

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR

- [D] Other: Specify \_\_\_\_\_

*SWD-1085*  
*- Solaris Midstream, LLC*  
*371643*  
*2017 541-6*

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or  Does Not Apply

- [A]  Working, Royalty or Overriding Royalty Interest Owners
- [B]  Offset Operators, Leaseholders or Surface Owner
- [C]  Application is One Which Requires Published Legal Notice
- [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F]  Waivers are Attached

*well*  
*- Solaris Brinnin St*  
*midstream SWD*  
*#1*  
*30-025-Pending*  
*POD*  
*SWD, Duwain*  
*Solaris*  
*97869*

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

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

Ben Stone  
 Print or Type Name

*Ben Stone*  
 Signature

Agent for Solaris Water Midstream, LLC 7/03/17  
 Title

ben@sosconsulting.us  
 e-mail Address

Date



July 3, 2017

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

Attn: Mr. David Catanach, Director

*Re: Application of Solaris Water Midstream, LLC to permit for salt water disposal in the proposed Solaris Brininstool SWD Well No.1, to be located in Section 29, Township 25 South, Range 33 East, NMPM, Lea County, New Mexico.*

Dear Mr. Catanach,

Please find enclosed form C-108 Application for Authority to Inject, supporting the above-referenced request to permit for disposal, the Solaris Brininstool SWD No.1.

Solaris Water Midstream seeks to optimize efficiency, both economically and operationally, of its operations and to offer additional disposal options for operators in southeast New Mexico. Approval of this application is consistent with that goal as well as the NMOCD's mission of preventing waste and protection of correlative rights.

Published legal notice will run on or about July 5, 2017 in the edition of the Hobbs News-Sun and all offset operators and other interested parties have been notified individually. The legal notice affidavit will be forwarded when received. This application also includes a wellbore schematic, area of review maps, leaseholder plats and other required information for a complete Form C-108. The well is located split-estate on private land and federal minerals; a copy of this application has been submitted to the Bureau of Land Management, Carlsbad Field Office, Oil and Gas Division.

I respectfully request that the approval of this salt water disposal well proceed swiftly and if you or your staff requires additional information or has any questions, please do not hesitate to call or email me.

Best regards,

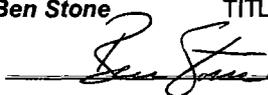
Ben Stone, Partner  
SOS Consulting, LLC  
Agent for Solaris Water Midstream, LLC

Cc: Application attachment and file

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I PURPOSE **Salt Water Disposal** and the application **QUALIFIES** for administrative approval
- II OPERATOR **Solaris Water Midstream, LLC**  
ADDRESS **701 Tradewinds Blvd., Suite C, Midland, TX 79706**
- CONTACT PARTY **Agent: SOS Consulting, LLC – Ben Stone (903) 488-9850**
- III WELL DATA **All well data and applicable wellbore diagrams are ATTACHED.**
- IV **This is not an expansion of an existing project.**
- V **A map is attached** 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 A tabulation is attached of data on all wells of public record within the area of review which penetrate the proposed injection zone **There are NO (0) Wells in the subject AOR.** The data includes a description of each well's type, construction, date drilled, location, depth, and a schematic of any plugged well illustrating all plugging detail **NO P&A Wells.**
- VII **The following data is ATTACHED** on the proposed operation, including
- 1 Proposed average and maximum daily rate and volume of fluids to be injected,
  - 2 Whether the system is open or closed,
  - 3 Proposed average and maximum injection pressure,
  - 4 Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re-injected 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 **Appropriate geologic data on the injection zone is ATTACHED** 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 **Stimulation program – a conventional acid job may be performed to clean and open the formation.**
- \*X Attach appropriate logging and test data on the well (If well logs have been filed with the Division, they need not be resubmitted) **Well Logs will be filed with OCD.**
- \*XI **There are 2 domestic water wells within one mile of the proposed salt water disposal well. Analyses ATTACHED.**
- XII **An affirmative statement is ATTACHED that available geologic and engineering data has been examined and no evidence was found** of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water
- XIII **"Proof of Notice" section on the next page of this form has been completed and ATTACHED. There are 3 offset lessees and/or operators within ½ mile and BLM minerals - all have been noticed. Well location is PRIVATE.**
- 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 **Ben Stone** TITLE **SOS Consulting, LLC agent for Solaris Water Midstream, LLC**

SIGNATURE  DATE **7/03/2017**

E-MAIL ADDRESS: **ben@sosconsulting.us**

\* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted Please show the date and circumstances of the earlier submittal

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

**FORM C-108 – APPLICATION FOR AUTHORIZATION TO INJECT (cont.)**

**III WELL DATA – *The following information and data is included (See ATTACHED Wellbore Schematic):***

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 *pursuant to the following criteria is ATTACHED.***

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

# **C-108 - Item III**

Subject Well Data

## **WELL SCHEMATIC**

**(Proposed)**

With Construction Data Detail

## **ESTIMATED FORMATION TOPS**



# WELL SCHEMATIC - PROPOSED

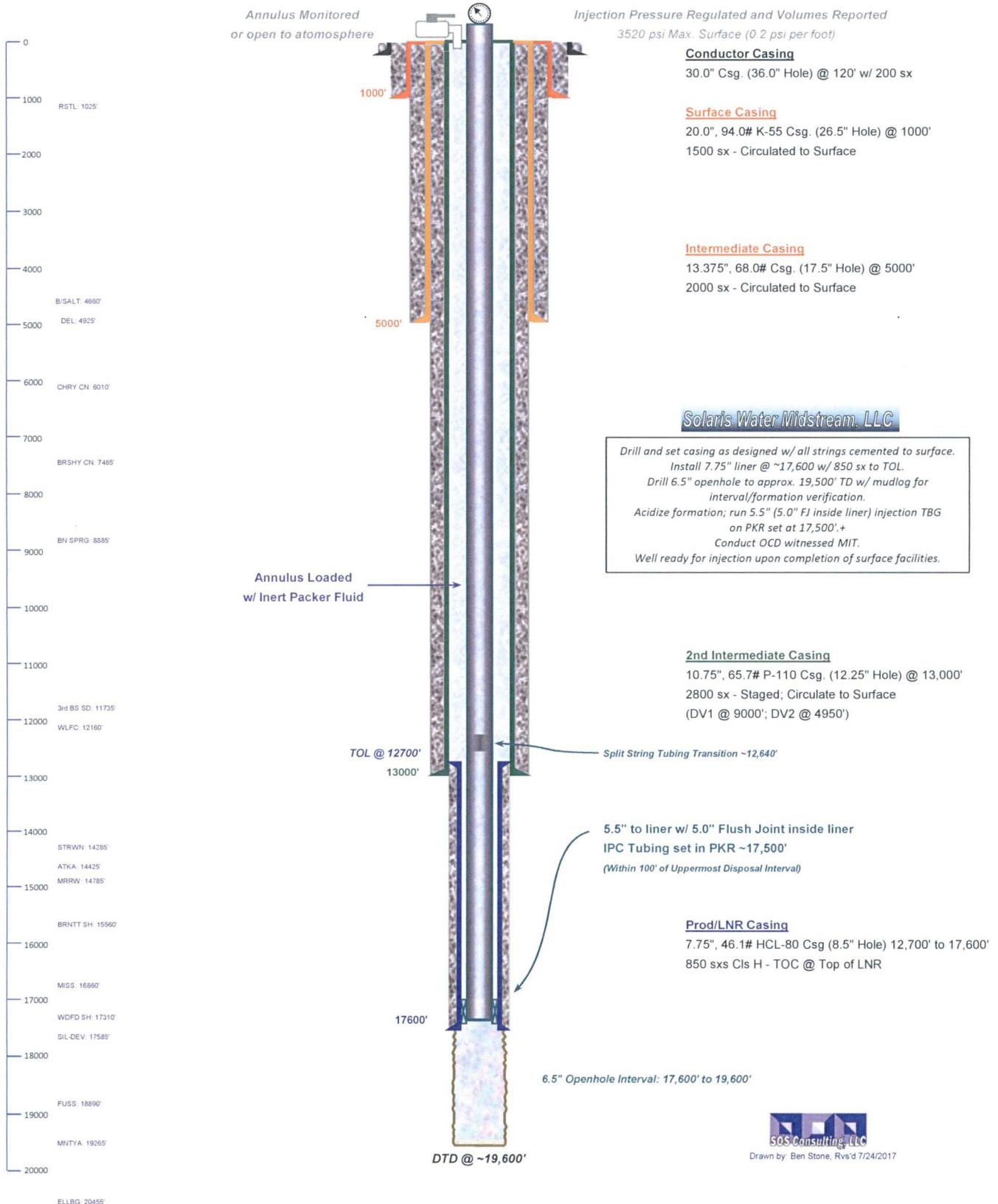
## Solaris Brininstool SWD Well No.1

API 30-025-xxxxx

2390' FNL & 615' FEL, SEC. 29-T25S-R33E  
LEA COUNTY, NEW MEXICO

SWD; Devonian (96101)

Spud Date: 9/01/2017  
SWD Config Dt: 9/25/2017



Drawn by Ben Stone, Rvs'd 7/24/2017

## C-108 - Item III

### Subject Well Data

Solaris Water Midstream inferred data from available regional well records.

