F/P

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
Solaris Water Midstream, LLC 907 Tradewinds Blvd, Suite B Midland, TX 79706	371643
	3. API Number: 30-025-46747

4. Property Code	5. Property Name	6. Well No.
326514	Klein 4 SWD	1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	4	20S	35E		790	South	230	West	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
SWD; Devonian-Silurian	97869

Additional Well Information SWD-1871

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
N	SWD	R	P	3691' GR
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	15,913'	Devonian	To Be Determined	Upon Approval

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
~44'		

☒ **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
Surf	18.125"	16"	84#, J55, BTC	1983'	1060	Surf - Circ
1st Int	14.75"	13.375"	68#, FJ	5833'	1700	Surf - Circ
2nd Int	12.25"	9.625"	53.5# HCP-110	11,968'	2150	Surf - Circ

Casing/Cement Program: Additional Comments

Liner: 8.5" Hole, 7.625" Liner Size, 39#, P-110 Csg Wt, Set @ 11,768' - 14,713', 140 sx, Est TOC Top of Liner 11,768'

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Hydraulic/Blinds, Pipe	5000	8000	Hydril, Cameron or Equivalent

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: Bonnie Atwater	OIL CONSERVATION DIVISION
Printed name: Bonnie Atwater	Approved By:
Title: Regulatory Tech	Title:
E-mail Address: bonnie.atwater@solarismidstream.com	Approved Date: 01/21/2020 Expiration Date: 01/21/2022
Date: 12/31/19 Phone: 432-203-9046	Conditions of Approval Attached: See Administrative order SWD-1871

F/P

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-46747	97869	SWD; Devonian-Silurian

Property Code	Property Name	Well Number
326514	KLEIN 4 SWD	#1

OGRID No.	Operator Name	Elevation
371643	SOLARIS WATER MIDSTREAM, LLC	3691'

Surface Location

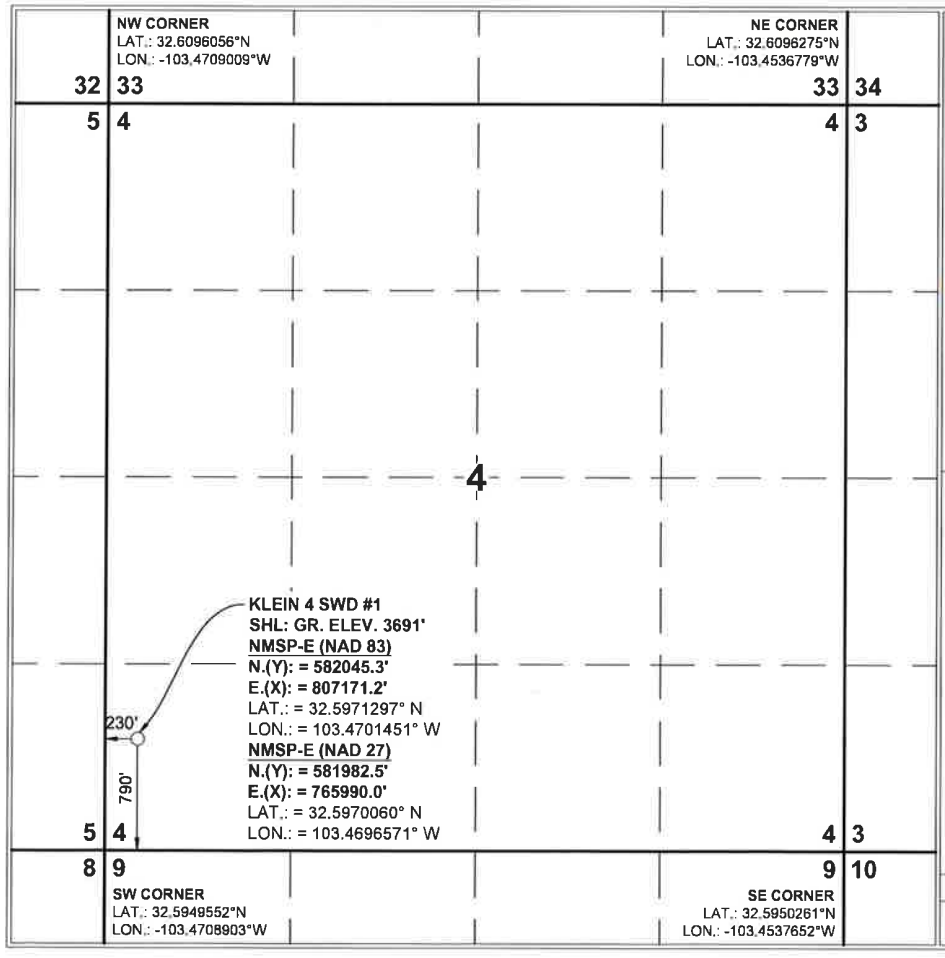
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	20S	35E		790	SOUTH	230	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
5.51			

