BW – 38

PERMIT APPLICATIONS, RENEWALS, & MODS

(2 of 2)

2018

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: CAPROCK BSW Project Number: NONE GIVEN Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 16-Jul-18 09:40

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SAMPLE A	H801855-01	Water	09-Jul-18 14:45	09-Jul-18 15:30
SAMPLE B	H801855-02	Water	09-Jul-18 14:45	09-Jul-18 15:30

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Attachment J

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: CAPROCK BSW Project Number: NONE GIVEN Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 16-Jul-18 09:40

SAMPLE A

H801855-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**190**		5.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Chloride*	**36.0**		4.00	mg/L	1	8070501	AC	10-Jul-18	4500-Cl-B	
Conductivity*	**480**		1.00	uS/cm	1	8071001	AC	10-Jul-18	120.1	
pH*	**7.73**		0.100	pH Units	1	8071001	AC	10-Jul-18	150.1	
Sulfate*	**34.3**		10.0	mg/L	1	8071002	AC	10-Jul-18	375.4	
TDS*	**324**		5.00	mg/L	1	8070311	AC	11-Jul-18	160.1	
Alkalinity, Total*	**156**		4.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Calcium*	**70.9**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Magnesium*	**8.93**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Potassium*	**2.86**	0.677	10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	J
Sodium*	**15.2**		10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	

Sample A – Fresh water well at ranch house in A-33-16S-33E (0.48 miles SW of State 27 #1)

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Attachment J

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: CAPROCK BSW Project Number: NONE GIVEN Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 16-Jul-18 09:40

SAMPLE B

H801855-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**181**		5.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Chloride*	**48.0**		4.00	mg/L	1	8070501	AC	10-Jul-18	4500-Cl-B	
Conductivity*	**468**		1.00	uS/cm	1	8071001	AC	10-Jul-18	120.1	
pH*	**7.86**		0.100	pH Units	1	8071001	AC	10-Jul-18	150.1	
Sulfate*	**34.0**		10.0	mg/L	1	8071002	AC	10-Jul-18	375.4	
TDS*	**310**		5.00	mg/L	1	8070311	AC	11-Jul-18	160.1	
Alkalinity, Total*	**148**		4.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Calcium*	**47.0**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Magnesium*	**9.14**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Potassium*	**2.49**	0.677	10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	J
Sodium*	**38.4**		10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	

Sample B – Fresh water well at proposed Brine Station in L-28-16S-33E (1.08 miles W of State 27 #1)

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Attachment J

Llano Disposal, LLC
State 27 #1 and Hummingbird Brine Station Operations
Emergency Contingency and Response Plan

Location of Facilities:

Both the State '27' Brine Well #1 and the Hummingbird Brine Station are located approximately 4.4 miles northeast of Maljamar, New Mexico via US 82 then south on Hummingbird county road. See attached map.

Facility	Latitude	Longitude	UL, S, T, N
State '27' BSW #1	32.890782°	-103.657470°	L-27-16S-33E
Hummingbird Brine Station	32.890740°	-103.676520°	L-28-16S-33E

Emergency Response Agencies	Emergency	Direct Number
Maljamar Volunteer Fire Dept	911	575-676-4100
Lovington Fire and EMS	911	575-396-2359
Lea County Sheriff's Dept	911	575-396-3611
New Mexico State Police	911	575-392-5588

Llano Responder	Cell Phone	Home Phone
Marvin Burrows – Fac Mgr	575-631-8067	
Darr Angell - Owner	575-704-2777	575-396-4418

Reporting Agencies	Phone
NMOCD – Santa Fe	505-476-3440
NMOCD – Hobbs (Emergency Cell)	575-370-3186
National Response Center	800-424-8802
EPA Region 6 Emergency Response	214-665-6428
Chemtrec	800-424-9300

Materials Stored or Transferred Onsite	Location of Anticipated Leaks/Spills
Fresh and brine water (Non-hazardous)	Brine station inside secondary containment, concrete loading pad, pipelines, and at brine well
Contaminated Soil (Non-hazardous)	Sealed drums at brine station
Trash (Non-hazardous)	Trash bins at brine station

Leak/Spill Prevention Actions

Brine water storage tanks have a synthetic liner secondary containment and level controls
Concrete loading pad has curbs and an automated concrete sump
Buried brine polyethylene pipeline will be pressure tested annually to insure mechanical integrity

Containment and Clean up Actions

1) Incidental drips, leaks and spills will be picked up routinely and placed back into the system or in waste containers by the facility operator.
2) Releases of more than 5 bbls of brine water or 1 bbl of waste outside secondary containment will be handled per the Emergency Procedures/Notification listed below.

Emergency Procedures and Notification

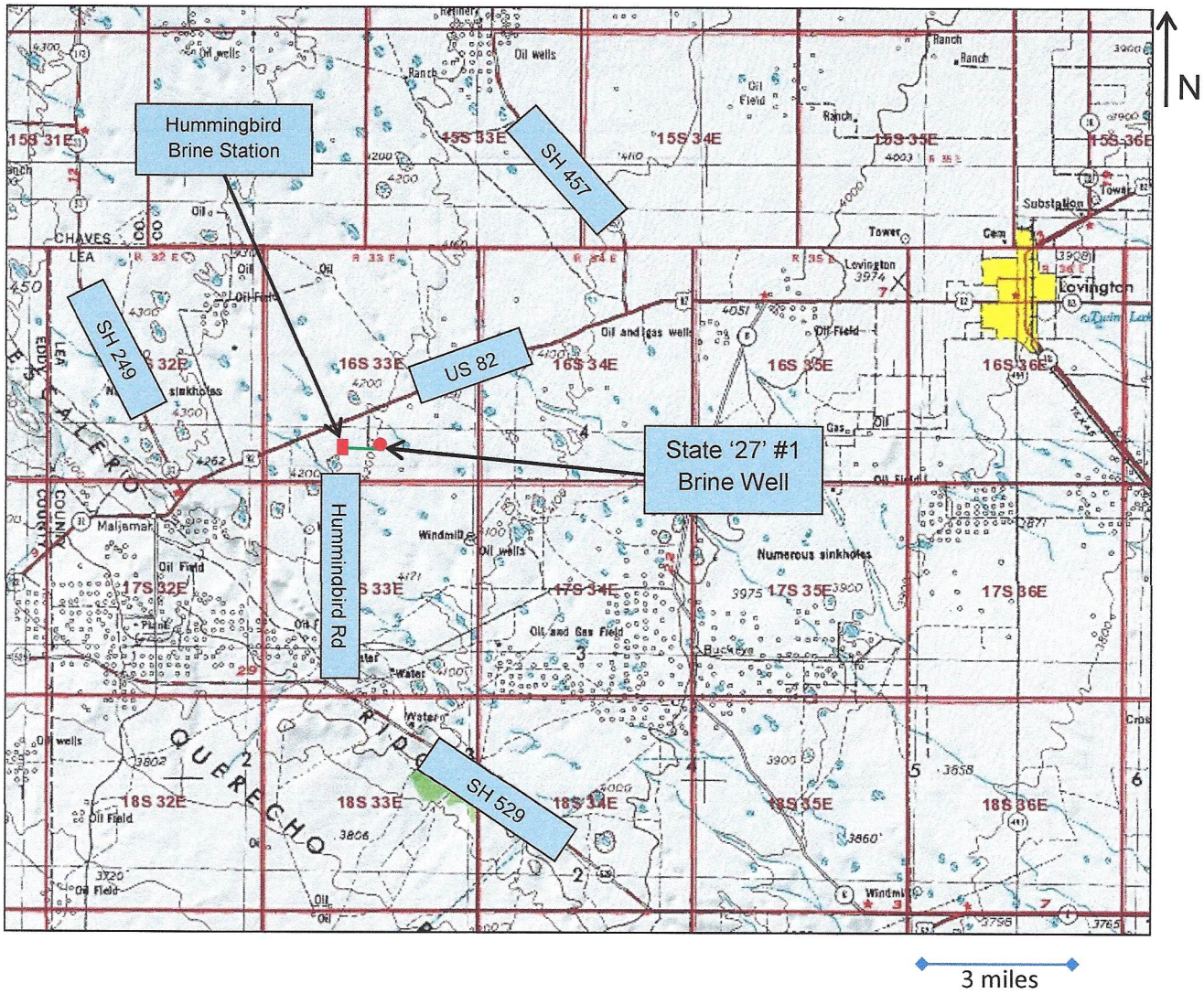
1) Assess the situation (if it is safe to do so) and notify Llano Supervisor for assistance and additional personnel, if needed. Stop the leak/spill as directed by the Llano Supervisor (if it is safe to do so).
2) Notify one of the Emergency Response Agencies noted above if there is a life threatening situation.
3) Provide assistance to Emergency Responders and/or Llano Supervisor.
4) Barricade any spill area to protect the public, if necessary and if it is safe to do so.
5) Llano Supervisor will direct all available resources to stop, contain and mitigate the emergency situation.
6) Llano Supervisor will notify NMOCD District Office by phone and form C-141 for brine spills <25 bbls.
7) Llano Supervisor will verbally notify NMOCD Director (Santa Fe) for brine spill >25 bbls.

Attachment K

Posted Date - _____

Llano Disposal, LLC
State 27 #1 and Hummingbird Brine Station Operations
Emergency Contingency and Response Plan

Emergency Response Map

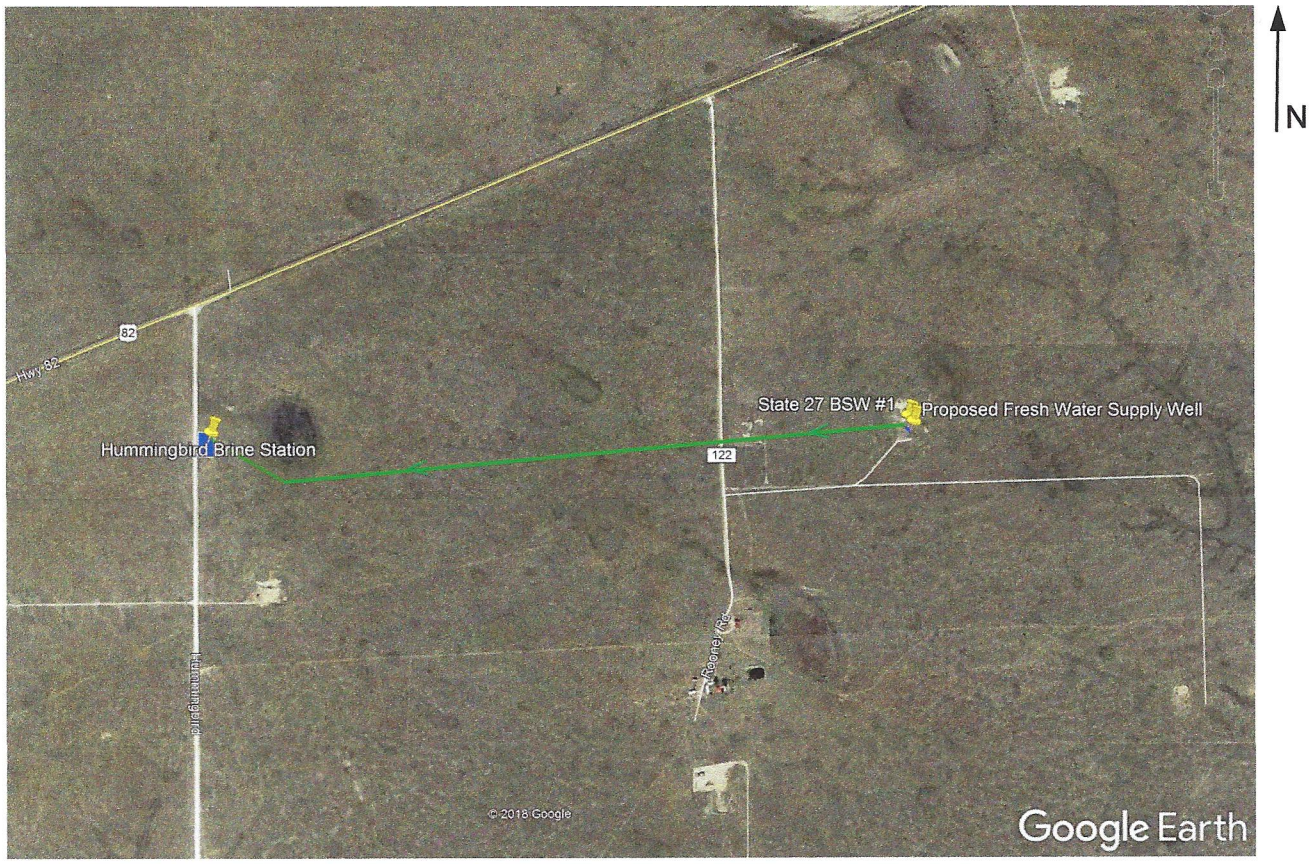


Attachment K

Posted Date - _____

Llano Disposal, LLC
Proposed State '27' BSW #1 and Hummingbird Brine Station
UL 'L', Section 27, T16S, R33E and UL 'L', Section 28, T16S, R33E
Lea County, New Mexico

Attachment L – Schematics



Sections 27 and 28, T16S, R33E
Lea County, New Mexico

Llano Disposal, LLC
Proposed State '27' BSW #1 and Hummingbird Brine Station
UL 'L', Section 27, T16S, R33E and UL 'L', Section 28, T16S, R33E
Lea County, New Mexico

Attachment L – Schematics

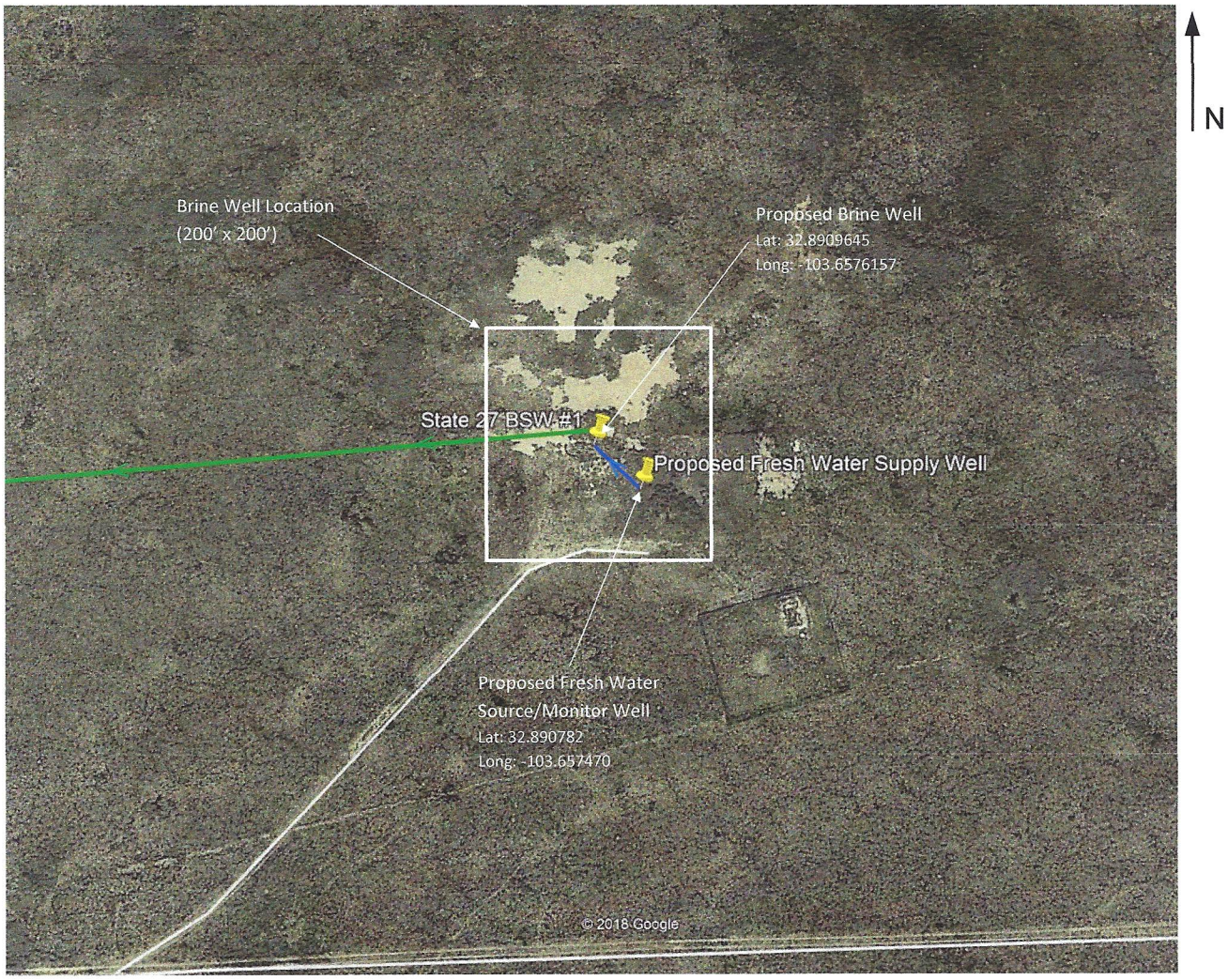
Proposed Hummingbird Brine Station

Section 28, T16S, R33E
Lea County, New Mexico

Llano Disposal, LLC
Proposed State '27' BSW #1 and Hummingbird Brine Station
UL 'L', Section 27, T16S, R33E and UL 'L', Section 28, T16S, R33E
Lea County, New Mexico