#### ESTIMATED FORMATION TOPS

Rustler	1025'
B/Salt	4460'
Delaware Lime	4925'
Delaware Sand	4997'
Cherry Canyon	6010'
Brushy Canyon	7485'
Bone Spring	8885'
1 <sup>st</sup> BS LS	9060'
1 <sup>st</sup> BS SD	10045'
2 <sup>nd</sup> BS LS	10460'
2 <sup>nd</sup> BS SD	10935'
3 <sup>rd</sup> BS LS	11435'
3 <sup>rd</sup> BS SD	11735'
Wolfcamp	12560'
Strawn	14285'
Atoka	14425'
Morrow Lm	14785'
Morrow Sd	15035'
Lower Morrow	15260'
Barnett Shale	15560'
Mississippian	16860'
Miss LS	17035'
Woodford Shale	17310'
Siluro-Devonian	17585'
S-D Porosity	17685'
Silurian LS	18105'
Fusselman	18890'
Montoya	19265'
Simpson	19665'
McKee	19965'
Waddell	20265'
Ellenburger	20455'

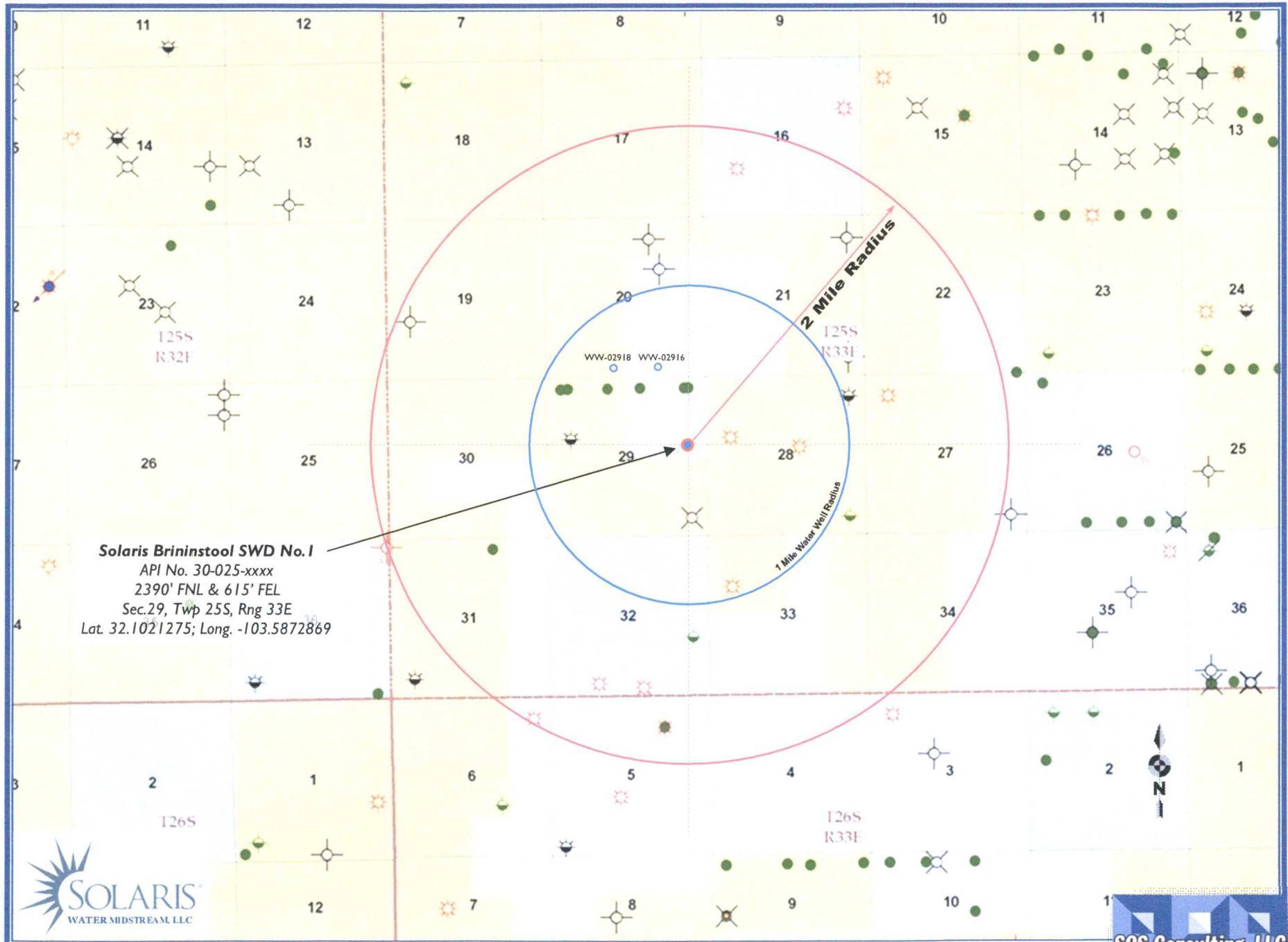
## **C-108 - Item VI**

Area of Review Well Data

**THERE ARE NO WELLS WHICH PENETRATE THE  
PROPOSED DEVONIAN FORMATION IN THE  
ONE-HALF MILE AREA of REVIEW**

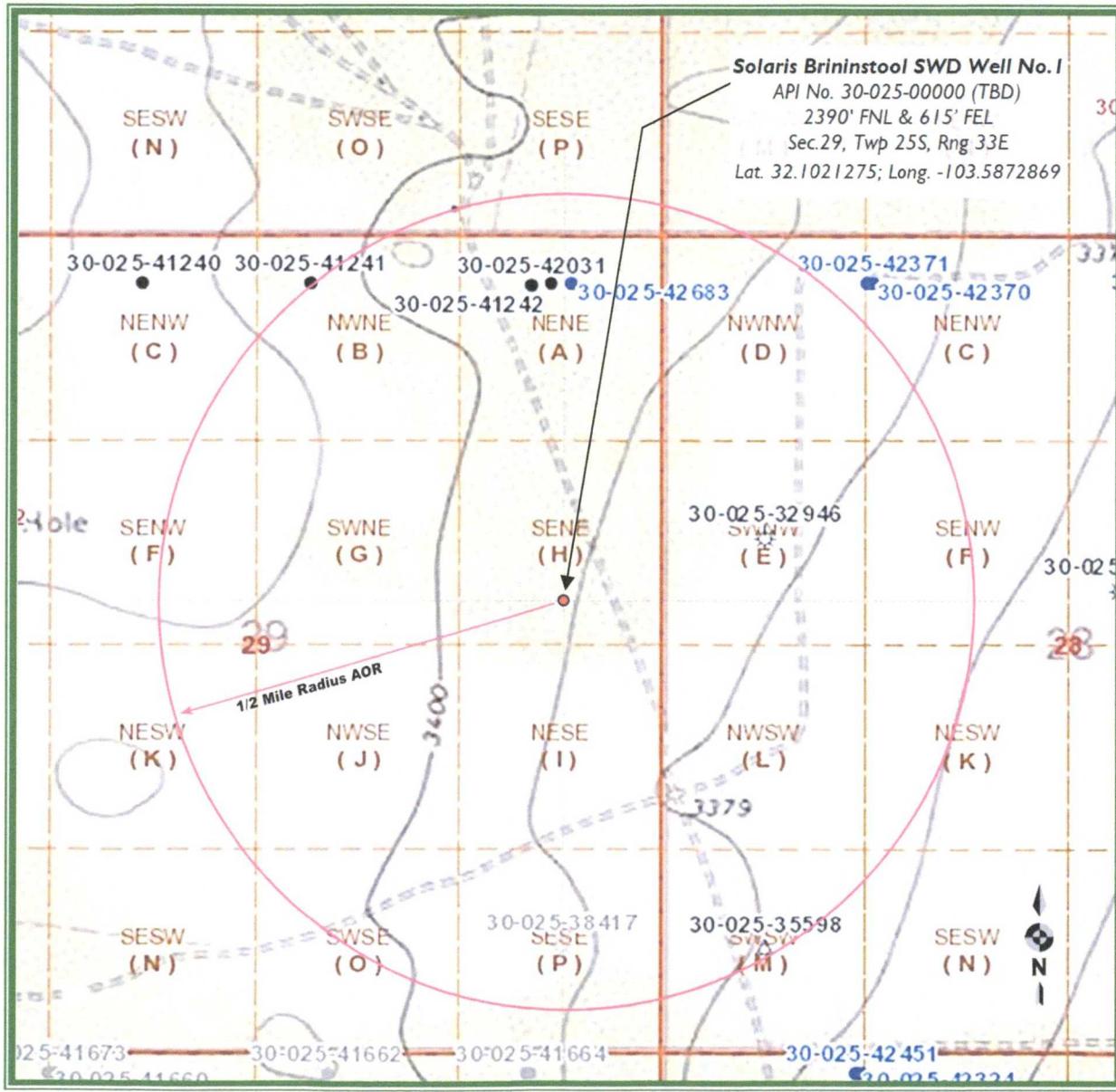
# Solaris Brininstool SWD No.1 - Area of Review / 2 Miles

(Attachment to NMOCD Form C-108 - Item V)

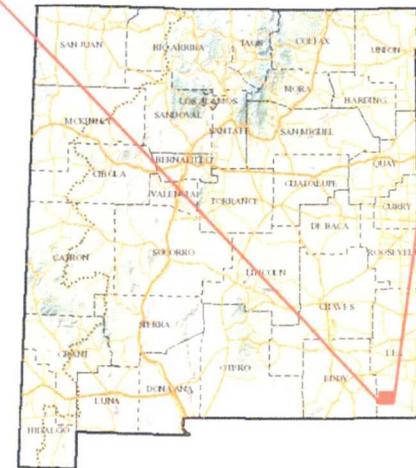
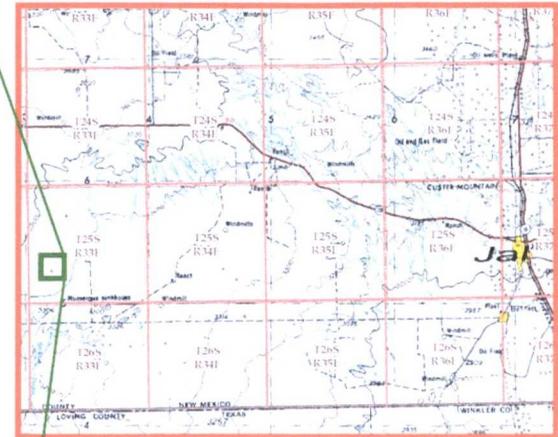


# Solaris Brininstool SWD Well No.1 - Area of Review / Overview Map

(Attachment to NMOCD Form C-108, Application for Authority to Inject.)



