Geologic Map of New Mexico, New Mexico Bureau of Geology and Mineral Resources, 2003, Scale 1:500,000.
- Hendrickson, G. E., and Jones, R. S., 1952, Geology and Ground-Water Resources of Eddy County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 3, 179 pp., 6 plates.
- Montgomery, S. L., 1997, Permian Bone Spring Formation: Sandstone play in the Delaware basin: Part I. Slope: AAPG Bulletin, v. 81, p. 1239–1258.
- Muehlberger, W.R., Belcher, R.C., and Goetz, L.K., 1978, Quaternary faulting in Trans-Pecos Texas: Geology, v. 6, p. 337–340.
- Nicholson, A., Jr., and Clebsch, A., Jr., 1961, Geology and ground-water conditions in southern Lea County, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Ground-Water Report 6, 123 pp., 2 plates.
- Ruppel, S.C., 2009, Integrated synthesis of the Permian basin: data and models for recovering existing and undiscovered oil resources from the largest oil-bearing basin: U.S. Oil & Natural Gas Technology, Bureau Economic Geology, The University of Texas at Austin, p. 1-959.

		No.	2560:
State of County Danny	/ /	un Sco	Publisher
being du	ly sworn sayes	that he is the	Publisher
of the A	rtesia Daily Pre	ss, a daily newspap	per of General
circulati	on, published ir	n English at Artesia	a, said county
and state	e, and that the h	ereto attached	
	Lega	al Ad	
was pub	lished in a regu	lar and entire issue	e of the said
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Notary Public, Eddy County, New Mexico

Copy of Publication: **EXHIBIT K**

Legal Notice

Longfellow Energy, LP will apply to plug back and convert the AID State Com 1 gas well to a saltwater disposal well. The well will dispose into the Cisco and Canyon formations from 8,750' to 8,965'. It is 8 miles west of Loco Hills, NM and 16 miles east of Artesia, NM at 1980' FSL & 660' FEL Sec. 13, T. 17 S., R. 28 E., Eddy County, NM. Maximum disposal rate will be 20,000 bwpd. Maximum injection pressure will be 1,750 psi. Interested parties must file objections or requests for hearing with the NM Oil Conservation Division, 1220 South Saint Francis Dr., Santa Fe, 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 number is (505) 466-8120.

Published in the Artesia Daily Press, Artesia, N.M., Nov. 19, 2020 Legal No. 25605.

1 1





January 12, 2021

NM State Land Office PO Box 1148 Santa Fe NM 87504

TYPICAL NOTICE

Longfellow Energy, LP is applying (see attached application) to plug back and convert the AID State Com 1 gas well to a saltwater disposal well. As required by NM Oil Conservation Division (NMOCD) rules, I am notifying you of the following proposal. This letter is a notice only. No action is needed unless you have questions or objections.

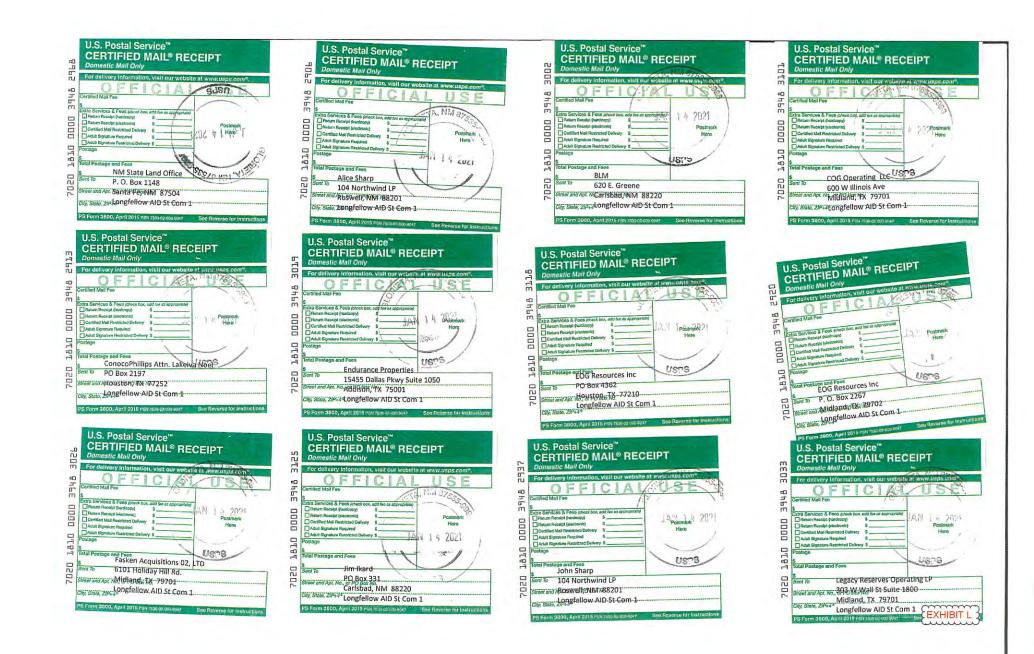
<u>Well:</u> AID State Com 1 <u>TD</u> = 10670' <u>Proposed Disposal Zones:</u> Cisco & Canyon (8750' – 8965') <u>Location:</u> 1980' FSL & 660' FEL Sec. 13, T. 17 S., R. 28 E., Eddy County, NM <u>Approximate Location:</u> 16 miles east of Artesia, NM <u>Applicant Name:</u> Longfellow Energy, LP (972) 242-8851 <u>Applicant's Address:</u> 16803 North Dallas Parkway, Addison TX 75001

<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. The New Mexico Oil Conservation Division address is 1220 South St. Francis Dr. Santa Fe, NM 87505. Their phone number is (505) 476-3440.

Please call me if you have any questions.

Sincerely.

Brian Wood





PS Form 3800, April 2016 Ptite 7630-02-000-8047

EXHIBIT L

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Sont To

Total Postage and Fees

Viersen OG Co

Longfellow AID St Com 1

S Form 3800, April 2015 Pari mon-c2 000

See Beverse fd

Street and Apt. No. of Lewis #200 Tulsa, OK 74136







City, State, 219+4 Longfellow AID St Com 1

PS Form 3800, April 2015 Htth 7838-02-000 0047