Attachment L – Schematics

Proposed State 27 BSW #1 Wellsite

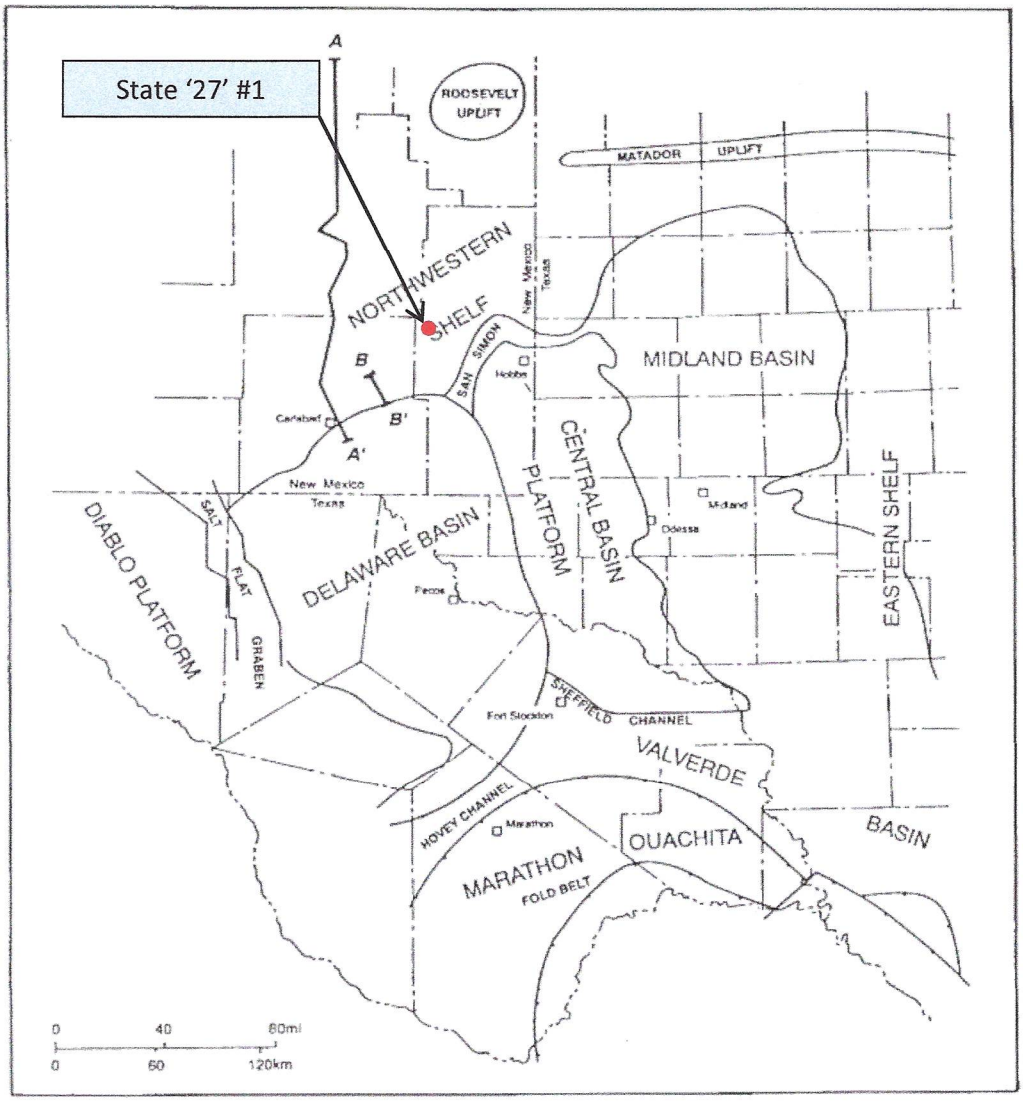


Section 27, T16S, R33E
Lea County, New Mexico

State '27' #1
API # 30-025-20592
Discharge Plan Attachments

Attachment M – Area Geology

BROADHEAD and SPEER



State '27' #1
API # 30-025-20592
Discharge Plan Attachments

Attachment M – General Stratigraphy

Stratigraphy of the Northwest Shelf of the Permian Basin

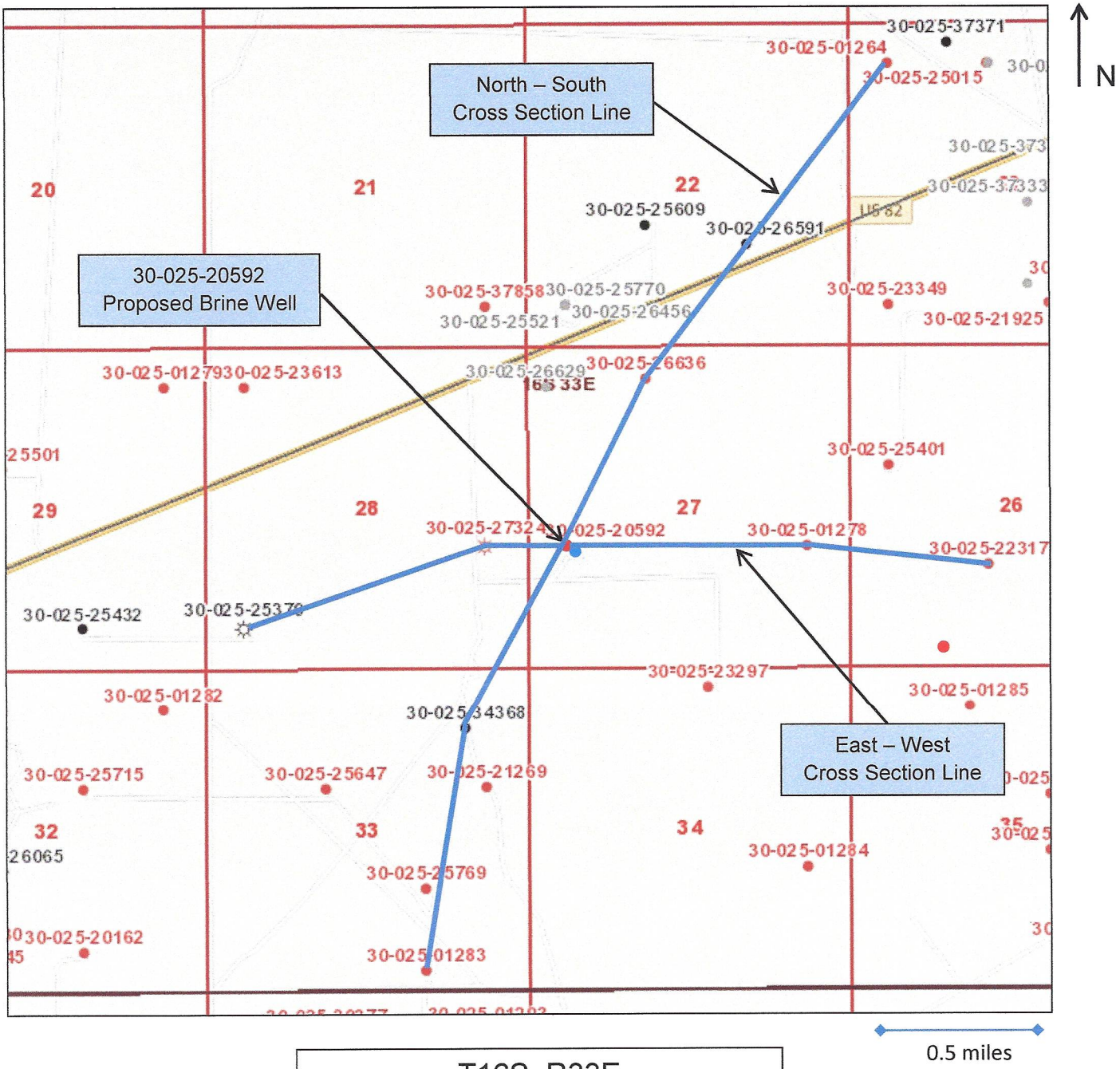
PERIOD	EPOCH	FORMATION		GENERAL LITHOLOGY	APPROXIMATE THICKNESS (ft)
Permian	Ochoan	Dewey Lake		Redbeds/Anhydrite	200-400
		Rustler		Halite	100
		Salado		Halite/Anhydrite	1000
	Guadalupian	Tansil		Anhydrite/Dolomite	200
		Yates		Anhydrite/Dolomite Anhydrite	200
		Seven Rivers		Dolomite/Anhydrite	500
		Queen		Sandy Dolomite/ Anhydrite/Sandstone	200-500
		Grayburg		Dolomite/Anhydrite/ Shale/Sandstone	300
		San Andres		Dolomite/Anhydrite	1500
	Leonardian	Glorieta		Sandy Dolomite	100
		Yeso	Paddock	Dolomite/Anhydrite/ Sandstone	1500
			Blinebry		
			Tubb		
			Drinkard		
		Abo		Dolomite/Anhydrite/ Shale	1000
	Wolfcampian	Wolfcamp		Limestone/Dolomite	0-1500
Pennsylvanian	Virgilian	Cisco		Limestone/Sandstone	0-1250
	Missourian	Canyon		Limestone/Shale	
	Des Moinesian	Strawn		Limestone/Sandstone	0-750
	Atokan	Bend		Limestone/Sandstone /Shale	0-1250
	Morrowan	Morrow			
Mississippian		----		Limestone/Shale	0-800
Devonian		----		Dolomite/Chert	0-1200
Silurian		Fusselman			
Ordovician	Upper	Montoya		Dolomite/Chert	0-400
	Middle	Simpson		Limestone/Sandstone /Shale	0-200
	Lower	Ellenburger		Dolomite	0-400
Cambrian		----		Sandstone	----

Stratigraphy of the Northwest Shelf of the Permian Basin. General lithology and approximate stratigraphic thickness for each formation are indicated. Modified from Pranter (1999) by Cabrera-Garzon, Raul, 2001, Ph.D., Thesis (2001) Redrawn by Nassir Alnaji, 2001

Source: Pranter (1999).

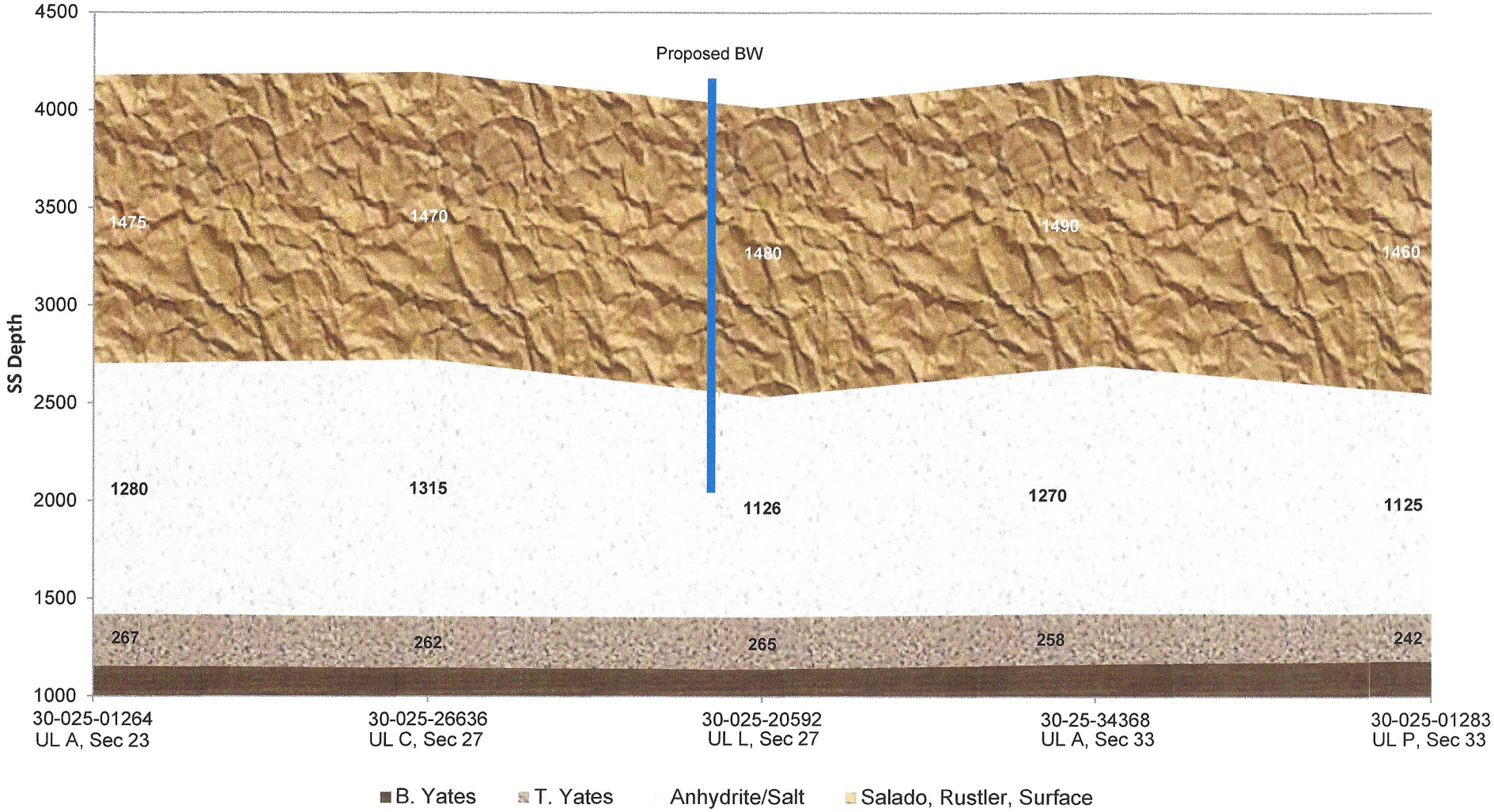
State 27 BSW #1
API # 30-025-20592
Discharge Plan Attachments