~23.5 miles West of Jal, NM



Lea County, New Mexico



## **C-108 ITEM X – LOGS and AVAILABLE TEST DATA**

**A Standard Suite of Logs will be run after  
drilling the well and submitted to the Division.**

## **C-108 ITEM VII – PROPOSED OPERATION**

### **Solaris Brininstool SWD No.1**

#### ***Commercial SWD Facility***

Upon approval of all permits for SWD, operations would begin within 30 days. Completion of the well operations will take approximately 6-8 weeks. Facility construction including installation of the tank battery, berms, plumbing and other and associated equipment would be occurring during the same interval but at a different location from the well. In any event, it is not expected for the construction phase of the project to last more than 60 days, depending on availability of contractors and equipment. The operator has negotiated a Surface Owner Agreement for the facility and well site.

#### ***Configure for Salt Water Disposal***

Prior to commencing any work, an NOI sundry(ies) will be submitted to configure the well for SWD and will detail the completion workover including all work otherwise described above, any change to the procedure noted herein and to perform mechanical integrity pressure test per OCD test procedures. (Notify NMOCD 24 hours prior.) The casing/tubing annulus will be monitored for communication with injection fluid or loss of casing integrity.

#### ***Operational Summary***

The SWD facility will not be fenced so that trucks may access for load disposal 24/7.

The well and injection equipment will be a closed system and equipped with pressure limiting devices and volume meters. The annulus, loaded with an inert, anti-corrosion packer fluid, will be monitored for pressure.

The tanks will be equipped with telemetry devices and visual alarms to alert the operator and customers of full tanks or an overflow situation.

Anticipated daily maximum volume is 25,000 bpd and an average of 15,000 bpd at a maximum surface injection pressure of 3520 psi (.2 psi/ft gradient – maximum pressure will be adjusted if the top of interval is modified after well logs are run).

Potential releases will be contained and cleaned up immediately. The operator shall repair or otherwise correct the situation within 48 hours before resuming operations. OCD will be notified within 24 hours of any release greater than 5 bbls. If required, remediation will start as soon as practicable. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as necessary and appropriate.

**C-108 ITEM VII – PRODUCED WATER ANALYSES**

**Item VII.4 – Water Analysis of Source Zone Water**

Delaware  
Bone Spring  
Morrow  
Wolfecamp

**Item VII.5 – Water Analysis of Disposal Zone Water**

Devonian

**Water Analyses follow this page.**

**C-108 Item VII.5 - Produced Water Data**  
**Solaris Water Midstream, LLC - Solaris Brininstool SWD No.1**

**SOURCE ZONE**

**DELAWARE**

<b>API No</b>	3002508367	<b>Lab ID</b>	
<b>Well Name</b>	BELL LAKE UNIT 007	<b>Sample ID</b>	4347
		<b>Sample No</b>	
<b>Location</b>	ULSTR 01 24 S 33 E 660 N 660 E	<b>Lat / Long</b>	32.25143 -103.51924
		<b>County</b>	Lea
<b>Operator (when sampled)</b>			
	Field SWD		Unit 1
<b>Sample Date</b>		<b>Analysis Date</b>	
	<b>Sample Source</b> UNKNOWN	<b>Depth (if known)</b>	
	<b>Water Typ</b>		
ph		alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	87686	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chloride_mgL	53920	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	391
iron_mgL		sulfate_mgL	749
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

*(Produced water data courtesy of NMT Octane NM WAIDS database.)*



**C-108 Item VII.5 - Produced Water Data  
Solaris Water Midstream, LLC - Solaris Brininstool SWD No.1**

**SOURCE ZONE**

**WOLFCAMP**

<b>API No</b>	3001520138	<b>Lab ID</b>	
<b>Well Name</b>	MAHUN STATE 001	<b>Sample ID</b>	5688
		<b>Sample No</b>	
<b>Location</b>	ULSTR 16 22 S 22 E 1800 N 1980 W	<b>Lat / Long</b>	32 39340 -104 70979
		<b>County</b>	Eddy
<b>Operator (when sampled)</b>			
	<b>Field</b>	ROCKY ARROYO	<b>Unit</b> F
<b>Sample Date</b>	5/17/1968	<b>Analysis Date</b>	
	<b>Sample Source</b>	DST	<b>Depth (if known)</b>
	<b>Water Typ</b>		
ph	8.6	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	35495	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chloride_mgL	19000	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	830
iron_mgL		sulfate_mgL	2500
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	
<b>Remarks</b>			

*(Produced water data courtesy of NMT Octane NM WAIDS database )*



**C-108 Item VII.5 - Produced Water Data  
Solaris Water Midstream, LLC - Solaris Brininstool SWD No.1**

**SOURCE ZONE**

**BONE SPRING**

<b>API No</b>	3002502429	<b>Lab ID</b>	
<b>Well Name</b>	LEA UNIT 005	<b>Sample ID</b>	4916
		<b>Sample No</b>	
<b>Location</b>	ULSTR 12 20 S 34 E 1980 S 1980 E	<b>Lat / Long</b>	32 58504 -103 51106
		<b>County</b>	Lea
<b>Operator (when sampled)</b>			
	Field LEA		Unit J
<b>Sample Date</b>		<b>Analysis Date</b>	
	<b>Sample Source</b> DST	<b>Depth (if known)</b>	
	<b>Water Type</b>		
ph		alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	202606	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chlornide_mgL	118100	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	5196
iron_mgL		sulfate_mgL	992
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

*(Produced water data courtesy of NMT Octane NM WAIDS database )*



**C-108 Item VII.5 - Produced Water Data  
Solaris Water Midstream, LLC - Solaris Brininstool SWD No.1**

**SOURCE ZONE**

**MORROW**

<b>API No</b>	3002520756	<b>Lab ID</b>	
<b>Well Name</b>	CUSTER MOUNTAIN UNIT 001	<b>Sample ID</b>	2434
		<b>Sample No</b>	
<b>Location</b>	ULSTR 09 24 S 35 E 1980 S 1980 W	<b>Lat / Long</b>	32 22999 -103 37431
		<b>County</b>	Lea
<b>Operator (when sampled)</b>			
	Field CINTA ROJA		Unit K
<b>Sample Date</b>		<b>Analysis Date</b>	
	<b>Sample Sourc</b> DST		<b>Depth (if known)</b>
	<b>Water Typ</b>		
ph		alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	282741	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chloride_mgL	176800	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	161
iron_mgL		sulfate_mgL	650
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	
<b>Remarks</b>			

*(Produced water data courtesy of NMT Octane NM WAIDS database )*



**C-108 Item VII.5 - Produced Water Data**  
**Solaris Water Midstream, LLC - Solaris Brininstool SWD No.1**

**DISPOSAL ZONE**

**DEVONIAN**

<b>API No.</b>	3002508483	<b>Lab ID</b>	
<b>Well Name</b>	BELL LAKE UNIT	<b>Sample ID</b>	5733
	006	<b>Sample No</b>	
<b>Location</b>	ULSTR 06 23 S 34 E	<b>Lat / Long</b>	32.32821 -103.50663
	660 S 1980 E	<b>County</b>	Lea
<b>Operator (when sampled)</b>			
	Field BELL LAKE NORTH	<b>Unit</b>	O
<b>Sample Date</b>		<b>Analysis Date</b>	
	<b>Sample Source</b> HEATER/TREATER	<b>Depth (if known)</b>	
	<b>Water Type</b>		
ph	7	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	71078	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chloride_mgL	42200	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	500
iron_mgL		sulfate_mgL	1000
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