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



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Bonnie Atwater 11/4/2019
Signature Date

Bonnie Atwater
Print Name

bonnie.atwater@solarismidstream.com
E-mail Address

SURVEYORS CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

MARCH 29, 2019
Date of Survey

Signature and Seal of Professional Surveyor:

JAMES E. TOMPKINS NEW MEXICO 14729 REGISTERED PROFESSIONAL LAND SURVEYOR

Job No.: WTC53084 Draft: M.P.

JAMES E. TOMPKINS 14729
Certificate Number

PLAT: X:\PROJECTS\OIL & GAS SURVEYS\SOLARIS MIDSTREAM\53084-SOLARIS MIDSTREAM.MOVE THE SOLARIS KLEIN 4 SWD #1 LOCATION, LEA CO. NM\DRAWINGS\53084-MOVE THE SOLARIS KLEIN 4 SWD #1 LOCATION LAYOUT TAB: MAP53/29/2019 11:10 AM

State of New Mexico
Energy, Minerals and Natural Resources Department

Administrative Order SWD-1871
December 18, 2019

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Pursuant to the provisions of Division Rule 19.15.26.8(B) NMAC, Solaris Water Midstream, LLC. ("the Operator") seeks an administrative order for its Klein 4 SWD No.1 ("the Proposed Well") with a location of 790 feet from the South line and 230 feet from the West line, Unit letter M of Section 4, Township 20 South, Range 35 East, NMPM, Lea County, New Mexico, for the purpose of commercial disposal of produced water.

THE DIVISION DIRECTOR FINDS THAT:

The application has been duly filed under the provisions of Division Rule 19.15.26.8(B) NMAC and satisfactory information has been provided that affected parties have been notified and no objections have been received within the prescribed waiting period. The applicant has presented satisfactory evidence that all requirements prescribed in Division Rule 19.15.26.8 NMAC have been met and the operator is in compliance with Division Rule 19.15.5.9 NMAC.

Application for Disposal in Devonian and Silurian Formations: Due to the potential for the projected injection volume of the proposed well to impact an area greater than the one-half mile radius applied in Division Form C-108 and Division rule, the applicant has provided the following supplementary information:

1. Notification following Division Rule 19.15.26.8(B) NMAC for a radius of one mile from the surface location of the proposed well;
2. An expanded Area of Review for wells penetrating the disposal interval for a radius of one mile from the surface location of the proposed well; and
3. A statement by a qualified person assessing the potential of induced-seismic events associated with the disposal activities for the predicted service life of the proposed well.

IT IS THEREFORE ORDERED THAT:

The applicant, Solaris Water Midstream, LLC. (OGRID 371643), is hereby authorized to utilize its Klein 4 SWD No.1 (API 30-025-Pending) with a location of 790 feet from the South line and 230 feet from the West line, Unit letter M of Section 4, Township 20 South, Range 35 East, NMPM, Lea County, for disposal of oil field produced water (UIC Class II only) through open-hole completion into an interval consisting of the Devonian and Silurian formations from

approximately 14,713 feet to approximately 15,913 feet. Injection will occur through internally-coated, 5½-inch or smaller tubing within the 9⅝-inch production casing and 5 inch or smaller tubing within the 7⅝-inch liner with a packer set within 100 feet of the top of the disposal interval. This permit does not allow disposal into:

1. The Woodford Shale and formations above the lower contact of the Woodford Shale;
2. Formations below the Silurian formations including the Montoya formation and the Ellenburger formation (lower Ordovician); and
3. Any lost circulation intervals directly on top and obviously connected to these formations.