Attachment N – Geologic Cross Sections

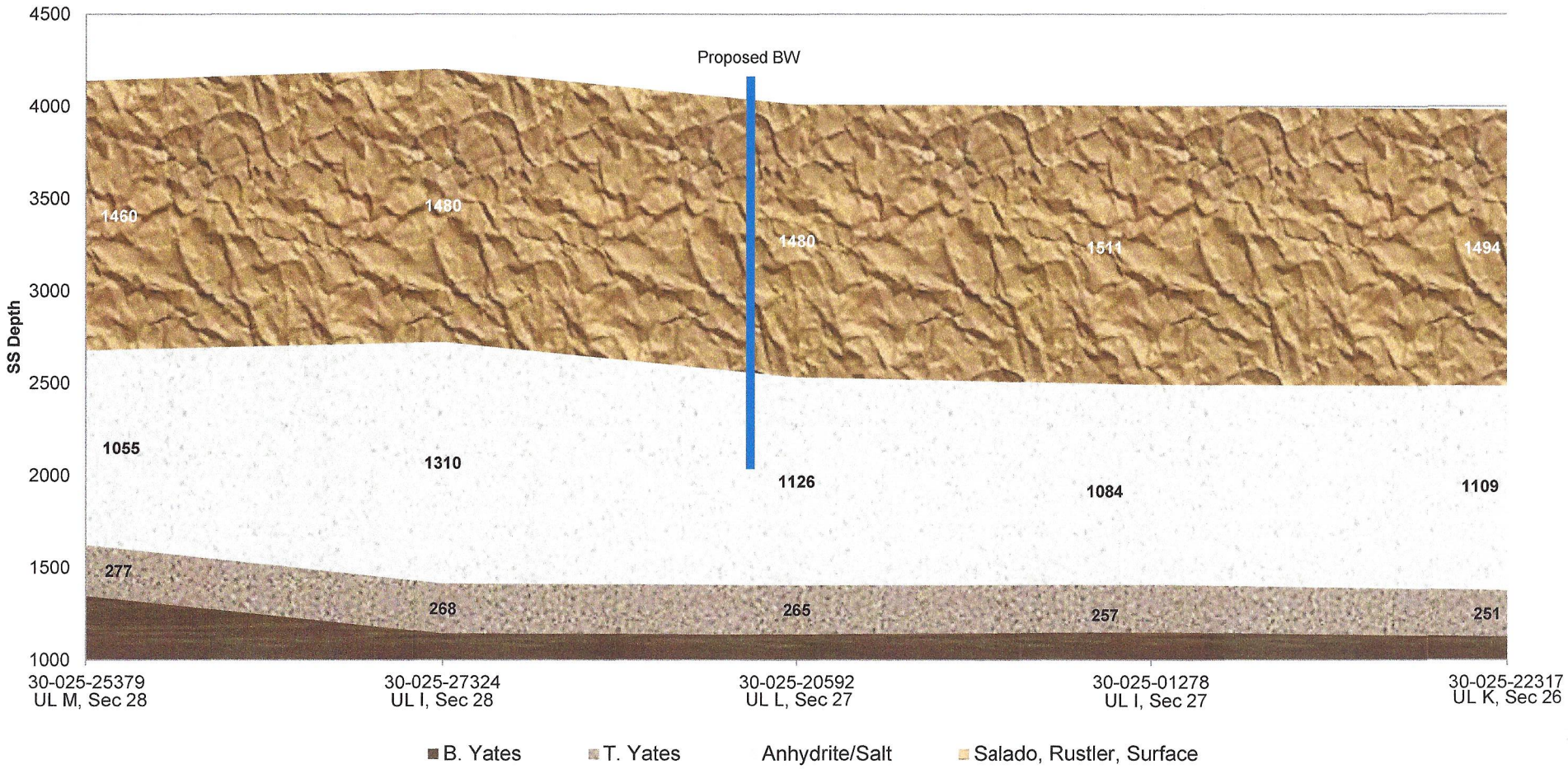


T16S, R33E
Lea County, New Mexico

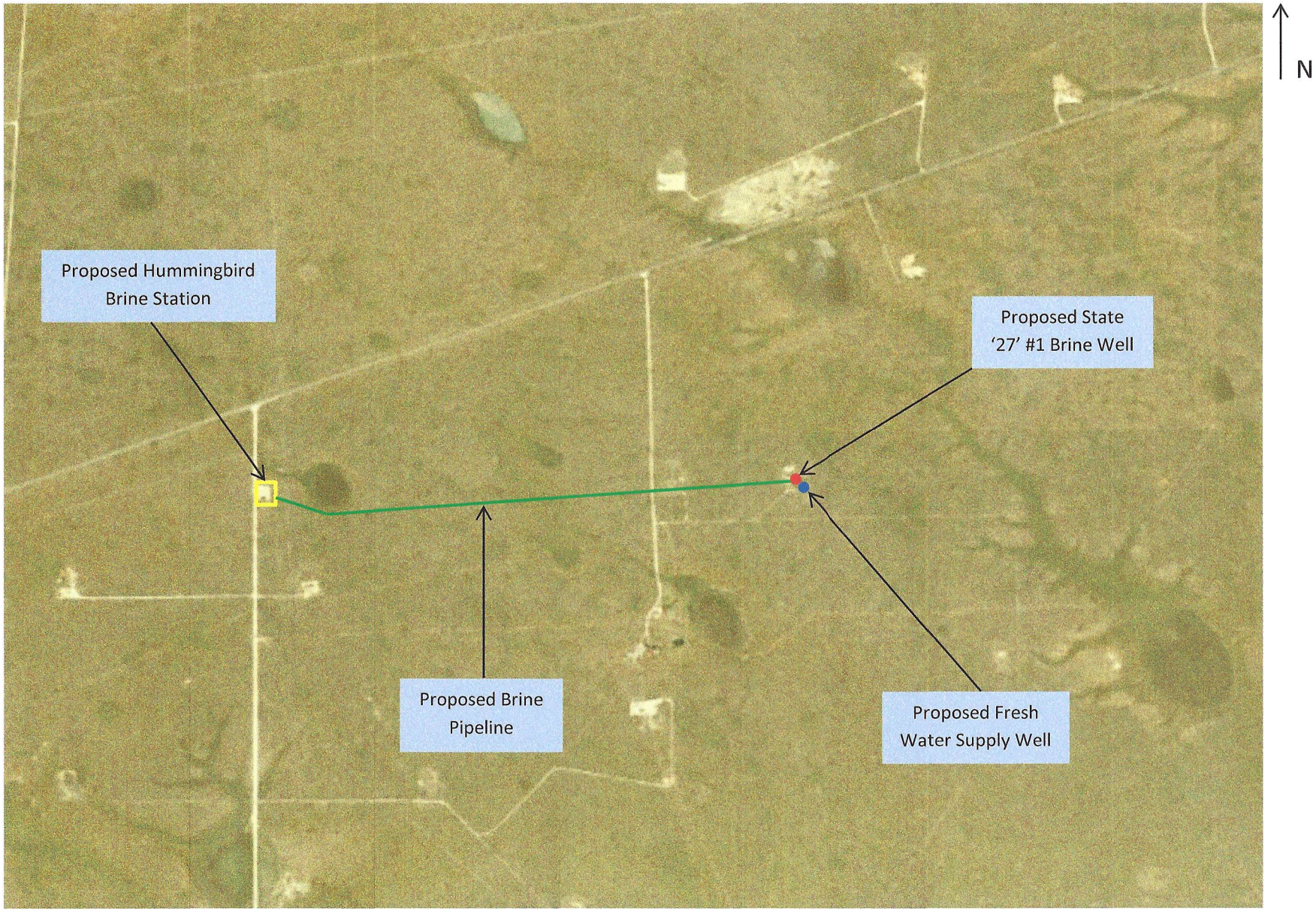
State '27' #1
North to South Cross Section
Attachment N



State '27' #1
West to East Cross Section
Attachment N



State '27' #1
API # 30-025-20592
Discharge Plan Attachments



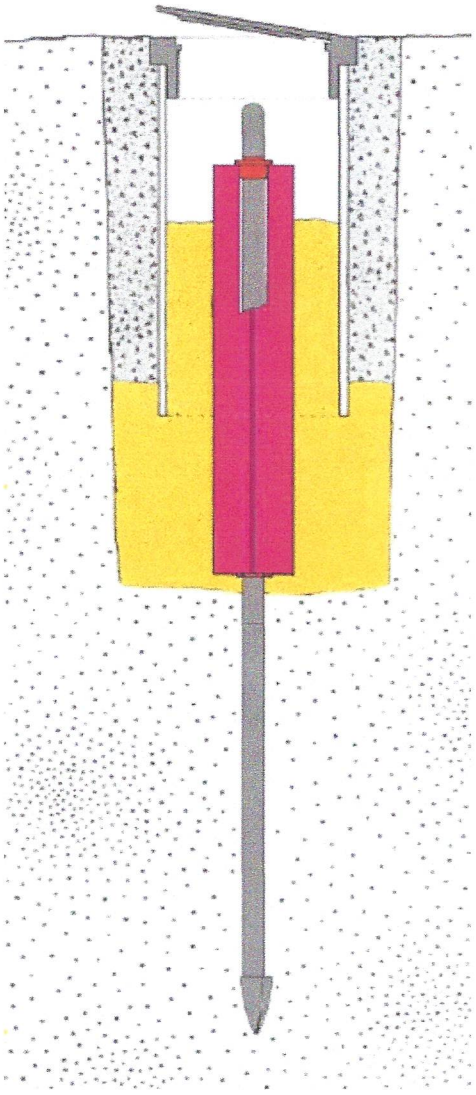
Attachment O – USGS Drainage Map of Project Area

Sectional Rod Monuments

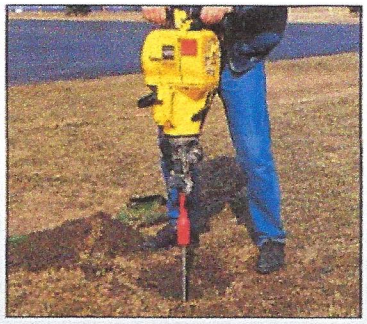
Berntsen
Survey Markers

Monument Design	Monument Installation Procedure

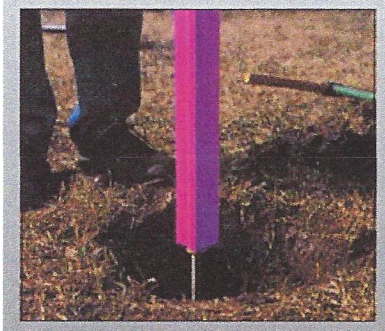
SLEEVED ROD MONUMENT WITH FLOATING SLEEVE



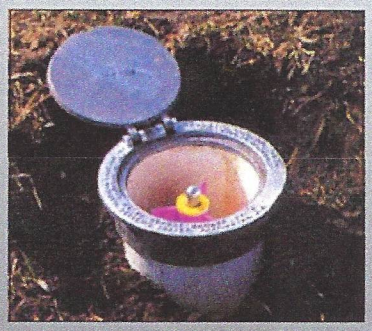
A 12 inch (300 mm) hole is augered to a depth of about 3 1/2 feet (1050 mm).



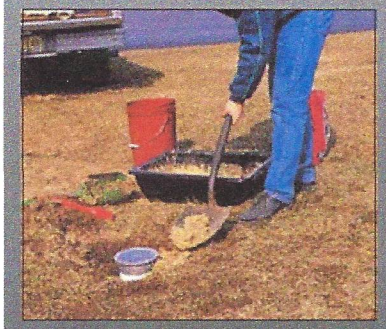
The rod monument is driven into the ground, a section at a time, to refusal*. The top of the last rod should be about 6 inches (150 mm) below the surface. *See page 15



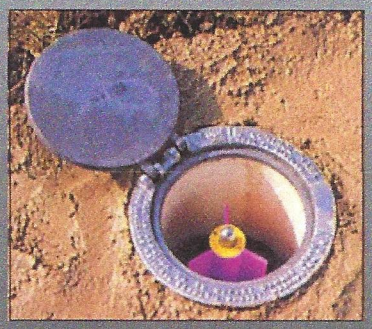
The finned sleeve (filled with grease) is placed over the rod and the datum point added (or filed onto the rod end).



A 6 inch (150 mm) diameter PVC pipe 3 feet (915 mm) long, with access cover glued on, is placed over the finned sleeve (pipe should not touch the fins). Back-fill (INSIDE the PVC Pipe) with sand.



The hole and pipe are carefully back-filled with sand. The top 12 inches (300 mm) of the hole (OUTSIDE of the PVC Pipe) are back-filled with concrete.



The finished mark - a well protected first-order benchmark.

Attachment P – Subsidence Monument Rod Design and Installation Procedure

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment Q

Public Notice

Legal notification for 2' X 3' (min) signage per Water Quality Control Commission Regulations 20.6.2.3108.B.1 NMAC

Llano Disposal, LLC, 783 highway 483, Lovington, NM 88260, Mr. Darr Angell has filed an application with the New Mexico Oil Conservation Division (OCD) to install and operate a Class III brine well and brine station.

The new brine station will be located approximately 200 feet southeast of this sign. A detailed description and map of the proposed facilities are hereby attached below.

Brine wells are wells completed into salt formations for the purpose of solution mining the salt to create brine water. Fresh water is pumped into deep salt zones thereby producing concentrated salt water called "brine water". This brine water is used in the oilfield primarily for drilling and completion operations. It is anticipated that brine water will be produced at a rate of less than 1900 barrels per day with a total dissolved concentration of 320,000 mg/l (primarily NaCl). Groundwater in this area is present at depths of approximately 140 – 190 feet. The concentration of total dissolved solids in this groundwater is generally about 400 mg/l. The permit requires that the brine well and associated operations must be constructed and operated in a matter that will not adversely affect groundwater quality.

The New Mexico Oil Conservation Division (OCD) will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Interested persons may contact:

Environmental Bureau Chief
Oil Conservation Division (OCD)
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: 505-476-3440

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment Q

Laminated Attachments (8-1/2" x 11" ea) Posted to Bottom of Sign

Page 1 of Detailed Notification

Llano Disposal, L.L.C. (Mr. Darr Angell), 783 Highway 483, Lovington, NM 88260 has submitted an application to the New Mexico Oil Conservation Division (NMOCD) for installation and operation of a Class III brine well to be located in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.8909645°, Long. -103.6576157°), Lea County, New Mexico. The proposed brine injection well is located approximately 17.8 miles west of Lovington, New Mexico on US Highway 82, then south 0.62 miles on Rooney Rd, then east 0.3 miles on lease road to well location.

The application proposes to produce fresh water from a proposed water source well to be drilled in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.890782°, Long. -103.657470°), Lea County, New Mexico. From time to time when brine is needed, the fresh water would be transported via a buried polyethylene pipeline approximately 75 feet northwest to the brine well. The fresh water would be pumped down the well's casing to an approximate depth of 1780 feet to 2300 feet below ground level at a rate of approximately 40 - 120 GPM and a normal operating pressure of 200 to 250 psig. The maximum allowable surface injection pressure would be 356 psig. Dissolution brine water (NaCl) would then be produced up the well tubing to surface.

The produced brine water would be metered then transported via a second buried polyethylene pipeline approximately 5928 feet west to three 1000 barrel fiberglass storage tanks at the proposed Hummingbird Brine Station located in Unit Letter L of Section 28, Township 16 South, Range 33 East (Lat. 32.890740°, Long. -103.676520°), Lea County, New Mexico. This brine station is located approximately 18.7 miles west of Lovington, New Mexico or 0.2 miles south of the intersection of US Hwy 82 and County Road L-122 (Hummingbird Rd). The brine water would be transferred/sold by delivery into water trucks on a concrete loading pad with containment curbing and a sump to prevent spills. There would be a synthetic liner and secondary containment underneath the brine storage tanks. All of this infrastructure is located on private land owned by the applicant.

Brine water is used in the oil and gas industry to supply concentrated salt water (i.e. brine water) with a total dissolved concentration of approximately 320,000 mg/l and a density that is 20% higher than fresh water. Typical brine water is 10 pounds per gallon (ppg) with the increased weight due to dissolved NaCl. Heavy brine water is essential in preventing blow-outs in high pressure gas wells and prevents loss of circulation when drilling through salt zones typically found in southeastern New Mexico.

The brine well will be designed to produce approximately 13 million barrels of brine water over a 20 year life period. The anticipated cavern radius will not exceed 150 feet. The well has been located on private land and provides a minimum of 2150 feet separation from any significant features, such as houses, water supplies, buildings, schools, businesses, etc.

Groundwater possibly affected by an unintentional spill or leak is located at a depth of approximately 140 – 190 feet below ground level. Typical groundwater in this area has a total dissolved solids concentration of approximately 400 mg/l. According to the Office of the State Engineer, average water well depth in the area is 223 feet below ground level. The brine facility will be designed and permitted to have no intentional water contaminants discharged to the surface or subsurface for the protection of groundwater.