*(Produced water data courtesy of NMT Octane NM WAIDS database.)*



**C-108 Item VII.5 - Produced Water Data**  
**Solaris Water Midstream, LLC - Solaris Brininstool SWD No.1**

**DISPOSAL ZONE**

**DEVONIAN**

<b>API No.</b>	3002521082	<b>Lab ID</b>	
<b>Well Name</b>	ANTELOPE RIDGE UNIT 003	<b>Sample ID</b>	5720
		<b>Sample No</b>	
<b>Location</b>	ULSTR 34 23 S 34 E 1980 S 1650 W	<b>Lat / Long</b>	32.25922 -103.46088
		<b>County</b>	Lea
<b>Operator (when sampled)</b>			
	<b>Field</b> ANTELOPE RIDGE	<b>Unit</b>	K
<b>Sample Date</b>	11/14/1967	<b>Analysis Date</b>	
	<b>Sample Source</b> UNKNOWN	<b>Depth (if known)</b>	
	<b>Water Type</b>		
ph	6.9	alkalinity_as_caco3_mgL	
ph_temp_F		hardness_as_caco3_mgL	
specificgravity		hardness_mgL	
specificgravity_temp_F		resistivity_ohm_cm	
tds_mgL	80187	resistivity_ohm_cm_temp_	
tds_mgL_180C		conductivity	
chloride_mgL	47900	conductivity_temp_F	
sodium_mgL		carbonate_mgL	
calcium_mgL		bicarbonate_mgL	476
iron_mgL		sulfate_mgL	900
barium_mgL		hydroxide_mgL	
magnesium_mgL		h2s_mgL	
potassium_mgL		co2_mgL	
strontium_mgL		o2_mgL	
manganese_mgL		anionremarks	

Remarks

*(Produced water data courtesy of NMT Octane NM WAIDS database.)*



## **C-108 – Item VIII**

### **Geologic Information**

The Devonian, Silurian and upper Ordovician all consist of carbonates including light colored dolomite and chert intervals interspersed with some tight limestone intervals. Several thick sections of porous dolomite capable of taking water are present within the subject formations in the area. Depth control data was inferred from deep wells to the north, south and east. If the base of Devonian and top of Silurian and/or Ordovician rocks come in as expected the well will only be drilled deep enough for adequate logging rathole.

At a proposed depth of 19,600' BGL (Below Ground Level) the well will TD approximately 2,000' below the estimated top of the Devonian. Mud logging through the interval will ensure the target interval remains in Devonian, Silurian and Ordovician. Once Devonian is determined, the casing shoe depth will be set at an approximate maximum upper depth of 17,600' BGL. Injection will occur through the resulting openhole interval.

The Devonian is overlain by the Woodford Shale and Ordovician (Montoya) rock is underlain by the Middle and Lower Ordovician; Simpson, McKee and Ellenburger.

Fresh water in the area is generally available from the Santa Rosa formation. State Engineer's records show water wells in the area with a depth to groundwater of 90 to 150 feet.

There are two water wells located within one mile of the proposed SWD. Water analyses from both are included in this application.

# C-108 ITEM XI – WATER WELLS IN AOR

The NM Office of the State Engineer database indicates there are 2 domestic water wells located within one mile of the proposed well. Sample analyses for both wells are included.



## New Mexico Office of the State Engineer Active & Inactive Points of Diversion (with Ownership Information)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	(quarters are 1=NW 2=NE 3=SW 4=SE)				X	Y
										64	16	4	Sec		
C 02916	STK	40	3	BRININSTOOL XL RANCH LLC	LE	C 02916			4 3 4	20	25S	33E	632924	3553457	
C 02918	STK	40	3	BRININSTOOL XL RANCH LLC	LE	C 02918			4 4 3	20	25S	33E	632521	3553452	

Record Count 2

**PLSS Search**

Section(s) 20 21 28, 29 32 33  
Township 25S Range 33E

Sorted by File Number

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties expressed or implied concerning the accuracy completeness reliability usability or suitability for any particular purpose of the data

# C-108 ITEM XI – WATER WELLS IN AOR

## Depth to Groundwater

The NM Office of the State Engineer database indicates there are no fresh water wells within one mile of the proposed SWD. Average depth of ground water in the area is shown to be 142 feet.



### 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 Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Range	X	Y	Depth Well	Depth Water	Water Column
C 02312		LE		1	2	1	05	25S	33E	632241	3559687*	150	90	60
C 02313		LE		2	3	3	26	25S	33E	636971	3552098*	150	110	40
C 02373 CLW317846	O	LE		2	1	1	13	25S	33E	638518	3556544*	625	185	440
C 02373 S		LE		1	2	1	13	25S	33E	638721	3556549*	625	185	440

Average Depth to Water 142 feet  
Minimum Depth 90 feet  
Maximum Depth 185 feet

Record Count 4

PLSS Search:

Township 25S Range 33E

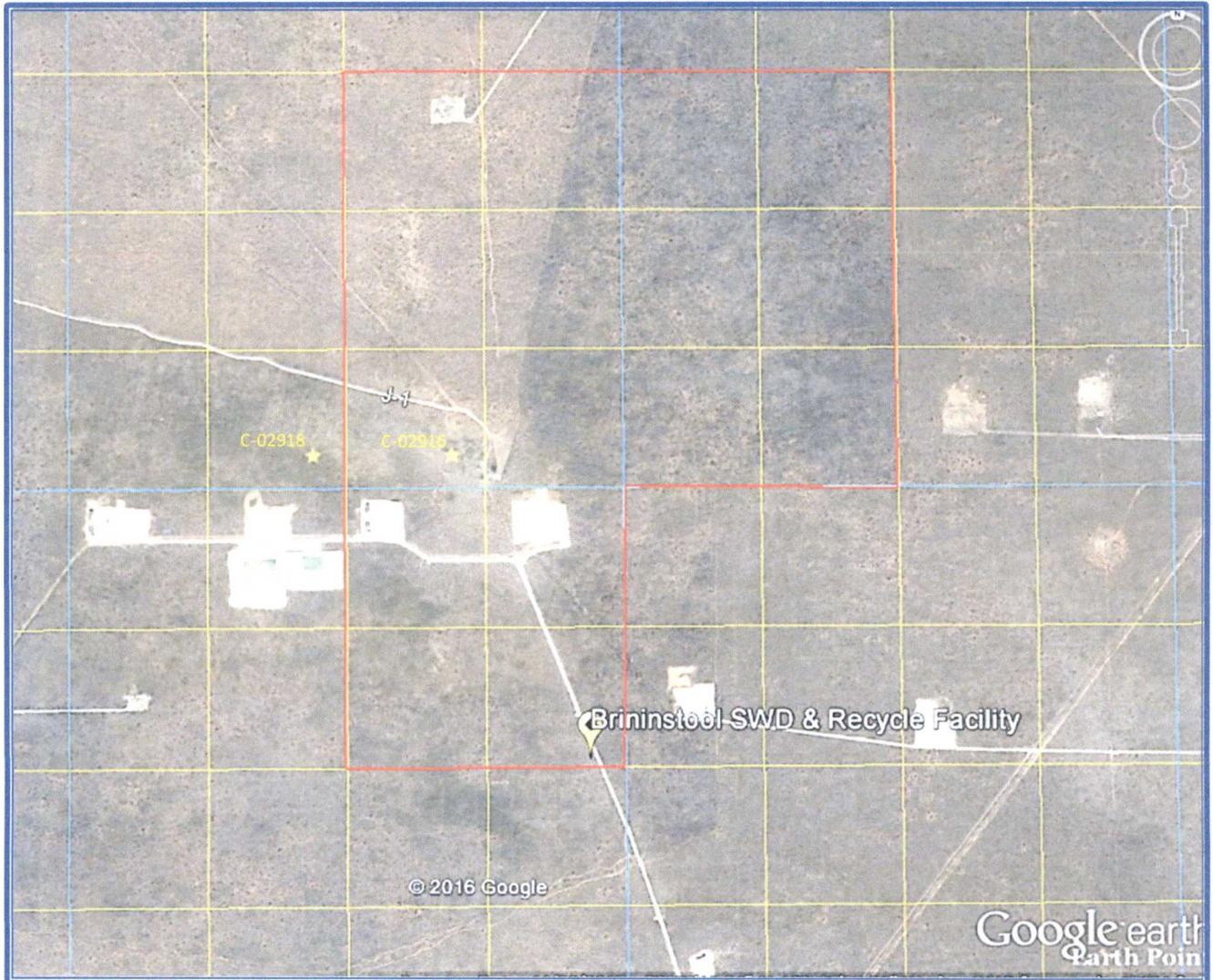
\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties expressed or implied concerning the accuracy completeness reliability usability or suitability for any particular purpose of the data

## C-108 Item XI

### Water Wells Within One Mile

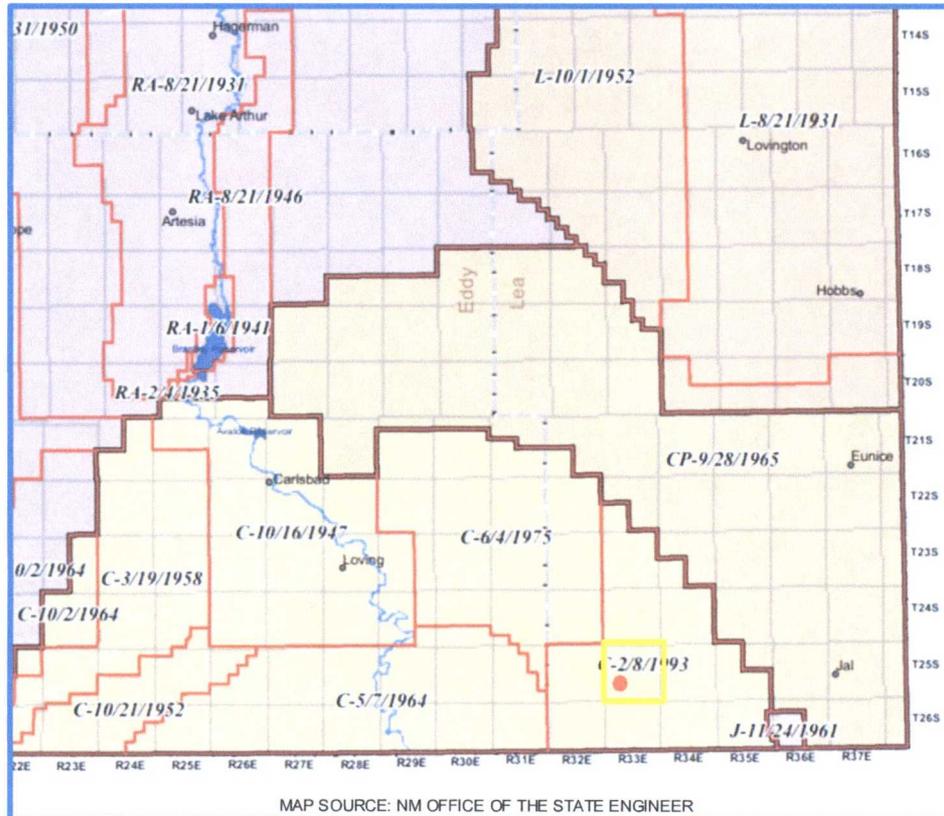
*2 wells are shown to be within one mile of the proposed SWD*



Samples were obtained on both wells. The analyses follow this page.

## C-108 - Item XI

### Groundwater Basins - Water Column / Depth to Groundwater



The subject well is located within the Carlsbad Basin one township east of the Lower Pecos Basin (not defined in the above map).

Fresh water in the area is generally available from the Santa Rosa or Cenozoic alluvial deposits of the Carlsbad Basin. State Engineer's records show water wells in 25S-33E with an average depth to water at 142 feet.

There are two (2) water wells located within one mile of the proposed SWD. Analysis for both are included.

April 11, 2017

KATY WELCH

SOLARIS WATER MIDSTREAM, LLC

701 TRADEWINDS BLVD., SUITE C

MIDLAND, TX 79706

RE: BRINNINSTOOL PENN PLACE

Enclosed are the results of analyses for samples received by the laboratory on 03/27/17 13:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

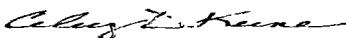
**Analytical Results For:**SOLARIS WATER MIDSTREAM, LLC  
701 TRADEWINDS BLVD., SUITE C  
MIDLAND TX, 79706Project: BRINNINSTOOL PENN PLACE  
Project Number: NOT GIVEN  
Project Manager: KATY WELCH  
Fax To: NAReported:  
11-Apr-17 10:48

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PENN PLACE 1	H700792-01	Water	27-Mar-17 10:30	27-Mar-17 13:40
PENN PLACE 2	H700792-02	Water	27-Mar-17 10:30	27-Mar-17 13:40

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SOLARIS WATER MIDSTREAM, LLC 701 TRADEWINDS BLVD., SUITE C MIDLAND TX, 79706	Project: BRINNINSTOOL PENN PLACE Project Number: NOT GIVEN Project Manager: KATY WELCH Fax To: NA	Reported: 11-Apr-17 10:48
--	--	------------------------------

**PENN PLACE 1**  
**H700792-01 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	364		5.00	mg/L	1	7022210	AC	04-Apr-17	310 1	
Alkalinity, Carbonate	<1.00		1.00	mg/L	1	7022210	AC	04-Apr-17	310 1	
Chloride*	20.0		4.00	mg/L	1	7032301	AC	03-Apr-17	4500-Cl-B	
Conductivity*	809		1.00	uS/cm	1	7040708	AC	07-Apr-17	120 1	
pH*	7.81		0.100	pH Units	1	7032804	HM	28-Mar-17	150 1	
Sulfate*	114		25.0	mg/L	2.5	7032807	HM	27-Mar-17	375 4	
TDS*	522		5.00	mg/L	1	7032305	AC	03-Apr-17	160 1	
Alkalinity, Total*	284		4.00	mg/L	1	7022210	AC	04-Apr-17	310 1	

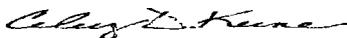
**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	26.3		0.100	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	
Magnesium*	27.9		0.100	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	
Potassium*	4.37		1.00	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	
Sodium*	102		2.00	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SOLARIS WATER MIDSTREAM, LLC  
 701 TRADEWINDS BLVD., SUITE C  
 MIDLAND TX, 79706

 Project: BRINNINSTOOL PENN PLACE  
 Project Number: NOT GIVEN  
 Project Manager: KATY WELCH  
 Fax To: NA

 Reported:  
 11-Apr-17 10:48

**PENN PLACE 2**  
**H700792-02 (Water)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories**
**Inorganic Compounds**

Alkalinity, Bicarbonate	361		5 00	mg/L	1	7022210	AC	04-Apr-17	310 1	
Alkalinity, Carbonate	<1 00		1 00	mg/L	1	7022210	AC	04-Apr-17	310.1	
Chloride*	20.0		4 00	mg/L	1	7032301	AC	03-Apr-17	4500-Cl-B	
Conductivity*	803		1 00	uS/cm	1	7040708	AC	07-Apr-17	120 1	
pH*	7.68		0 100	pH Units	1	7032804	HM	28-Mar-17	150 1	
Sulfate*	118		25 0	mg/L	2 5	7032807	HM	27-Mar-17	375 4	
TDS*	486		5 00	mg/L	1	7032305	AC	03-Apr-17	160 1	
Alkalinity, Total*	296		4.00	mg/L	1	7022210	AC	04-Apr-17	310 1	

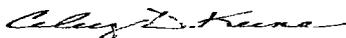
**Green Analytical Laboratories**
**Total Recoverable Metals by ICP (E200.7)**

Calcium*	28.2		0 100	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	
Magnesium*	28.1		0 100	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	
Potassium*	4.49		1 00	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	
Sodium*	96.8		2 00	mg/L	1	B704031	JLM	05-Apr-17	EPA200 7	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SOLARIS WATER MIDSTREAM, LLC  
 701 TRADEWINDS BLVD., SUITE C  
 MIDLAND TX, 79706

 Project: BRINNINSTOOL PENN PLACE  
 Project Number: NOT GIVEN  
 Project Manager: KATY WELCH  
 Fax To: NA

 Reported:  
 11-Apr-17 10:48

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 7022210 - General Prep - Wet Chem**

Blank (7022210-BLK1) Prepared & Analyzed: 22-Feb-17										
Alkalinity, Carbonate	ND	1 00	mg/L							
Alkalinity, Bicarbonate	5 00	5 00	mg/L							
Alkalinity, Total	4 00	4 00	mg/L							

LCS (7022210-BS1) Prepared & Analyzed: 22-Feb-17										
Alkalinity, Carbonate	ND	1 00	mg/L				80-120			
Alkalinity, Bicarbonate	127	5 00	mg/L				80-120			
Alkalinity, Total	104	4 00	mg/L	100		104	80-120			

LCS Dup (7022210-BSD1) Prepared & Analyzed: 22-Feb-17										
Alkalinity, Carbonate	ND	1 00	mg/L				80-120		20	
Alkalinity, Bicarbonate	127	5 00	mg/L				80-120	0 00	20	
Alkalinity, Total	104	4 00	mg/L	100		104	80-120	0 00	20	

**Batch 7032301 - General Prep - Wet Chem**

Blank (7032301-BLK1) Prepared & Analyzed: 23-Mar-17										
Chloride	ND	4 00	mg/L							

LCS (7032301-BS1) Prepared & Analyzed: 23-Mar-17										
Chloride	108	4 00	mg/L	100		108	80-120			

LCS Dup (7032301-BSD1) Prepared & Analyzed: 23-Mar-17										
Chloride	108	4 00	mg/L	100		108	80-120	0 00	20	

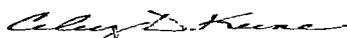
**Batch 7032305 - Filtration**

Blank (7032305-BLK1) Prepared 23-Mar-17 Analyzed 24-Mar-17										
TDS	ND	5 00	mg/L							

Cardinal Laboratories

\* = Accredited Analyte

PLEASE NOTE Liability and Damages Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SOLARIS WATER MIDSTREAM, LLC  
 701 TRADEWINDS BLVD., SUITE C  
 MIDLAND TX, 79706

 Project: BRINNINSTOOL PENN PLACE  
 Project Number: NOT GIVEN  
 Project Manager: KATY WELCH  
 Fax To: NA

 Reported:  
 11-Apr-17 10:48

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 7032305 - Filtration**
**LCS (7032305-BS1)**

Prepared: 23-Mar-17 Analyzed: 24-Mar-17

TDS 233 mg/L 240 97.1 80-120

**Duplicate (7032305-DUP1)**

Source: H700743-02

Prepared: 23-Mar-17 Analyzed: 28-Mar-17

TDS 554 5.00 mg/L 540 2.56 20

**Batch 7032804 - General Prep - Wet Chem**
**LCS (7032804-BS1)**

Prepared &amp; Analyzed: 28-Mar-17

pH 7.03 pH Units 7.00 100 90-110

**Duplicate (7032804-DUP1)**

Source: H700778-10

Prepared &amp; Analyzed: 28-Mar-17

pH 7.41 0.100 pH Units 7.45 0.538 20

**Batch 7032807 - General Prep - Wet Chem**
**Blank (7032807-BLK1)**

Prepared &amp; Analyzed: 27-Mar-17

Sulfate ND 10.0 mg/L

**LCS (7032807-BS1)**

Prepared &amp; Analyzed: 27-Mar-17

Sulfate 22.2 10.0 mg/L 20.0 111 80-120

**LCS Dup (7032807-BSD1)**

Prepared &amp; Analyzed: 27-Mar-17

Sulfate 22.9 10.0 mg/L 20.0 114 80-120 3.11 20

**Batch 7040708 - General Prep - Wet Chem**
**LCS (7040708-BS1)**

Prepared &amp; Analyzed: 07-Apr-17

Conductivity 519 uS/cm 500 104 80-120

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SOLARIS WATER MIDSTREAM, LLC  
 701 TRADEWINDS BLVD., SUITE C  
 MIDLAND TX, 79706