Page 2 of Detailed Notification

The brine station will have a concrete loading pad for trucks and will have a synthetic liner underneath tanks areas to prevent any spills or leaks from reaching the ground surface. The brine well will have cemented casing and tubing strings to protect groundwater.

The owner and operator of the proposed facility will be:

Llano Disposal, LLC
783 Highway 483
Lovington, NM 88260

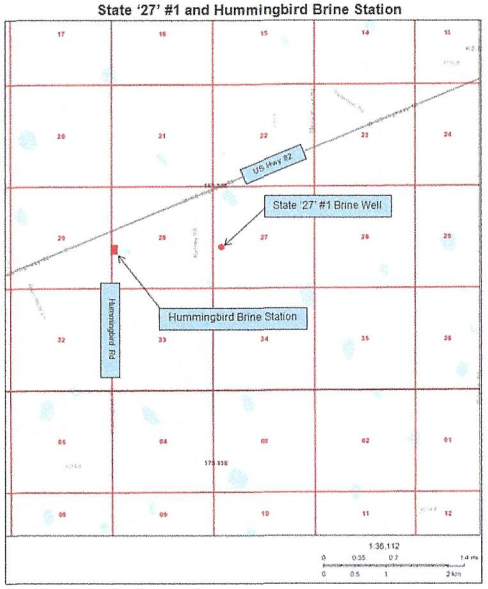
Comments and inquiries about the application may be directed to Llano Disposal, LLC c/o Mr. Danny Holcomb at 806-471-5628 or email danny@pwllc.net. Mr. Holcomb is a consultant to Llano Disposal, LLC providing assistance obtaining the regulatory permits for this project.

The New Mexico Oil Conservation Division (OCD) will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments or requesting to be on a facility-specific mailing list for future notices may contact:

Environmental Bureau Chief
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: 505-476-3440

Map of Area of Review

State '27' #1 and Hummingbird Brine Station



T16S, R33E
Lea County, New Mexico

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment Q

Notificación Aviso

Notificación legal de 2' X 3' (min) señalización por Reglamento de Comisión de Control de Calidad de Agua 20.6.2.3108.B.1 NMAC

Llano Disposal, LLC, 783 Highway 483, Lovington, NM 88260, Sr. Darr Angell ha presentado una solicitud con el División de Conservación de Petroléo de Nuevo Méxicano para instalar y operar así una salmuera de clase III y estación de la salmuera.

La nueva estación de salmuera será situados aproximadamente 200 pies sureste de este signo. Una descripción detallada y un mapa de las instalaciones propuestas por este medio se unen por debajo.

Pozos de salmuera son pozos completados en formaciones de sal con el propósito de la solución de minería de la sal para crear agua de la salmuera. Agua dulce es bombeado en zonas profundas sal tal modo produciendo concentrado agua salada llamado "agua de la salmuera". Esta agua de la salmuera se utiliza en el campo petrolífero principalmente para operaciones de perforación y terminación. Se prevé que se producirán salmuera agua a una velocidad de menos de 1900 barriles por día con una concentración disuelta total de 320.000 mg/l (principalmente NaCl). Agua subterránea en esta área está presente en aproximadamente 140 a 190 pies de profundidad. La concentración de sólidos totales disueltos en esta agua subterránea es generalmente cerca de 400 mg/l. El permiso requiere que la salmuera bien y asociados las operaciones deben ser construidas y operadas en un asunto que no afectará negativamente la calidad de las aguas subterráneas.

El División de Conservación de Petroléo de Nuevo Méxicano se aceptan comentarios y declaraciones de interés respecto a esta aplicación y creará una lista de correo de instalaciones específicas para las personas que deseen recibir futuras notificaciones. Las personas interesadas podrán en contacto con:

Jefe de la Oficina Ambiental
División de Conservación de Petroléo de Nuevo Méxicano
1220 South Saint Francis Drive
Santa Fe, New México 87505
Teléfono: 505-476-3440

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment Q

Laminado los archivos adjuntos (8-1/2 "x 11") publicado a parte inferior de la señal

Página 1 de notificación detallada

Llano Disposal, L.L.C. (Sr. Darr Angell), 783 Highway 483, Lovington, NM 88260 ha presentado una solicitud para La División de Conservación de Petroléo de Nuevo Méxicano (NMOCD) para la instalación y operación de una clase III de la salmuera bien que se encuentra en la unidad letra E de la sección 27, municipio de 16 sur, gama 33 este (Lat. 32,8909645°, Long. -103.6576157°), Condado Lea, Nuevo México. La inyección de salmuera propuesto está bien situada aproximadamente 17,8 millas al oeste de Lovington, Nuevo México en Highway 82, entonces del sur 0,62 millas en Rooney Road, entonces este 0,3 millas en carretera arrendamiento de ubicación bien.

La aplicación propone producir agua fresca de una fuente de agua propuesta para taladrarse en unidad letra L de la sección 27, municipio de 16 sur, gama 33 este (Lat. 32,890782°, Long. -103.657470°), Condado Lea, Nuevo México. De vez en cuando se necesita salmuera, el agua dulce transportarse a través de una tubería de polietileno enterrada aproximadamente 75 pies del noroeste a la salmuera bien. El agua se bombea al pozo de cubierta a una profundidad aproximada de 1780 pies a 2300 pies debajo de nivel del suelo a una tasa de aproximadamente 40-120 GPM y una presión normal de 200 a 250 psi. La presión de inyección superficial permisible máxima sería 356 psi. Agua de disolución salmuera (NaCl) entonces se produciría por el bien de la tubería a la superficie.

El agua de la salmuera producida se mide entonces transportado por una tubería de polietileno enterrada segundo aproximadamente 5928 pies al oeste a tres 1000barril tanques de almacenamiento de fibra de vidrio en la propuesta estación de salmuera Colibrí ubicado en la unidad letra L de la sección 28, municipio de 16 sur, gama 33 este (Lat. 32,890740°, Long. -103.676520°), Condado Lea, Nuevo México. Esta estación de salmuera está situados a aproximadamente 18,7 millas al oeste de Lovington, Nuevo México o 0,2 millas al sur de la intersección de Highway 82 y County Road L-122 (Hummingbird Road). El agua de la salmuera sería transferido/vendido por entrega en camiones de agua sobre una almohadilla confrenar de contención de carga de hormigón y un colector de aceite para evitar derrames. Habría un forro sintético y contención secundaria debajo de los tanques de almacenamiento de la salmuera. Toda esta infraestructura se encuentra en terrenos privados propiedad de la demandante.

Agua de la salmuera se utiliza en el aceite y la industria del gas para suministrar concentrado sal agua (es decir, salmuera) con una concentración disuelta total de aproximadamente 320.000 mg/l y una densidad que es 20% mayor de agua dulce. Salmuera típica está 10 libras por galón (ppg) con el aumento de peso debido a NaCl disuelto. Agua de salmuera pesada es esencial en la prevención de salidas de golpe en pozos de gas de alta presión y previene la pérdida de circulación durante la perforación a través de zonas de sal suelen encontradas en el sureste de Nuevo México.

Bien la salmuera se diseñará para producir aproximadamente 13 millones de barriles de salmuera durante un período de vida de 20 años. El radio caverna anticipada no excederá de 150 pies. El pozo se ha situado en terrenos privados y un mínimo de separación de 2150 pies de cualquier características importantes, tales como casas, suministros de agua, edificios, escuelas, empresas, etc.

Página 2 de notificación detallada

Agua subterránea posiblemente afectado por un derrame accidental o escape se encuentra a una profundidad de aproximadamente 140 – 190 pies debajo de nivel del suelo. Típico agua subterránea en esta área tiene una concentración de sólidos disueltos totales de aproximadamente 400 mg/l. Según la oficina del ingeniero de estado, profundidad media del agua en la zona es 223 pies debajo de nivel del suelo. La instalación de la salmuera será diseñada y puede no tener contaminantes intencional de agua descargadas a la superficie o subsuperficie para la protección de las aguas subterráneas. La estación de salmuera tendrá una plataforma de carga de cemento para camiones y tendrá un revestimiento sintético debajo de áreas de depósitos para evitar cualquier vertido o derrame accidental de llegar a la superficie de la tierra. La salmuera bien habremos cementado carcasa y tubos cadenas para proteger las aguas subterráneas.

El propietario y operador de la instalación propuesta será:

Llano Disposal, LLC
783 Highway 483
Lovington, NM 88260

Comentarios y consultas sobre la aplicación pueden ser dirigidas a Llano Disposal, LLC c/o Sr. Danny Holcomb en 806-471-5628 o por correo electrónico danny@pwllc.net. El Sr. Holcomb es consultor para proporcionar asistencia de Llano Disposal, LLC obtener los permisos reglamentarios para este proyecto.

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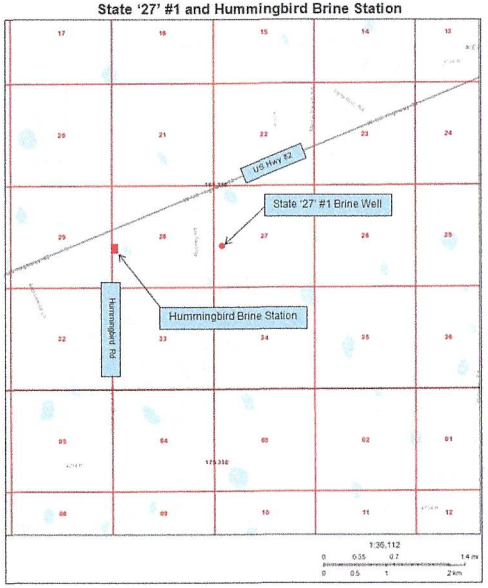
Jefe de la Oficina Ambiental
División de Conservación de Petroléo de Nuevo Méxicano
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Teléfono: 505-476-3440

Mapa del área de revisión

State '27' #1 and Hummingbird Brine Station



T16S, R33E
Lea County, New Mexico

State '27' #1
API #30-025-20592
Discharge Plan Attachments - Attachment R

Public Notice

Legal notification for onsite Public Notice per Water Quality Control Commission Regulations 20.6.2.3108.B.1 NMAC

Llano Disposal, L.L.C. (Mr. Darr Angell), 783 Highway 483, Lovington, NM 88260 has submitted an application to the New Mexico Oil Conservation Division (NMOCD) for installation and operation of a Class III brine well to be located in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.8909645°, Long. -103.6576157°), Lea County, New Mexico. The proposed brine injection well is located approximately 17.8 miles west of Lovington, New Mexico on US Highway 82, then south 0.62 miles on Rooney Rd, then east 0.3 miles on lease road to well location.

The application proposes to produce fresh water from a proposed water source well to be drilled in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.890782°, Long. -103.657470°), Lea County, New Mexico. From time to time when brine is needed, the fresh water would be transported via a buried polyethylene pipeline approximately 75 feet northwest to the brine well. The fresh water would be pumped down the well's casing to an approximate depth of 1780 feet to 2300 feet below ground level at a rate of approximately 40 - 120 GPM and a normal operating pressure of 200 to 250 psig. The maximum allowable surface injection pressure would be 356 psig. Dissolution brine water (NaCl) would then be produced up the well tubing to surface.

The produced brine water would be metered then transported via a second buried polyethylene pipeline approximately 5928 feet west to three 1000 barrel fiberglass storage tanks at the proposed Hummingbird Brine Station located in Unit Letter L of Section 28, Township 16 South, Range 33 East (Lat. 32.890740°, Long. -103.676520°), Lea County, New Mexico. This brine station is located approximately 18.7 miles west of Lovington, New Mexico or 0.2 miles south of the intersection of US Hwy 82 and County Road L-122 (Hummingbird Rd). The brine water would be transferred/sold by delivery into water trucks on a concrete loading pad with containment curbing and a sump to prevent spills. There would be a synthetic liner and secondary containment underneath the brine storage tanks. The entire infrastructure is located on private land owned by the applicant.

Brine water is used in the oil and gas industry to supply concentrated salt water (i.e. brine water) with a total dissolved concentration of approximately 320,000 mg/l and a density that is 20% higher than fresh water. Typical brine water is 10 pounds per gallon (ppg) with the increased weight due to dissolved NaCl. Heavy brine water is essential in preventing blow-outs in high pressure gas wells and prevents loss of circulation when drilling through salt zones typically found in southeastern New Mexico.

The brine well will be designed to produce approximately 13 million barrels of brine water over a 20 year life period. The anticipated cavern radius will not exceed 150 feet. The well has been located on private land and provides a minimum of 2150 feet separation from any significant features, such as houses, water supplies, buildings, schools, businesses, etc.

Groundwater possibly affected by an unintentional spill or leak is located at a depth of approximately 140 – 190 feet below ground level. Typical groundwater in this area has a total dissolved solids concentration of approximately 400 mg/l. According to the Office of the State Engineer, average water well depth in the area is 223 feet below ground level. The brine facility will be designed and permitted to have no intentional water contaminants discharged to the surface or subsurface for the protection of groundwater.

State '27' #1
API #30-025-20592
Discharge Plan Attachments - Attachment R

The brine station will have a concrete loading pad for trucks and will have a synthetic liner underneath tanks areas to prevent any spills or leaks from reaching the ground surface. The brine well will have cemented casing and tubing strings to protect groundwater.

The owner and operator of the proposed facility will be:

Llano Disposal, LLC
783 Highway 483
Lovington, NM 88260

Comments and inquiries about the application may be directed to Llano Disposal, LLC c/o Mr. Danny Holcomb at 806-471-5628 or email danny@pwllc.net. Mr. Holcomb is a consultant to Llano Disposal, LLC providing assistance obtaining the regulatory permits for this project.

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Environmental Bureau Chief
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: 505-476-3440

Aviso Público

Legal notificación para aviso público por Reglamento de Comisión de Control de calidad de agua 20.6.2.3108.B.1 NMAC

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State '27' #1
API #30-025-20592
Discharge Plan Attachments - Attachment R

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783 Highway 483
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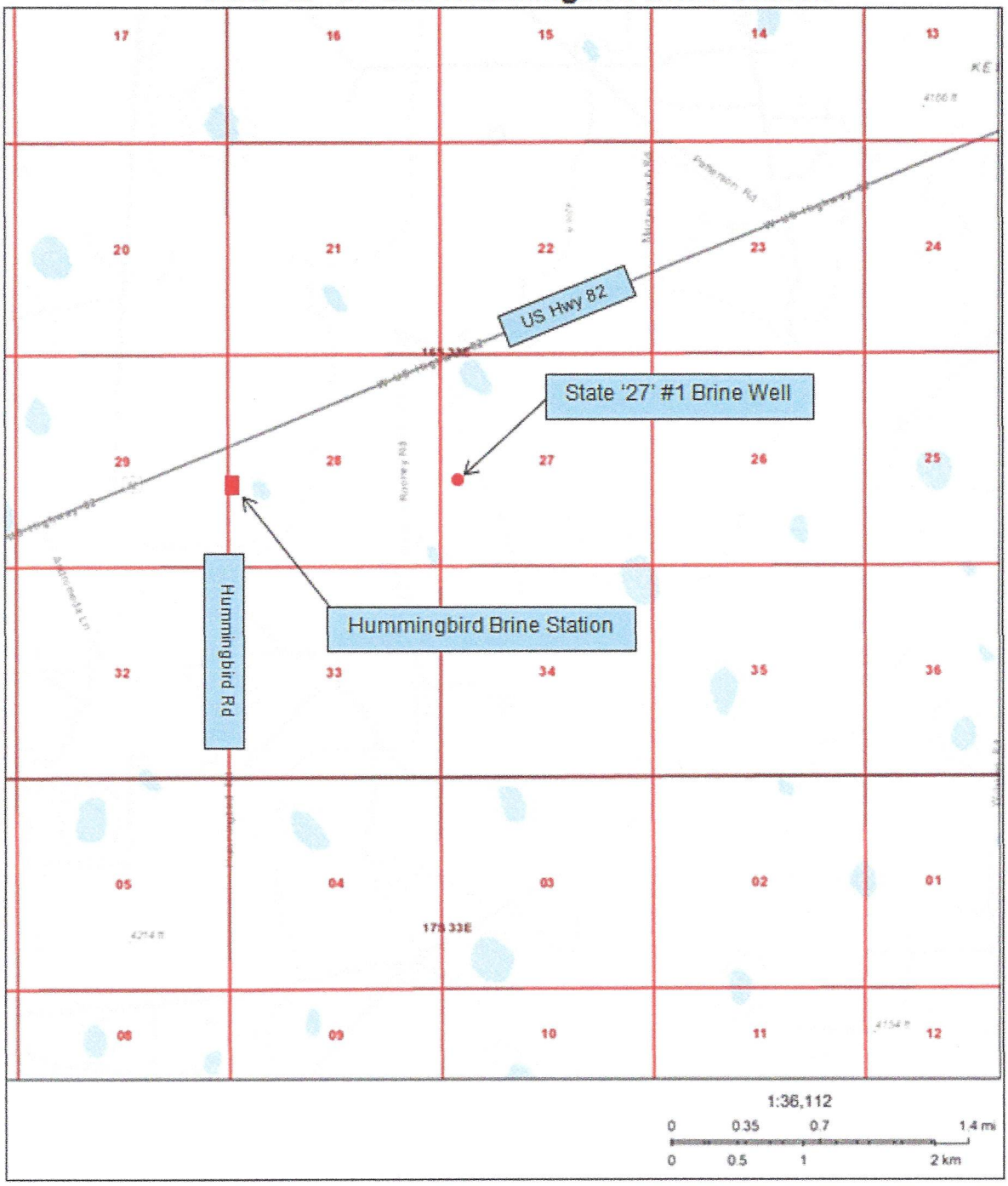
State '27' #1
API #30-025-20592
Discharge Plan Attachments - Attachment R

State '27' #1 and Hummingbird Brine Station



T16S, R33E
Lea County, New Mexico

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment 'S'

Public Notice Letter

Certified Mail

Date: _____

Property Owner of Record

Name:

Address:

City/State:

Public Notice

Legal notification per Water Quality Control Commission Regulations 20.6.2.3108.B.2 NMAC to property owner(s) of record that adjoin(s) the property owned by the applicant.