 Project: BRINNINSTOOL PENN PLACE  
 Project Number: NOT GIVEN  
 Project Manager: KATY WELCH  
 Fax To: NA

 Reported:  
 11-Apr-17 10:48

**Inorganic Compounds - Quality Control**
**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

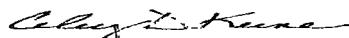
**Batch 7040708 - General Prep - Wet Chem**
**Duplicate (7040708-DUP1)**
**Source: H700792-01**
**Prepared & Analyzed: 07-Apr-17**

Conductivity	808	1 00	uS/cm		809			0 124	20	
--------------	-----	------	-------	--	-----	--	--	-------	----	--

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE Liability and Damages Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SOLARIS WATER MIDSTREAM, LLC  
 701 TRADEWINDS BLVD., SUITE C  
 MIDLAND TX, 79706

 Project: BRINNINSTOOL PENN PLACE  
 Project Number: NOT GIVEN  
 Project Manager: KATY WELCH  
 Fax To: NA

 Reported:  
 11-Apr-17 10:48

**Total Recoverable Metals by ICP (E200.7) - Quality Control**  
**Green Analytical Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	-----------	-------------	-----	-----------	-------

**Batch B704031 - Total Rec. 200.7/200.8/200.2**
**Blank (B704031-BLK1)**

Prepared &amp; Analyzed. 05-Apr-17

Potassium	ND	1 00	mg/L							
Calcium	ND	0 100	mg/L							
Sodium	1 03	1 00	mg/L							B3
Magnesium	ND	0 100	mg/L							

**LCS (B704031-BS1)**

Prepared &amp; Analyzed 05-Apr-17

Magnesium	19 8	0 100	mg/L	20 0		99 1	85-115			
Potassium	7 73	1 00	mg/L	8 00		96 7	85-115			
Calcium	3 85	0 100	mg/L	4 00		96 4	85-115			
Sodium	7 12	1 00	mg/L	6 48		110	85-115			

**LCS Dup (B704031-BSD1)**

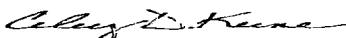
Prepared &amp; Analyzed 05-Apr-17

Magnesium	19 5	0 100	mg/L	20 0		97 7	85-115	1 37	20	
Potassium	7 66	1 00	mg/L	8 00		95 7	85-115	0 978	20	
Sodium	6 94	1 00	mg/L	6 48		107	85-115	2 60	20	
Calcium	3 80	0.100	mg/L	4 00		95 1	85-115	1 34	20	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE Liability and Damages Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

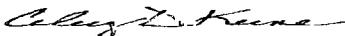
- B3 Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Solaris Water Midstream, LLC</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																				
Project Manager: <u>Katy Welch</u>				P.O. #:				Cation / Anion																				
Address: <u>701 Tradewinds Blvd. Suite C</u>				Company: <u>Solaris -</u>																								
City: <u>Midland</u>		State: <u>TX</u> Zip: <u>79706</u>		Attn: <u>Katy Welch</u>																								
Phone #: <u>(432) 889-1177</u>		Fax #:		Address: <u>701 Tradewinds Blvd. Suite C</u>																								
Project #: <u>Brininstool</u>		Project Owner:		City: <u>MIDLAND</u>																								
Project Name:				State: <u>TX</u> Zip: <u>79706</u>																								
Project Location: <u>Brininstool Penn Place</u>				Phone #: <u>(432) 889-1177</u>																								
Sampler Name: <u>Katy Welch</u>				Fax #:																								
FOR LAB USE ONLY																												
Lab I.D.		Sample I.D.		(G/RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING															
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE		TIME											
<u>H700792-</u>		<u>Penn Place 1</u>				<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		<u>3/27</u>		<u>10:30</u>													
<u>01</u>		<u>1</u>				<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>		<u>1</u>		<u>1</u>													
<u>02</u>		<u>2</u>																										

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client or subsidiaries. States or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <u>Katy Welch</u>		Date: <u>3/27/17</u>		Received By: <u>[Signature]</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
		Time: <u>1:40p</u>				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date:		Received By:		REMARKS:  <u>Katy. Welch @ Solaris.midstream.com</u>			
		Time:							
Delivered By: (Circle One) Sampler - UPS - Bus - Other: <u>-1.1°C</u>				Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No		CHECKED BY: (initials) <u>cm</u>			

**C-108 ITEM XII – GEOLOGIC AFFIRMATION**

We have examined available geologic and engineering data and have found no evidence of open faults or other hydrologic connection between the disposal interval and any underground sources of drinking water.



---

Ben Stone, Partner  
SOS Consulting, LLC

Project: Solaris Water Midstream, LLC  
Solaris Brininstool SWD No.1  
Reviewed 6/30/2017

# **C-108 ITEM XIII – PROOF OF NOTIFICATION**

## **IDENTIFICATION AND NOTIFICATION OF INTERESTED PARTIES**

### **Exhibits for Section**

Leasehold Plat

List of Interested Parties

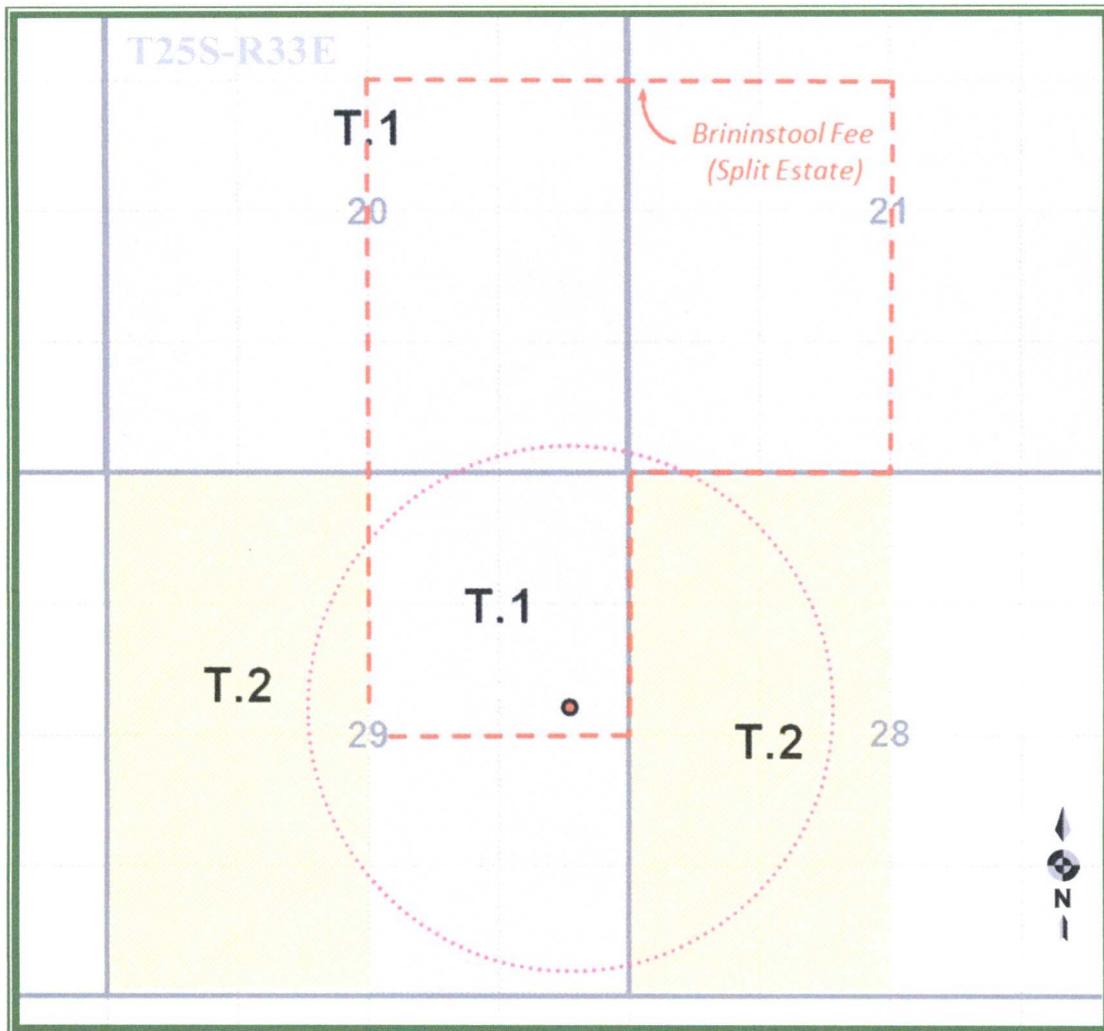
Notification Letter to Interested Parties

Proof of Certified Mailing

Published Legal Notice

# Solaris Brininstool SWD Well No.1 - Leasehold Plat

(Attachment to NMOCD Form C-108, Application for Authority to Inject.)