Llano Disposal, L.L.C. (Mr. Darr Angell), 783 Highway 483, Lovington, NM 88260 has submitted an application to the New Mexico Oil Conservation Division (NMOCD) for installation and operation of a Class III brine well to be located in Unit Letter L of Section 27, Township 16 South, Range 33 East (Lat. 32.8909645°, Long. -103.6576157°), Lea County, New Mexico. The proposed brine injection well is located approximately 17.8 miles west of Lovington, New Mexico on US Highway 82, then south 0.62 miles on Rooney Rd, then east 0.3 miles on lease road to well location.

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State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment 'S'

Brine water is used in the oil and gas industry to supply concentrated salt water (i.e. brine water) with a total dissolved concentration of approximately 320,000 mg/l and a density that is 20% higher than fresh water. Typical brine water is 10 pounds per gallon (ppg) with the increased weight due to dissolved NaCl. Heavy brine water is essential in preventing blow-outs in high pressure gas wells and prevents loss of circulation when drilling through salt zones typically found in southeastern New Mexico.

The brine well will be designed to produce approximately 13 million barrels of brine water over a 20 year life period. The anticipated cavern radius will not exceed 150 feet. The well has been located on private land and provides a minimum of 2150 feet separation from any significant features, such as houses, water supplies, buildings, schools, businesses, etc.

Groundwater possibly affected by an unintentional spill or leak is located at a depth of approximately 140 – 190 feet below ground level. Typical groundwater in this area has a total dissolved solids concentration of approximately 400 mg/l. According to the Office of the State Engineer, average water well depth in the area is 223 feet below ground level. The brine facility will be designed and permitted to have no intentional water contaminants discharged to the surface or subsurface for the protection of groundwater.

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Environmental Bureau Chief
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: 505-476-3440

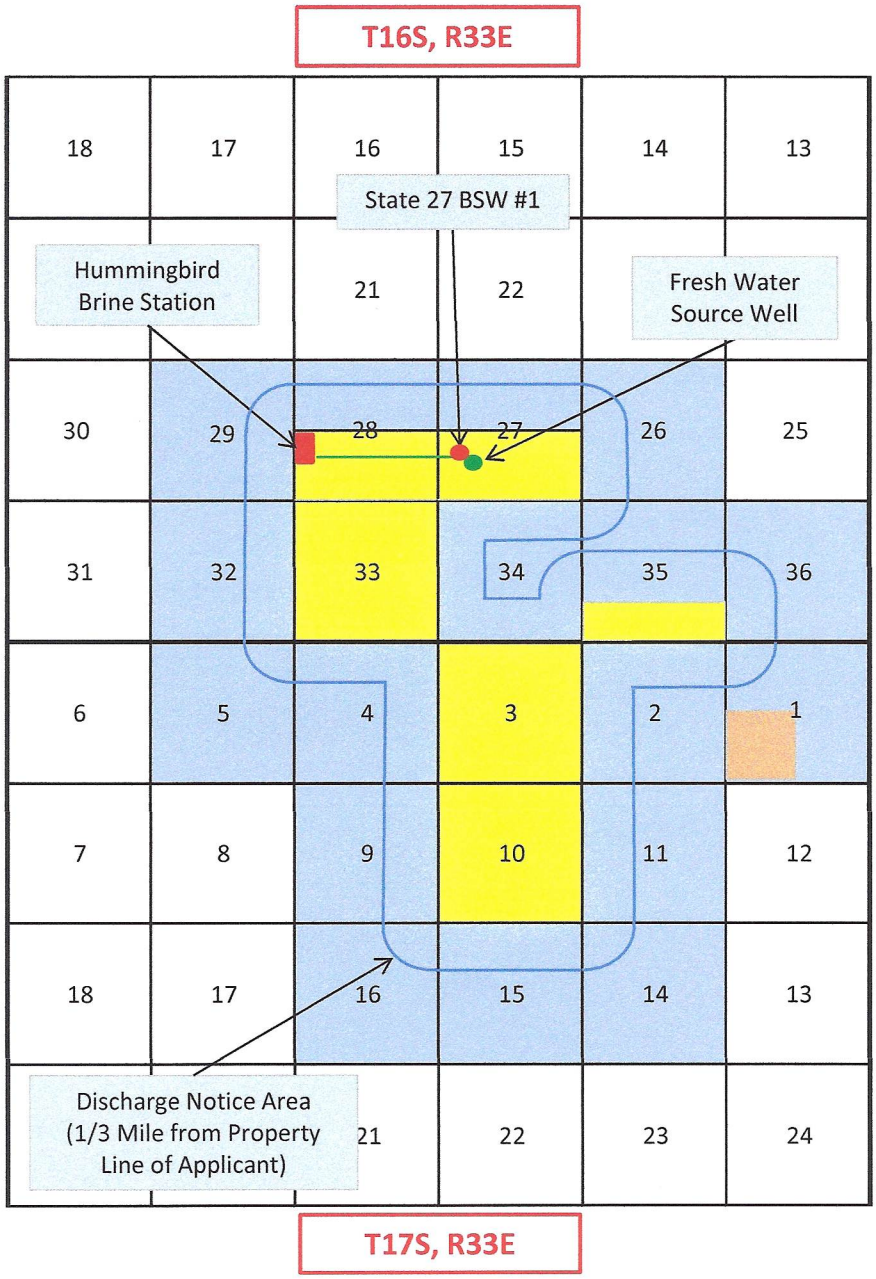
Sincerely,

Danny J. Holcomb
Agent for Llano Disposal, LLC

Attachment (map of area)

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment 'S'

Llano Disposal, LLC
State 27 BSW #1
Surface Property Ownership Map



Angell #2 Family LP, P. O. Box 190, Lovington, NM 88260
State of New Mexico, P. O. Box 1148, Santa Fe, NM 87504

Property Owner Notices

State '27' #1
API # 30-025-20592
Discharge Plan Attachments – Attachment 'S'

NOTIFICATION LIST - ADJOINING PROPERTY OWNERS

#	NAME	ADDRESS	CITY STATE ZIP	TYPE
	Angell #2 Family LP c/o Mr. Darr Angell	P. O. Box 190	Lovington, NM 88260	Surface Owner/Applicant

#	NAME	ADDRESS	CITY STATE ZIP	TYPE
1	State of New Mexico Commissioner of Public Land	P. O. Box 1148	Santa Fe, NM 87504	Adjoining Property Owner

NOTIFICATION LIST - MINERAL OWNER AND LESSEE

#	NAME	ADDRESS	CITY STATE ZIP	TYPE
	State of New Mexico Commissioner of Public Land	P. O. Box 1148	Santa Fe, NM 87504	Mineral Owner
2	Cimarex Energy Company	600 N. Marienfeld St, Suite 600	Midland, TX 79701	Mineral Lessee (VC-0071-0000)

State'27' #1
API # 30-025-20592
Discharge Plan Attachments - Attachment T

Public Notice Display Ad

Legal notification for 3" X 4" (min) newspaper display ad per Water Quality Control Commission Regulations 20.6.2.3108.B.4 NMAC

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783 Highway 483
Lovington, NM 88260

Comments and inquiries about the application may be directed to Llano Disposal, LLC c/o Mr. Danny Holcomb at 806-471-5628 or email danny@pwllc.net. Mr. Holcomb is a consultant to Llano Disposal, LLC providing assistance obtaining the regulatory permits for this project.

The New Mexico Oil Conservation Division (OCD) will accept comments and statements of interest regarding this application and will create a facility-specific mailing list for persons who wish to receive future notices. Persons interested in obtaining further information, submitting comments or requesting to be on a facility-specific mailing list for future notices may contact:

Environmental Bureau Chief
New Mexico Oil Conservation Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: 505-476-3440

State'27' #1
API # 30-025-20592
Discharge Plan Attachments - Attachment T

Aviso Público

Legal notificación para aviso público por Reglamento de Comisión de Control de calidad de agua 20.6.2.3108.B.1 NMAC

Llano Disposal, L.L.C. (Sr. Darr Angell), 783 Highway 483, Lovington, NM 88260 ha presentado una solicitud para La División de Conservación de Petroléo de Nuevo Méxicano (NMOCD) para la instalación y operación de una clase III de la salmuera bien que se encuentra en la unidad letra E de la sección 27, municipio de 16 sur, gama 33 este (Lat. 32.8909645°, Long. -103.6576157°), Condado Lea, Nuevo México. La inyección de salmuera propuesto está bien situada aproximadamente 17,8 millas al oeste de Lovington, Nuevo México en Highway 82, entonces del sur 0,62 millas en Rooney Road, entonces este 0,3 millas en carretera arrendamiento de ubicación bien.

La aplicación propone producir agua fresca de una fuente de agua propuesta para taladrarse en unidad letra L de la sección 27, municipio de 16 sur, gama 33 este (Lat. 32,890782°, Long. -103.657470°), Condado Lea, Nuevo México. De vez en cuando se necesita salmuera, el agua dulce transportarse a través de una tubería de polietileno enterrada aproximadamente 75 pies del noroeste a la salmuera bien. El agua se bombea al pozo de cubierta a una profundidad aproximada de 1780 pies a 2300 pies debajo de nivel del suelo a una tasa de aproximadamente 40-120 GPM y una presión normal de 200 a 250 psi. La presión de inyección superficial permisible máxima sería 356 psi. Agua de disolución salmuera (NaCl) entonces se produciría por el bien de la tubería a la superficie.

El agua de la salmuera producida se mide entonces transportado por una tubería de polietileno enterrada segundo aproximadamente 5928 pies al oeste a tres 1000barril tanques de almacenamiento de fibra de vidrio en la propuesta estación de salmuera Colibrí ubicado en la unidad letra L de la sección 28, municipio de 16 sur, gama 33 este (Lat. 32,890740°, Long. -103.676520°), Condado Lea, Nuevo México. Esta estación de salmuera está situados a aproximadamente 18,7 millas al oeste de Lovington, Nuevo México o 0,2 millas al sur de la intersección de Highway 82 y County Road L-122 (Hummingbird Road). El agua de la salmuera sería transferido/vendido por entrega en camiones de agua sobre una almohadilla con frenar de contención de carga de hormigón y un colector de aceite para evitar derrames. Habría un forro sintético y contención secundaria debajo de los tanques de almacenamiento de la salmuera. Toda esta infraestructura se encuentra en terrenos privados propiedad de la demandante.

Agua de la salmuera se utiliza en el aceite y la industria del gas para suministrar concentrado sal agua (es decir, salmuera) con una concentración disuelta total de aproximadamente 320.000 mg/l y una densidad que es 20% mayor de agua dulce. Salmuera típica está 10 libras por galón (ppg) con el aumento de peso debido a NaCl disuelto. Agua de salmuera pesada es esencial en la prevención de salidas de golpe en pozos de gas de alta presión y previene la pérdida de circulación durante la perforación a través de zonas de sal suelen encontradas en el sureste de Nuevo México.

Bien la salmuera se diseñará para producir aproximadamente 13 millones de barriles de salmuera durante un período de vida de 20 años. El radio caverna anticipada no excederá de 150 pies. El pozo se ha situado en terrenos privados y un mínimo de separación de 2150 pies de cualquier características importantes, tales como casas, suministros de agua, edificios, escuelas, empresas, etc.

State'27' #1
API # 30-025-20592
Discharge Plan Attachments - Attachment T

Agua subterránea posiblemente afectado por un derrame accidental o escape se encuentra a una profundidad de aproximadamente 140 – 190 pies debajo de nivel del suelo. Típico agua subterránea en esta área tiene una concentración de sólidos disueltos totales de aproximadamente 400 mg/l. Según la oficina del ingeniero de estado, profundidad media del agua en la zona es 223 pies debajo de nivel del suelo. La instalación de la salmuera será diseñada y puede no tener contaminantes intencional de agua descargadas a la superficie o subsuperficie para la protección de las aguas subterráneas. La estación de salmuera tendrá una plataforma de carga de cemento para camiones y tendrá un revestimiento sintético debajo de áreas de depósitos para evitar cualquier vertido o derrame accidental de llegar a la superficie de la tierra. La salmuera bien habremos cementado carcasa y tubos cadenas para proteger las aguas subterráneas.

El propietario y operador de la instalación propuesta será:

Llano Disposal, LLC
783 Highway 483
Lovington, NM 88260

Comentarios y consultas sobre la aplicación pueden ser dirigidas a Llano Disposal, LLC c/o Sr. Danny Holcomb en 806-471-5628 o por correo electrónico danny@pwllc.net. El Sr. Holcomb es consultor para proporcionar asistencia de Llano Disposal, LLC obtener los permisos reglamentarios para este proyecto.

La División de Conservación de Petroléo de Nuevo Méxicano (NMOCD) se acepta comentarios y declaraciones de interés respecto a esta aplicación y creará una lista de correo de instalaciones específicas para las personas que deseen recibir futuras notificaciones. Puede contactar a las personas interesadas en obtener más información, enviar comentarios o solicitar estar en una lista de correo de instalaciones específicas para futuros avisos:

Jefe de la Oficina Ambiental
División de Conservación de Petroléo de Nuevo Méxicano
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Teléfono: 505-476-3440

Holcomb Consultants
6900 Spring Cherry Lane
Amarillo, Texas 79124

July 16, 2018

NMOCD Environmental Bureau
1220 South St. Francis Drive
Santa Fe, NM 87505
Attn: Mr. Carl Chavez

Re: State 27 #1 (30-025-20592)
UL 'L', Section 27, T16S, R33E, Lea County, New Mexico

Per the rules and regulations of the New Mexico Oil Conservation Division, please find enclosed a copy of NMOCD form C-108 for the above referenced well. This C-108 is being submitted with a WQCC Discharge Plan Application.