## LEGEND

T.1 – NMNM-026394 – EOG Resources, Inc.

*(Split Estate: Private Surface – Brininstool Ranch)*

T.2 – NMNM-043562 – Magnum Hunter

**C-108 ITEM XIII – PROOF OF NOTIFICATION  
INTERESTED PARTIES LIST**

**SURFACE OWNER**

- 1 BRININSTOOL XL RANCH, LLC  
P.O. Box 940  
Jal, New Mexico 88252

**MINERALS LESSEES (All Notified via USPS Certified Mail)**

**BLM Lease NMNM-026394; (T.1 on plat.)**

***Lessee***

- 2 EOG RESOURCES, INC.  
5509 Champions Drive  
Midland, TX 79706

***Operator***

- 3 CIMEREX ENERGY COMPANY  
600 N. Marienfeld Street, Ste.600  
Midland, TX 79701

**BLM Lease NMNM-043562; (T.2 on plat.)**

***Lessee***

- 4 MAGNUM HUNTER RESOURCES, INC.  
909 Lake Carolyn Pkwy, Suite 600  
Irving, TX 75039

***Operator***

CIMEREX ENERGY COMPANY  
600 N. Marienfeld Street, Ste.600  
Midland, TX 79701

**MINERALS OWNER (Notified via USPS Certified Mail)**

- 5 U.S. DEPARTMENT OF INTERIOR  
Bureau of Land Management  
Oil & Gas Division  
620 E. Greene St.  
Carlsbad, NM 88220

**REGULATORY**

NEW MEXICO OIL CONSERVATION DIVISION (FedEx'ed original and copy)  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

NEW MEXICO OIL CONSERVATION DIVISION (FedEx'ed copy)  
1625 S. French Drive  
Hobbs, NM 88240



July 3, 2017

**NOTIFICATION TO INTERESTED PARTIES**  
**via U.S. Certified Mail – Return Receipt Requested**

To Whom It May Concern:

Solaris Water Midstream, LLC, Midland, Texas, has made application to the New Mexico Oil Conservation Division to drill and complete for salt water disposal the Solaris Brininstool SWD Well No.1. The proposed commercial operation will be for produced water disposal from area operators. As indicated in the notice below, the well is located in Section 29, Township 25 South, Range 33 East in Lea County, New Mexico.

The published notice states that the interval will be from 17,600 feet to 19,600 feet.

Following is the notice published in the Hobbs News-Sun, Hobbs, New Mexico on or about July 5, 2017.

**LEGAL NOTICE**

Solaris Water Midstream, LLC, 701 Tradewinds Blvd., Suite C, Midland, TX 79706, is filing Form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Solaris Brininstool SWD No.1, is located 2390' FNL and 615' FEL, Section 29, Township 25 South, Range 33 East, Lea County, New Mexico. Produced water from area production will be commercially disposed into the Devonian, Silurian and Ordovician formations at a depth of 17,600' to 19,600' at a maximum surface pressure of 3520 psi and a rate limited only by such pressure. The proposed SWD well is located approximately 23.5 miles west of Jal, NM.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 St. Francis Dr., Santa Fe, NM 87505, (505)476-3460 within 15 days of the date of this notice. Additional information may be obtained from the applicant's agent, SOS Consulting, LLC, (903)488-9850 or, email [info@sosconsulting.us](mailto:info@sosconsulting.us).

***You have been identified as a party who may be interested as an offset lessee or operator.***

You are entitled to a full copy of the application. A full copy in PDF format on a mini-CD will be arriving within a few days of this notice. If you do not receive it, please call or email SOS Consulting, LLC at 903-488-9850, info@sosconsulting.us, and a copy will be expedited to you and may also be sent via email if preferred.

Thank you for your attention in this matter.

Best regards,

A handwritten signature in black ink, appearing to read "Ben Stone". The signature is fluid and cursive, with the first name "Ben" and last name "Stone" clearly distinguishable.

Ben Stone, SOS Consulting, LLC  
Agent for Solaris Water Midstream, LLC

Cc. Application File

# C-108 - Item XIV

## Proof of Notice (Certified Mail Receipts)

7015 0640 0007 9482 6438

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Certified Mail Fee \$  
 Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
**Total Postage and Fees** \$ 6.57

**Sent To**  
 Street and City, State  
**BRININSTOOL XL RANCH, LLC**  
 P.O. Box 940  
 Jal, New Mexico 88252

PS Form 3800, October 2012

*Postmark Here*  
 JUL 03 2017

7015 0640 0007 9482 6445

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Certified Mail Fee \$  
 Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
**Total Postage and Fees** \$ 6.59

**Sent To**  
 Street and City, State  
**EOG RESOURCES, INC.**  
 5509 Champions Drive  
 Midland, TX 79706

PS Form 3800, October 2012

*Postmark Here*  
 JUL 03 2017

7015 0640 0007 9482 64

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Certified Mail Fee \$  
 Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
**Total Postage and Fees** \$ 6.59

**Sent To**  
 Street and City, State  
**CIMEREX ENERGY COMPANY**  
 600 N. Marienfeld Street, Ste.600  
 Midland, TX 79701

PS Form 3800, October 2012

*Postmark Here*  
 JUL 03 2017

7015 0640 0007 9482 64

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Certified Mail Fee \$  
 Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
**Total Postage and Fees** \$ 6.59

**Sent To**  
 Street and City, State  
**MAGNUM HUNTER RESRCS, INC.**  
 909 Lake Carolyn Pkwy, Suite 600  
 Irving, TX 75039

PS Form 3800, October 2012

*Postmark Here*  
 JUL 03 2017

7015 0640 0007 9482 64

**U.S. Postal Service™**  
**CERTIFIED MAIL® RECEIPT**  
*Domestic Mail Only*

For delivery information, visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Certified Mail Fee \$  
 Extra Services & Fees (check box, add fee as appropriate)  
 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
**Total Postage and Fees** \$ 6.59

**Sent To**  
 Street and City, State  
**Bureau of Land Management**  
 Carlsbad Field Office - O&G Division  
 620 E. Greene St.  
 Carlsbad, NM 88220

PS Form 3800, October 2012

*Postmark Here*  
 JUL 03 2017

## **C-108 - Item XIV**

### **Proof of Notice – Legal Notice Newspaper of General Circulation**

#### **LEGAL NOTICE July 5, 2017**

Solans Water Midstream, LLC, 701 Tradewinds Blvd, Suite C, Midland, TX 79706, is filing Form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Solaris Brininstool SWD No.1, is located 2390' FNL and 615' FEL, Section 29, Township 25 South, Range 33 East, Lea County, New Mexico. Produced water from area production will be commercially disposed into the Devonian, Silurian and Ordovician formations at a depth of 17,600' to 19,600' at a maximum surface pressure of 3520 psi and a rate limited only by such pressure. The proposed SWD well is located approximately 23.5 miles west of Jal, NM.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 St. Francis Dr., Santa Fe, NM 87505, (505)476-3460 within 15 days of the date of this notice. Additional information may be obtained from the applicant's agent, SOS Consulting, LLC, (903)488-9850 or email [info@sosconsulting.us](mailto:info@sosconsulting.us)  
**#31931**

The above is the "Proof Copy" sent from the Hobbs News-Sun.  
The affidavit of publication will be forwarded as soon as it is received.

# Affidavit of Publication

STATE OF NEW MEXICO  
COUNTY OF LEA

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

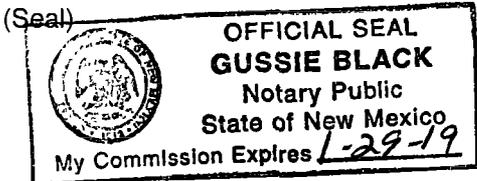
Beginning with the issue dated  
July 06, 2017  
and ending with the issue dated  
July 06, 2017.

  
\_\_\_\_\_  
Editor

Sworn and subscribed to before me this  
6th day of July 2017

  
\_\_\_\_\_  
Business Manager

My commission expires  
January 29, 2019



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

## LEGAL NOTICE July 6, 2017

Solaris Water Midstream, LLC, 701 Tradewinds Blvd, Suite C, Midland, TX 79706, is filing Form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Solaris Brinnstool SWD No 1, is located 2390' FNL and 615' FEL, Section 29, Township 25 South, Range 33 East, Lea County, New Mexico. Produced water from area production will be commercially disposed into the Devonian, Silurian and Ordovician formations at a depth of 17,600' to 19,600' at a maximum surface pressure of 3520 psi and a rate limited only by such pressure. The proposed SWD well is located approximately 23.5 miles west of Jal, NM.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 St Francis Dr, Santa Fe, NM 87505, (505)476-3460 within 15 days of the date of this notice. Additional information may be obtained from the applicant's agent, SOS Consulting, LLC, (903)488-9850 or, email info@sosconsulting.us #31907

67104420

00196078

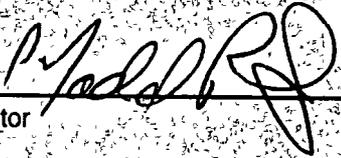
BEN STONE  
SOS CONSULTING, LLC.  
P.O. BOX 300  
COMO, TX 75431

# Affidavit of Publication

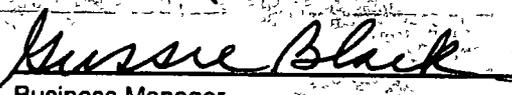
STATE OF NEW MEXICO  
COUNTY OF LEA

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

Beginning with the issue dated  
July 06, 2017  
and ending with the issue dated  
July 06, 2017.