Llano Disposal, LLC, P. O. Box 190, Lovington, NM 88260 hereby submits a form C-108 (Application for Authorization to Inject) to the New Mexico Oil Conservation Division seeking administrative approval to convert the State '27' #1, API 30-025-20592, 1980 FSL x 660 FWL, Unit Letter "L", Section 27, T16S, R33E, Lea County, New Mexico from a plugged and abandoned well to a commercial brine service well. The proposed production interval would be the Salado formation through cased hole completion between 1780' – 2400'. Injection fluid will be fresh water from a newly drilled water well. Anticipated average daily injection volume is 1550 BWPD with a maximum daily injection volume of 1900 BWPD. Anticipated average injection pressure is 250 psi with a maximum injection pressure of 475 psi. The well is located approximately 18.5 miles west of Lovington, New Mexico.

No notices of this C-108 application were made since WQCC rules (20.6.2.3108 NMAC) will determine notice requirements once a discharge plan is considered "Administratively Complete" by the OCD.

Sincerely,

DJ Holcomb

Danny J. Holcomb
Agent for Llano Disposal, LLC
Email: danny@pwllc.net
Cell: 806-471-5628

Llano Disposal, LLC
State '27' #1
API # 30-025-20592
1980 FSL x 660 FWL
Unit Letter 'L', Section 27, T16S, R33E
Lea County, New Mexico
C108 Application for Authorization to Inject

I.

The purpose of this application is seeking administrative approval for authorization to convert the State '27' #1 from a plugged and abandoned well to a commercial brine production well. This C-108 application is submitted in conjunction with a WQCC discharge plan application.

II.

Operator: Llano Disposal, LLC
Address: P.O. Box 190, Lovington, New Mexico 88260
Contact Party: Marvin Burrows phone: 575-631-8067 email: burrowsmarvin@gmail.com

III.

Well Name: State '27' #1
API Number: 30-025-20592
Location: Unit Letter 'L', Section 27, T16S, R33E, Lea County, New Mexico
Operator: Llano Disposal, LLC OGRID: 370661
Proposed Formation: BSW; Salado (Pool Code: 96173)
Please see Exhibit "A" for additional well data.

IV.

This is not an expansion of an existing project.

V.

Please see Exhibit "B" for lease map.

VI.

There is one offset well located within the 0.5 mile Area of Review and an additional 6 offset wells located outside the 0.5 mile AOR, but within the 1 mile AOR. See Exhibit "C" for map with 0.5 mile and 1 mile AORs, offset well lists and offset wellbore diagram.

VII.

1. **Anticipated daily injection volume – 1550 BWPD with a maximum of 1900 BWPD.**
2. **System will be closed. Brine will be pipelined into the brine station and trucked out.**
3. **Anticipated disposal pressure: Average 250 psig, Maximum 475 psig.**
4. **Please see Exhibit "D" for fresh water analysis of water injected for brine production.**

VIII.

The proposed injection interval is the Salado (salt) formation between 1780' – 2400'.

Llano Disposal, LLC
State '27' #1
API # 30-025-20592
1980 FSL x 660 FWL
Unit Letter 'L', Section 27, T16S, R33E
Lea County, New Mexico
C108 Application for Authorization to Inject

IX.

Proposed Completion Procedure: After drilling out cement plugs from surface to 4511' in 9-5/8" casing, circulate out mud laden fluid, fill casing with fresh water, run CBL, CNL and caliper log from 4511' to surface and submit to OCD for review. If approved, set a 9-5/8" CIBP on wireline at 2596' capped with 10' of cement at BOS. Set a CIBP ~1800' capped with 10 ' of cement for Whipstock seat. Cut a window in the 9-5/8" casing at 1780'-1790', drill through salt to 2400'. Run a dual port 9-5/8" packer set at 1760' with 2-7/8' fiberglass tail pipe landed at 2300' and 3-1/2" IPC production tubing to surface. No stimulation will be performed. Note: Depths for casing window, packer and tailpipe were agreed upon during consultations with OCD personnel after log evaluations.

X.

Copies of any logs performed will be submitted to OCD.

XI.

NM OSE records indicate that there are 19 fresh water wells located within a nine square mile Area of Review. There are only 5 fresh water wells located within the 1 mile AOR. See Exhibit "E" for OSE data base query and water sample test results on two of the wells.

XII.

Available geological and engineering data have been examined and no evidence of open faults or hydrological connection between the proposed salt formation and any underground sources of drinking water has been found.

XIII.

This C-108 is for OCD general use. No notifications of this C-108 have been made. Notifications will be made per WQCC rules (20.3.2.3108 NMAC) following OCD determination that the proposed associated discharge plan is "Administratively Complete".

Danny J. Holcomb: DJ Holcomb
Agent for Llano Disposal, LLC

Date: 7/16/2018

Llano Disposal, LLC
State '27' #1
API # 30-025-20592
1980 FSL x 660 FWL
Unit Letter 'L', Section 27, T16S, R33E
Lea County, New Mexico
Well Data

Atlantic Refining Company drilled and abandoned this well as a Penn test in 1964.

Drilled 17-1/2" hole to 420', ran 13-3/8" 48# surface casing to 414', cemented with 370 sacks cement. Circulated cement to surface.

Drilled 12-1/4" hole to 4581', ran 9-5/8" 32.3/36# intermediate casing to 4578', cemented with 2940 sacks cement. Circulated cement to surface.

Drilled 8-3/4" hole to 11647', performed multiple DSTs and ran logs, plugged and abandoned as a dry hole in 1964. Set cement plugs as follows:

Plug #1	40 sx	11469-11579'
Plug #2	45 sx	10765'-10891'
Plug #3	40 sx	9684'-9796'
Plug #4	25 sx	7940'-8010'
Plug #5	25 sx	4523'-4593'
Surface Plug	10 sx	30'-surface

In 1977, W. A. Moncrief, Jr. re-entered the well to deepen it to 13900' as a Lower Seamen, Atoka and Morrow test.

Drilled 8-3/4" hole to 13804', ran 5-1/2" 20/17# production casing to 13798', cemented with 1975 sacks cement. Top of cement at 8190' per temperature survey (reported in C-103 dated 4/18/97).

Well produced for a short time from Morrow and Kemnitz perfs before isolating them and recompleting the well into the lower Wolfcamp in 1980. The well produced from the lower Wolfcamp until 1995 and was plugged and abandoned by Moncrief in 1997. Cement plugs were set as follows:

Plug #1	CIBP w/ 35' cmt	10700'
Plug #2	25 sx	7760'-8000'
Plug #3	25 sx	5760'-6000'
Cut and pull 5-1/2" casing at 4965'		
Plug #4	45 sx	4917'-5022'
Plug #5	45 sx	4505'-4650'
Plug #6	45 sx	1465'-1600'
Plug #7	50 sx	315'-465'
Surface Plug	10 sx	30'-surface

EXHIBIT "A"

Llano Disposal, LLC
State '27' #1
API # 30-025-20592
1980 FSL x 660 FWL
Unit Letter 'L', Section 27, T16S, R33E
Lea County, New Mexico
Well Data (cont'd)

In May, 2018, Llano Disposal worked with the OCD District 1 and Environmental Bureau staffs for approval to drill out the top 3 cement plugs to evaluate the well as a possible brine supply well. Cement plugs were drilled out to 4511' and CBL, CNL and casing inspection logs were run. After consulting with the OCD, the decision was made to move forward with WQCC discharge plan permitting.

Reported Formation Tops	Depths (ft)
Anhydrite	1480
Salt	1593
B. Salt	2606
Yates	2764
Queen	3714
Grayburg	4120
San Andres	4460
Glorieta	5936
Tubb	7180
Drinkard	7305
Abo	7856
Wolfcamp	9720
Kemnitz	10770
Cisco	11486
Canyon	12023
Strawn	12336
Atoka	12470
Morrow	13640
Chester	13767

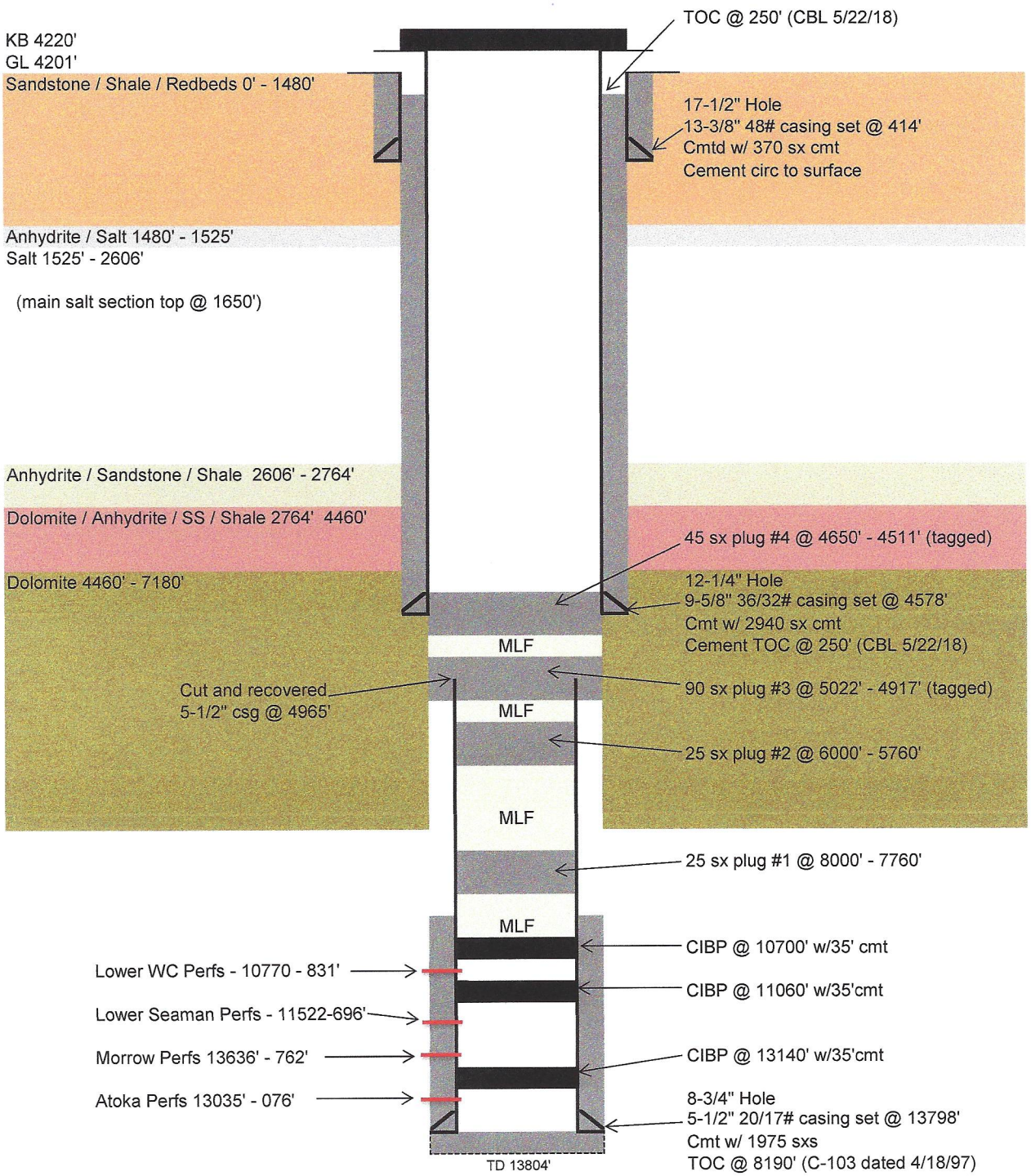
Information obtained from NMOCD well file.

EXHIBIT "A"

CURRENT WELLBORE (after cmt plug drillout)

P&A Well

Llano Disposal, LLC
State 27 #1 P&A
API # 30-025-20592
1980' FSL x 660' FWL, UL 'L', Sec 27, T16S, R33E, Lea County, NM



Drawing Not to Scale

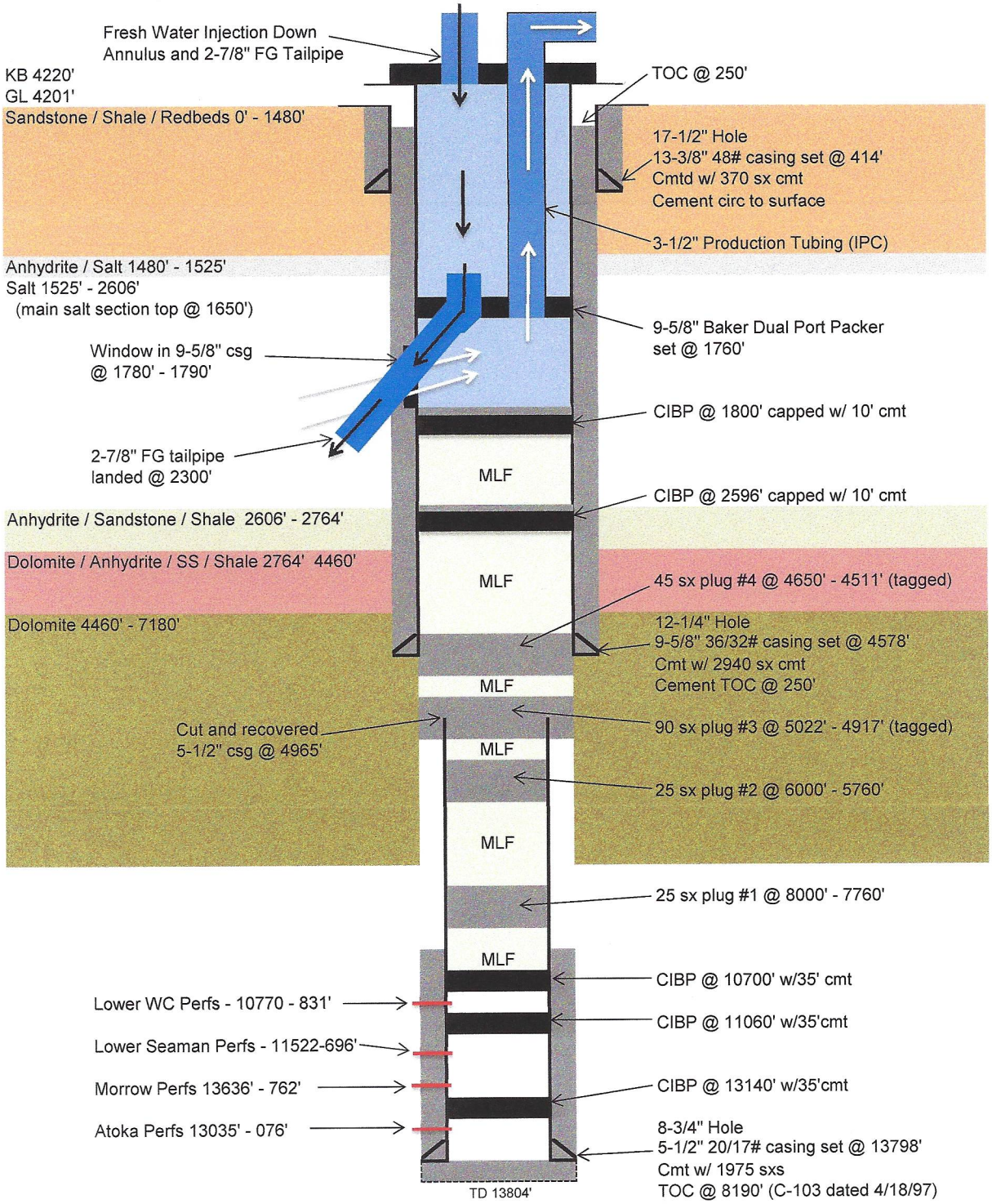
Note: This wellbore diagram represents information obtained from OCD files and new logs (5/22/18).

EXHIBIT "A"

PROPOSED WELLBORE

Configured for Brine Service Well

Llano Disposal, LLC
State 27 #1 P&A
API # 30-025-20592
1980' FSL x 660' FWL, UL 'L', Sec 27, T16S, R33E, Lea County, NM

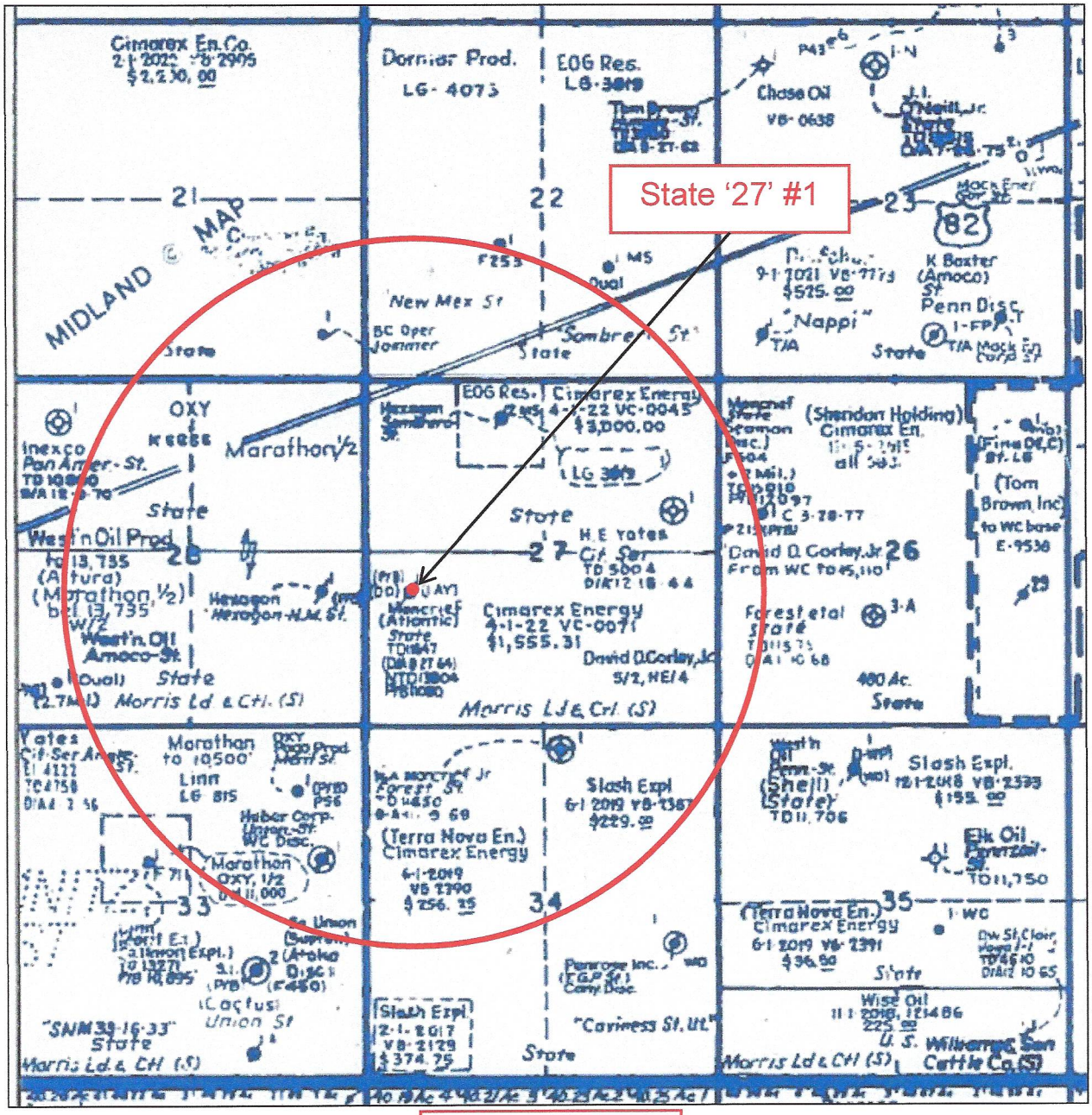


Drawing Not to Scale

Note: This wellbore diagram represents information obtained from OCD files and new logs (5/22/18).

EXHIBIT "A"

Llano Disposal, LLC
State '27' #1
API # 30-025-20592
1980 FSL x 660 FWL
Unit Letter 'L', Section 27, T16S, R33E
Lea County, New Mexico Lease Map - 1 Mile Area of Review

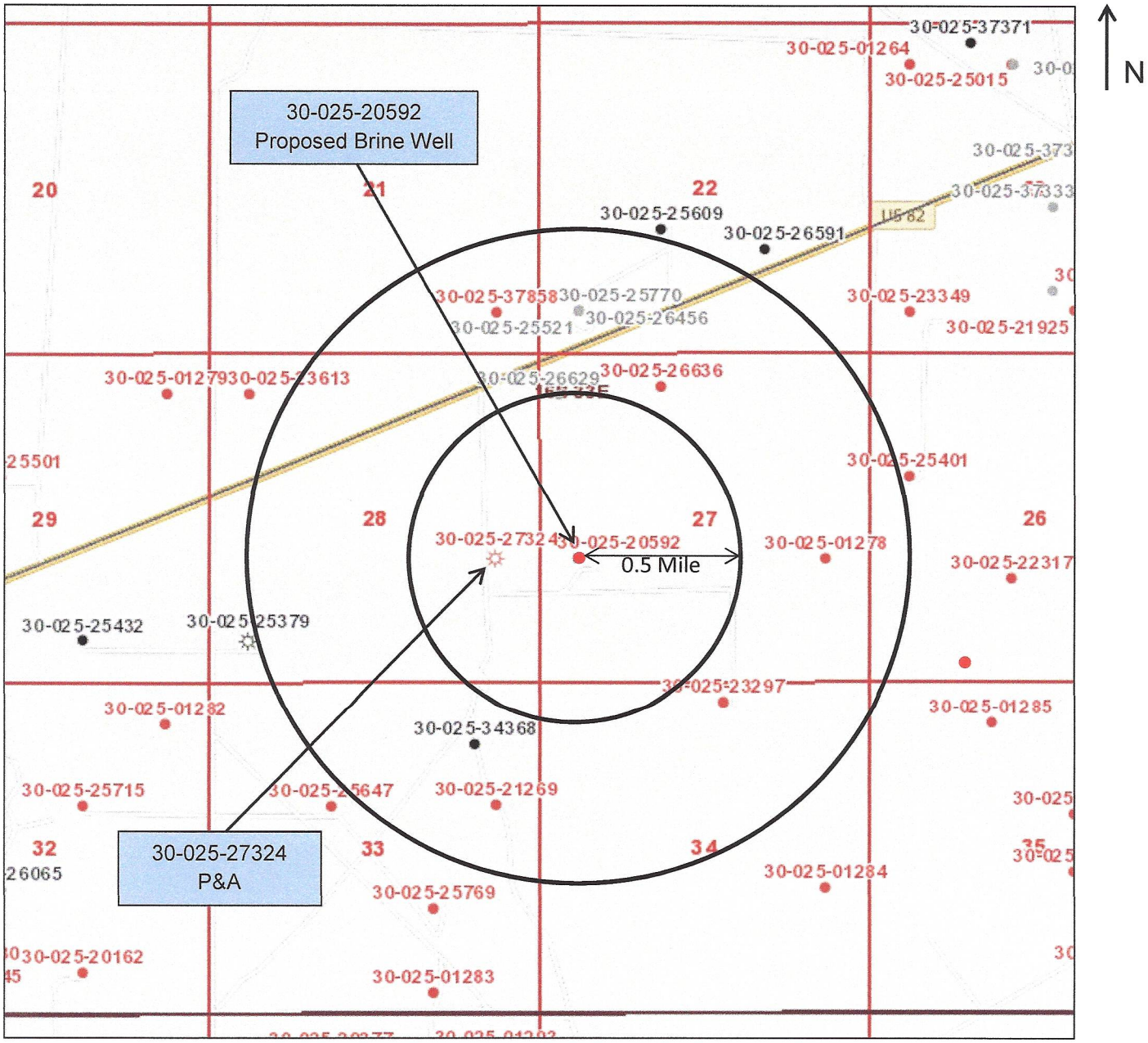


Map Source: Midland Map Co.

T16S, R33E

EXHIBIT "B"

Llano Disposal, LLC
State '27' #1
API # 30-025-20592
1980 FSL x 660 FWL
Unit Letter 'L', Section 27, T16S, R33E
Lea County, New Mexico
Lease Map – 0.5 Mile and 1 Mile Areas of Review



Map Source: NMOCD GIS

0.5 miles

T16S, R33E
Lea County, New Mexico

EXHIBIT "C"

Llano Disposal, LLC
State 27 #1
API # 30-025-20592
Offset Wells Located within 0.5 and 1 Mile Areas of Review

There is only one offset well located within the 0.5 mile AOR.

UL, Sec, T, R	API Well No.	Well Name	TVD	Operator	Status	Salt Plugs or Covered with Casing/Cement
I-28-16S-33E	30-025-27324	Hexagon NM 28 State #1	13848'	Hexagon Oil & Gas Inc	Drilled 1981, P&A 1991	Cmt plug @ TOS and below salt, 8-5/8" csg/cmt cover salt

There are six additional offset wells located outside the 0.5 mile AOR, but within the 1 mile AOR.

UL, Sec, T, R	API Well No.	Well Name	TVD	Operator	Status	Salt Plugs or Covered with Casing/Cement
P-21-16S-33E	30-025-37858	Jammer #1	10902'	Legacy Reserves Operating, LP	Drilled 2006, P&A 2010	Cmt plugs @ TOS and below salt, 8-5/8" csg/cmt cover salt
C-27-16S-33E	30-025-26636	Sombrero MS State #2	11730'	I&W Inc	Drilled 1980, P&A 1998	Cmt plugs @ TOS and below salt, 8-5/8" csg/cmt cover salt
I-27-16S-33E	30-025-01278	Cities Service State #1	5004'	Harvey E. Yates	Drilled 1944, P&A 1946	Bridge plugs at TOS and at BOS, no csg/cmt cover salt
A-33-16S-33E	30-025-34368	Merit 33 State #1	15094'	Oxy USA Inc	Drilled 1998, active WC producer	9-5/8" csg/cmt cover salt
H-33-16S-33E	30-025-21269	Union State #1	11650'	J. M. Huber Corp	Drilled 1965, P&A 1972	Cmt plugs above and below salt, 8-5/8" csg covers salt
B-34-16S-33E	30-025-23297	Apple State #1	11650'	Manzano Oil Corp	D&A 1969, Re-entered 1986, P&A 1987	Cmt plugs above and below salt, 8-5/8" csg covers salt

Wellbore diagram for the well located within the 0.5 mile AOR is on page 10.

EXHIBIT "C"

CURRENT WELLBORE DIAGRAM - OFFSET WELL

P&A Well

Hexagon Oil and Gas Inc
Hexagon NM 28 State #1
API # 30-025-27324
1980' FSL x 660' FEL, UL 'I', Sec 28, T16S, R33E, Lea County, NM

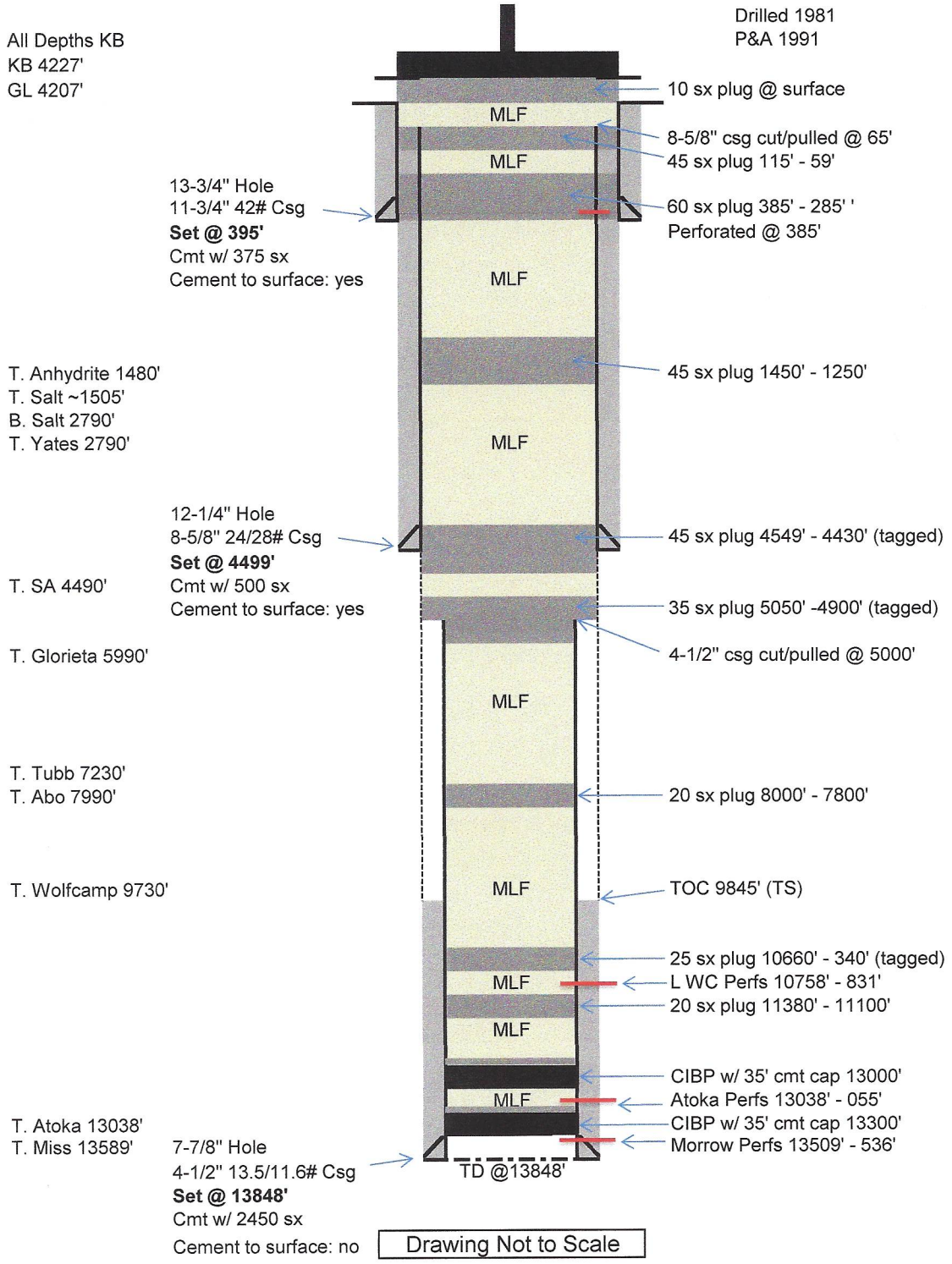


EXHIBIT "C"

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 01391 POD5	L		LE	1	1	1	33	16S	33E	623792	3639333	100	62	38
L 03527 S2	L		LE	3	4	3	35	16S	33E	627508	3637911*	275	138	137
L 03527 S3	L		LE	2	3	3	35	16S	33E	627305	3638104*	240	155	85
L 03576	L		LE		2	4	34	16S	33E	626799	3638401*	212	160	52
L 03599	L		LE	1	1	3	28	16S	33E	623854	3640075			
L 03599 S	L		LE	4	4	4	33	16S	33E	625293	3637871	287	175	112
L 03599 S2	L		LE	1	1	1	34	16S	33E	625480	3639285	290	168	122
L 03599 S3	L		LE	2	2	2	27	16S	33E	626858	3640918	280	160	120
L 03712	L		LE		2	2	26	16S	33E	628377	3640841*	170	135	35
L 03751	L		LE		2	2	26	16S	33E	628377	3640841*	175		
L 03789	L		LE				26	16S	33E	627788	3640216*	223	145	78
L 05419	L		LE		1	3	27	16S	33E	625570	3639990*	240	130	110
L 06072	L		LE		3	4	23	16S	33E	627969	3641236*	163	80	83
L 06222	L		LE		2	3	26	16S	33E	627582	3640022*	205	154	51
L 06594	L		LE	1	1	2	34	16S	33E	626284	3639297*	230	160	70
L 06611	L		LE	3	3	3	23	16S	33E	627063	3641121*	230	160	70
L 06724	L		LE	1	1	1	28	16S	33E	623849	3640868*	243	190	53
L 10288	L		ED		2	1	27	16S	33E	625962	3640800*	200		
L 13233 POD1	L		LE	1	1	1	34	16S	33E	625422	3639335	260		

There are 19 fresh water wells located within 9 square miles of the proposed brine well.