  
\_\_\_\_\_  
Editor

Sworn and subscribed to before me this  
6th day of July 2017.

  
\_\_\_\_\_  
Business Manager

My commission expires  
January 29, 2019

(Seal)



OFFICIAL SEAL  
GUSSIE BLACK  
Notary Public  
State of New Mexico  
My Commission Expires 1-29-19

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

## LEGAL NOTICE July 6, 2017

Solaris Water Midstream, LLC, 701 Tradewinds Blvd, Suite C, Midland, TX 79706, is filing Form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Solaris Brinnstool SWD No.1, is located 2390' FNL and 615' FEL, Section 29, Township 26 South, Range 33 East, Lea County, New Mexico. Produced water from area production will be commercially disposed into the Devonian, Silurian and Ordovician formations at a depth of 17,600 to 19,600' at a maximum surface pressure of 3520 psi and a rate limited only by such pressure. The proposed SWD well is located approximately 23.5 miles west of Jal, NM.

Interested parties wishing to object to the proposed application must file with the New Mexico Oil Conservation Division, 1220 St. Francis Dr., Santa Fe, NM 87505, (505)478-3460 within 15 days of the date of this notice. Additional information may be obtained from the applicant's agent, SOS Consulting, LLC, (903)488-9850 or, email info@sosconsulting.us, #31907.

67104420

00196078

BEN STONE  
SOS CONSULTING, LLC.  
P.O. BOX 300  
COMO, TX 75431

## McMillan, Michael, EMNRD

**From:** ben@sosconsulting.us  
**Sent:** Monday, July 24, 2017 1:49 PM  
**To:** McMillan, Michael, EMNRD  
**Subject:** RE: Solaris Midstream LLC Solaris Brinninstool SWD Well No.1  
**Attachments:** Schematic\_PROPOSED\_SolarisBrin\_Rvsd\_20170724.pdf

Mike,

Here's a revised WBD w/ their split tubing configuration. They'd run standard 5.5" down to about 1 stand above the top of liner. Then, inside the liner and set in tubing it would be 5.0" flush joint. They said there's an overshot available so there should be no concerns about retrievability.

Thanks for your help - let me know if you have any other questions.

Thanks,  
Ben



[Visit us on the web at www.sosconsulting.us!](http://www.sosconsulting.us/)

This electronic message and all attachments are confidential, and are intended only for the use of the individual to whom it is addressed. Information may also be legally privileged. This transmission is sent in trust for the sole purpose of delivery to the intended recipient. If you have received this transmission in error, you are hereby notified that any use, dissemination, distribution or reproduction of this transmission is strictly prohibited and may be unlawful. If you are not the intended recipient, you must delete this message and any copy of it (in any form) without disclosing it. If this message has been sent to you in error, please notify the sender by replying to this transmission or by calling SOS Consulting, LLC 903-488-9850. Unless expressly stated in this e-mail, nothing in this message should be construed as a digital or electronic signature. Thank you for your cooperation.

----- Original Message -----

**Subject:** RE: Solaris Midstream LLC Solaris Brinninstool SWD Well No.1  
**From:** "McMillan, Michael, EMNRD" <Michael.McMillan@state.nm.us>  
**Date:** 7/24/17 2:41 pm  
**To:** "ben@sosconsulting.us" <ben@sosconsulting.us>

Is this for the entire tubing?

**From:** McMillan, Michael, EMNRD  
**Sent:** Monday, July 24, 2017 1:39 PM  
**To:** 'ben@sosconsulting.us' <ben@sosconsulting.us>  
**Subject:** RE: Solaris Midstream LLC Solaris Brinninstool SWD Well No.1

You are right, and I am WRONG!!!!!!!!!!!!!!!!!!!!!!-spoke with Will



C-108 Review Checklist: Received 7/10/2017 Add. Request: 7/10/2017, 7/11/2017 Reply Date: \_\_\_\_\_ Suspended: \_\_\_\_\_ [Ver 15]

ORDER TYPE: WFX / PMX / SWD Number: \_\_\_\_\_ Order Date: \_\_\_\_\_ Legacy Permits/Orders: \_\_\_\_\_

Well No. 1 Well Name(s): SOLARIS Brinninstod SWD

API: 30-0 25-Pending Spud Date: TBD New or Old: N (UIC Class II Primacy 03/07/1982)

Footages: 2390 FEET 615 FEET Lot or Unit H Sec 29 Tsp 25S Rge 33E County LEC

General Location: 2.21 miles W JAI Pool: SWD, DEVONIAN SILURIAN Pool No.: 97869

BLM 100K Map: JAI Operator: SOLARIS WATCH OGRID: 371643 Contact: Ben Storie, AGENT

COMPLIANCE RULE 5.9: Total Wells: 2 Inactive: 0 Fincl Assur: OK Compl. Order? MA IS 5.9 OK? Y Date: 7-25-2017

WELL FILE REVIEWED  Current Status: Proposed

WELL DIAGRAMS: NEW: Proposed  or RE-ENTER: Before Conv.  After Conv.  Logs in Imaging: \_\_\_\_\_

Planned Rehab Work to Well: \_\_\_\_\_

Well Construction Details		Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement (Sx or Cf)	Cement Top and Determination Method	
Planned ___ or Existing ___	Surface	<u>26 1/2" / 20"</u>	<u>1000</u>	<u>1500</u>	<u>SURFACE / VISUAL</u>	
Planned ___ or Existing ___	Interm/Prod	<u>17 1/2" / 13 3/8"</u>	<u>4450</u>	<u>2000</u>	<u>SURFACE / VISUAL</u>	
Planned ___ or Existing ___	Interm/Prod	<u>12 1/2" / 10 3/4"</u>	<u>13000</u>	<u>4450</u>	<u>2000</u>	<u>SURFACE / VISUAL</u>
Planned ___ or Existing ___	Prod/Liner	<u>8 1/2" / 7 3/4"</u>	<u>17600</u>		<u>12700 / C-13-LA</u>	
Planned ___ or Existing ___	Liner					
Planned ___ or Existing ___	<input checked="" type="radio"/> OH <input type="radio"/> PERF	<u>17600 / 1960</u>				
Injection Lithostratigraphic Units:		Depths (ft)	Injection or Confining Units	Tops	Completion/Operation Details:	
Adjacent Unit: Litho. Struc. Por.			<u>17310</u>	<u>wd</u>	Drilled TD <u>1960</u> PBDT _____	
Confining Unit: Litho. Struc. Por.			<u>17585</u>	<u>DV</u>	NEW TD _____ NEW PBDT _____	
Proposed Inj Interval TOP:					NEW Open Hole <input checked="" type="radio"/> or NEW Perfs <input type="radio"/>	
Proposed Inj Interval BOTTOM:					Tubing Size <u>5"</u> in. Inter Coated? _____	
Confining Unit: Litho. Struc. Por.					Proposed Packer Depth _____ ft	
Adjacent Unit: Litho. Struc. Por.					Min. Packer Depth _____ (100-ft limit)	
					Proposed Max. Surface Press. <u>3520</u> psi	
					Admin. Inj. Press. <u>3520</u> (0.2 psi per ft)	

\* Run 5" Tubing Surface Intermediate 5" SLICE

**AOR: Hydrologic and Geologic Information**

POTASH: R-111-PMMA Noticed? \_\_\_\_\_ BLM Sec Ord  WIPP  Noticed? \_\_\_\_\_ Salt/Salado Tract B: 4460 NW: Cliff House fm \_\_\_\_\_

FRESH WATER: Aquifer Fracturing Max Depth 145' HYDRO AFFIRM STATEMENT By Qualified Person

NMOSE Basin: CARLSBAD CAPITAN REEF: thru adj NA No. Wells within 1-Mile Radius? 0 FW Analysis \_\_\_\_\_

Disposal Fluid: Formation Source(s): Bone Springs, water Analysis? Y On Lease  Operator Only  or Commercial

Disposal Int: Inject Rate (Avg/Max BWPD): 15K / 25K Protectable Waters? MA Source: \_\_\_\_\_ System: Closed or Open

HC Potential: Producing Interval? MA Formerly Producing? \_\_\_\_\_ Method: Logs/DST/P&A/Other \_\_\_\_\_ 2-Mile Radius Pool Map

AOR Wells: 1/2-M Radius Map? Y Well List? \_\_\_\_\_ Total No. Wells Penetrating Interval: regional Horizontals? \_\_\_\_\_

Penetrating Wells: No. Active Wells 0 Num Repairs? \_\_\_\_\_ on which well(s)? \_\_\_\_\_ Diagrams? \_\_\_\_\_

Penetrating Wells: No. P&A Wells 0 Num Repairs? \_\_\_\_\_ on which well(s)? \_\_\_\_\_ Diagrams? \_\_\_\_\_

NOTICE: Newspaper Date July 3, 2017 Mineral Owner BLM Surface Owner \_\_\_\_\_ N. Date \_\_\_\_\_

RULE 26.7(A): Identified Tracts? Y Affected Persons: EOC, Cimarron N. Date July 3,

Order Conditions: Issues: pan C-B-L from 500' top of liner to base of liner