*UTM location was derived from PLSS - see Help

Average Depth to Water:	**144 feet**
Minimum Depth:	**62 feet**
Maximum Depth:	**190 feet**

Record Count: 19

PLSS Search:

Section(s): 21, 22, 23, 26, 27, 28, 33, 34, 35 **Township:** 16S **Range:** 33E

EXHIBIT "D"

Fresh Water Well Test Results

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: CAPROCK BSW Project Number: NONE GIVEN Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 16-Jul-18 09:40

SAMPLE A

H801855-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**190**		5.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Chloride*	**36.0**		4.00	mg/L	1	8070501	AC	10-Jul-18	4500-Cl-B	
Conductivity*	**480**		1.00	uS/cm	1	8071001	AC	10-Jul-18	120.1	
pH*	**7.73**		0.100	pH Units	1	8071001	AC	10-Jul-18	150.1	
Sulfate*	**34.3**		10.0	mg/L	1	8071002	AC	10-Jul-18	375.4	
TDS*	**324**		5.00	mg/L	1	8070311	AC	11-Jul-18	160.1	
Alkalinity, Total*	**156**		4.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Calcium*	**70.9**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Magnesium*	**8.93**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Potassium*	**2.86**	0.677	10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	J
Sodium*	**15.2**		10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	

Sample A – Fresh water well at ranch house in A-33-16S-33E (0.48 miles SW of State 27 #1)

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

EXHIBIT "D"

Fresh Water Well Test Results

CARDINAL Laboratories

PHONE (575) 393-2326 * 101 E. MARLAND * HOBBS, NM 88240

Analytical Results For:

LLANO DISPOSAL, LLC 125 W. ST. ANNE HOBBS NM, 88240	Project: CAPROCK BSW Project Number: NONE GIVEN Project Manager: MARVIN BURROWS Fax To: NONE	Reported: 16-Jul-18 09:40

SAMPLE B

H801855-02 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
Cardinal Laboratories										
Inorganic Compounds										
Alkalinity, Bicarbonate	**181**		5.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Chloride*	**48.0**		4.00	mg/L	1	8070501	AC	10-Jul-18	4500-Cl-B	
Conductivity*	**468**		1.00	uS/cm	1	8071001	AC	10-Jul-18	120.1	
pH*	**7.86**		0.100	pH Units	1	8071001	AC	10-Jul-18	150.1	
Sulfate*	**34.0**		10.0	mg/L	1	8071002	AC	10-Jul-18	375.4	
TDS*	**310**		5.00	mg/L	1	8070311	AC	11-Jul-18	160.1	
Alkalinity, Total*	**148**		4.00	mg/L	1	8062505	AC	10-Jul-18	310.1	
Green Analytical Laboratories										
Total Recoverable Metals by ICP (E200.7)										
Calcium*	**47.0**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Magnesium*	**9.14**		1.00	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	
Potassium*	**2.49**	0.677	10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	J
Sodium*	**38.4**		10.0	mg/L	10	B807085	JDA	12-Jul-18	EPA200.7	

Sample B – Fresh water well at proposed Brine Station in L-28-16S-33E (1.08 miles W of State 27 #1)

Cardinal Laboratories

*=Accredited Analyte

EXHIBIT "D"

Celey D. Keene, Lab Director/Quality Manager

District I
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 and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-101
Revised July 18, 2013

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
Llano Disposal, LLC **PO Box 190** **Lovington, NM 88260**	**370661**
	3. API Number **30-025-20592**

4. Property Code	5. Property Name	6. Well No.
	State '27'	**001**

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
L	27	16S	33E		1980	S	660	W	Lea

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

9. Pool Information

Pool Name	Pool Code
BSW; Salado	**96173**

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
E	M	R	S	4201
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	4505' (PBTD)	Salado	Unknown	Unknown

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
60' – 190'	~2542 feet	Greater than 1 mile

☒ **We will be using a closed-loop system in lieu of lined pits**

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	**17-1/2"**	**13-3/8"**	**48**	**414**	**370**	**Surface – In Place**
Intermed	**12-1/4"**	**9-5/8"**	**36/32**	**4578**	**2940**	**Surface – In Place**
Production	**8-3/4"**	**5-1/2"**	**20/17**	**4965 - 13798**	**700**	**8190' – In Place**

Casing/Cement Program: Additional Comments

Enclosures: Current and Proposed Wellbore Diagrams

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double/Pipe/Blinds	3000	3000	Cameron/Schaffer

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.
Signature: DJHolcomb

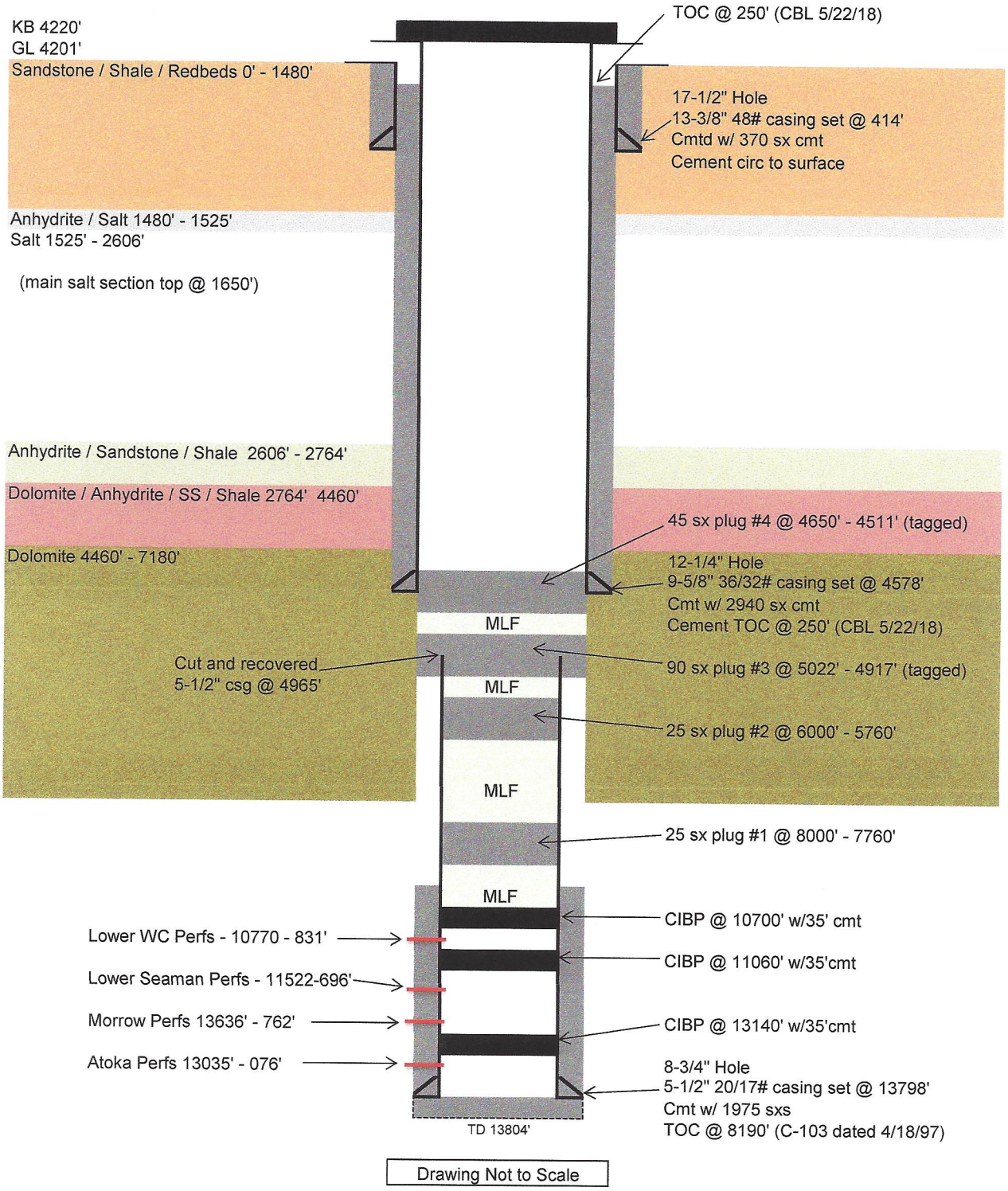
Printed name: **Danny J. Holcomb**	
Title: **Agent for Llano Disposal, LLC**	
E-mail Address: **danny@pwllc.net**	
Date: **4/18/2018**	Phone: **806-471-5628**

OIL CONSERVATION DIVISION	
Approved By:	
Title:	
Approved Date:	Expiration Date:
Conditions of Approval Attached	

CURRENT WELLBORE (after cmt plug drillout)

P&A Well

Llano Disposal, LLC
State 27 #1 P&A
API # 30-025-20592
1980' FSL x 660' FWL, UL 'L', Sec 27, T16S, R33E, Lea County, NM

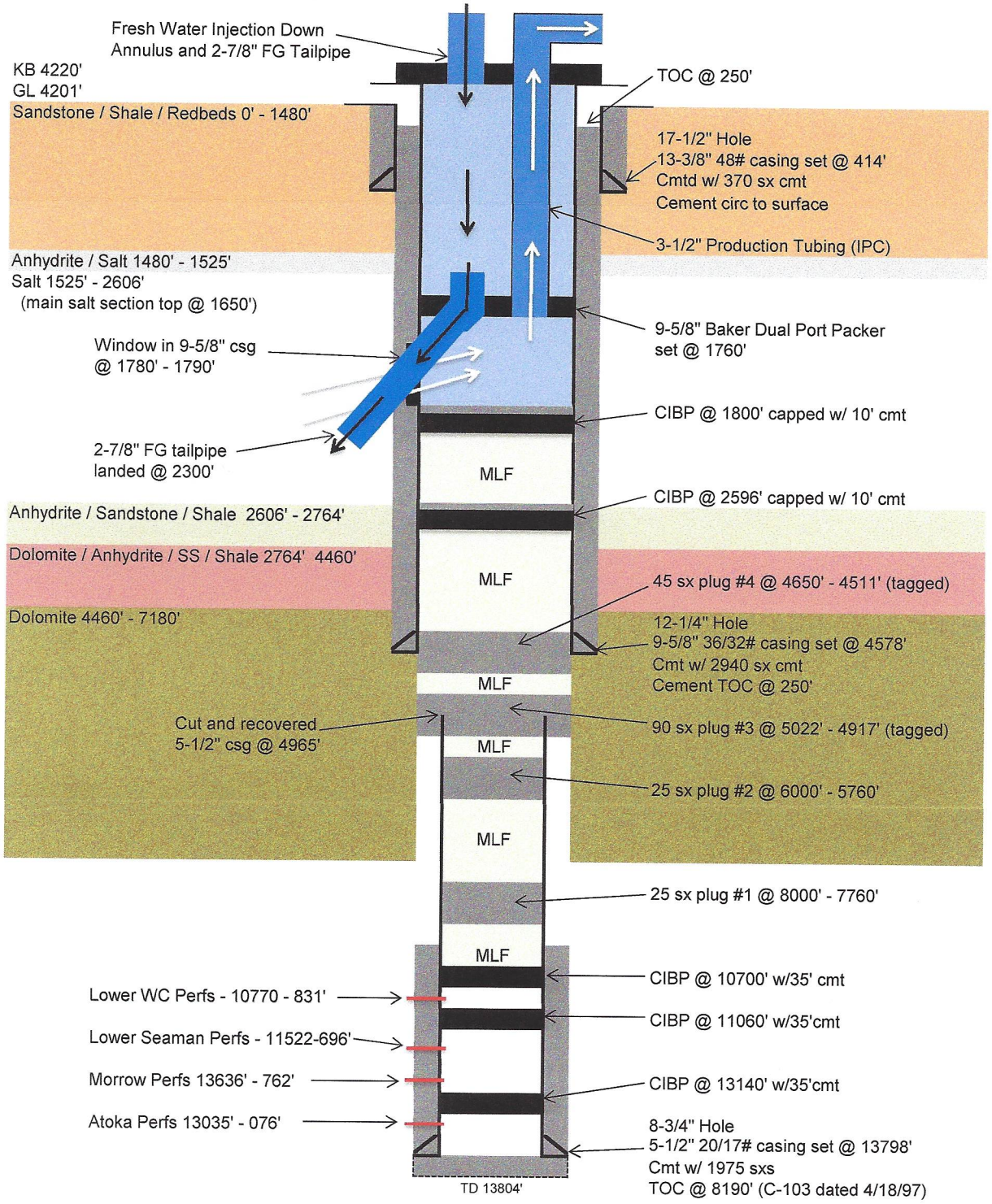


Note: This wellbore diagram represents information obtained from OCD files and new logs (5/22/18).

PROPOSED WELLBORE

Configured for Brine Service Well

Llano Disposal, LLC
State 27 #1 P&A
API # 30-025-20592
1980' FSL x 660' FWL, UL 'L', Sec 27, T16S, R33E, Lea County, NM



Drawing Not to Scale

Note: This wellbore diagram represents information obtained from OCD files and new logs (5/22/18).

Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
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District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

WELL API NO. 30-025-20592

5. Indicate Type of Lease STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: State '27'

1. Type of Well: Oil Well ☐ Gas Well ☒ Other - Proposed Brine Well

8. Well Number 1

2. Name of Operator: Llano Disposal, LLC

9. OGRID Number: 370661

3. Address of Operator: P.O. Box 190, Lovington, NM 88260

10. Pool name or Wildcat: BSW; Salado

4. Well Location
Unit Letter L : 1980 feet from the South line and 660 feet from the West line
Section 27 Township 13S Range 36E NMPM Lea County

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 4201' GL

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☒	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
DOWNHOLE COMMINGLE	☐						
CLOSED-LOOP SYSTEM	☒						
OTHER: Recomplete well to BSW			☒	OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

In accordance with discussions with OCD Environmental Bureau, Llano Disposal LLC proposes the following procedure to convert this well to brine well service after WQCC Discharge Permit BW-38 approval:

1) MIRU WL, run 9-5/8" CIBP on WL, set at 2596' (BOS) capped with 10' cement via WL dump bailer. Run 9-5/8" CIBP on WL, set at 1800' (seat for Whipstock)ccapped with 10' cement via WL dump bailer, RDMO WL.
2) MIRU pulling unit, reverse unit/swivel and Whipstock assembly, NU BOP, unload and tally 2-7/8" workstring, set 2 frac tanks (closed loop system) and fill one tank with BW. Perform casing MIT to 300 psi for 30 minutes. RIH with Whipstock anchor on workstring, tag CIBP cement cap at 1790', set anchor, pull workstring.
3) RIH with casing cutter assembly, four 4-3/4" DCs and workstring to Whipstock anchor, mill 10' casing side window in 9-5/8" casing at 1780' – 1790'. POH with workstring, DCs, casing cutter, pick up bit. RIH with workstring and bit assembly, drill through salt to 2400', circulate hole clean. POH with workstring, DCs and BHA.
4) RIH with 9-5/8" Baker dual port packer on 3-1/2" IPC production tubing, set packer 1760', land 2-7/8" fiberglass tailpipe at 2300'.
5) ND BOP, hook up wellhead, perform open-hole pressure test to 300 psi for 4 hours. RDMO pulling unit, reverse unit, frac tanks.
6) Circulate FW to test brine service well. Install surface equipment. Prepare to initiate brine production.

Re-entry ~~Spud~~ Date: 5/14/2018 Rig Release Date: 5/19/2018

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE DJHolcomb TITLE Agent for Llano Disposal, LLC DATE 7/16/2018

Type or print name Danny J. Holcomb E-mail address: danny@pwllc.net PHONE: 806-471-5628

For State Use Only

APPROVED BY: TITLE DATE

Conditions of Approval (if any):