Prior to commencing disposal, the operator shall submit mudlog and geophysical logs information, to the Division's District geologist and Santa Fe Engineering Bureau, showing evidence agreeable that only the permitted formation is open for disposal including a summary of depths (picks) for contacts of the formations which the Division shall use to amend this order for a final description of the depth for the injection interval. If significant hydrocarbon shows occur while drilling, the operator shall notify the Division's District office and the operator shall be required to receive written permission prior to commencing disposal.

The operator shall set surface casing 25 feet below the top of the Rustler anhydrite in order to seal off protectable water.

The operator shall circulate to surface the cement for the 9⅝-inch production casing.

If cement does not circulate on any casing string, the operator shall run a cement bond log ("CBL") or other log to determine top of cement and shall notify the Hobbs District with the top of cement on the emergency phone number prior to continuing with any further cement activity with the proposed well. If cement did not tie back into the next higher casing shoe, the operator shall perform remedial cement job to bring cement, at a minimum, 200 feet above the next higher casing shoe.

The operator shall run a CBL (or equivalent) for the 7⅝-inch liner to demonstrate the placement of cement and the cement bond with the tie-in with 9⅝-inch production casing string. The operator shall provide a copy of the CBL to the Division's District office prior to commencing disposal.

Prior to commencing disposal, the operator shall obtain a bottom-hole pressure measurement representative of the open-hole completion. This information shall be provided with the written notice of the date of commencement of disposal.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the disposed water enters only the approved disposal interval and is not permitted to escape to other formations or onto the surface. This includes the completion and construction of the well as described in the application and, if necessary, as modified by the District Supervisor.

After installing tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

The well shall pass an initial mechanical integrity test ("MIT") prior to initially commencing disposal and prior to resuming disposal each time the disposal packer is unseated. All MIT procedures and schedules shall follow the requirements in Division Rule 19.15.26.11(A) NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

Without limitation on the duties of the operator as provided in Division Rules 19.15.29 and 19.15.30 NMAC, or otherwise, the operator shall immediately notify the Division's District I office of any failure of the tubing, casing or packer in the well, or of any leakage or release of water, oil or gas from around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

If the disposal well fails a MIT or if there is evidence that the mechanical integrity of said well is impacting correlative rights, the public health, any underground sources of fresh water, or the environment, the Division Director shall require the well to be shut-in within 24 hours of discovery and the operator shall redirect all disposal waters to another facility. The operator shall take the necessary actions to address the impacts resulting from the mechanical integrity issues in accordance with Division Rule 19.15.26.10 NMAC, and the well shall be tested pursuant to Rule 19.15.26.11 NMAC prior to returning to injection.

The wellhead injection pressure on the well shall be limited to **no more than 2,942 psi.** In addition, the disposal well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well.

The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the target formations. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable step-rate test.

The operator shall notify the supervisor of the Division's District I office of the date and time of the installation of disposal equipment and of any MIT so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's District I office. The operator shall submit monthly reports of the disposal operations that includes number of days of operation, injection volume, and injection pressure on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

The injection authority granted under this order is not transferable except upon Division approval. The Division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

The Division may revoke this injection order after notice and hearing if the operator is in violation of Rule 19.15.5.9 NMAC.

The disposal authority granted herein shall terminate one (1) year after the effective date of this Order if the operator has not commenced injection operations into the subject well. One year after the last date of reported disposal into this well, the Division shall consider the well abandoned, and the authority to dispose will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

Compliance with this Order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the disposal authority granted herein.

ANDRIENNE SANDOVAL
Director

AS/bl

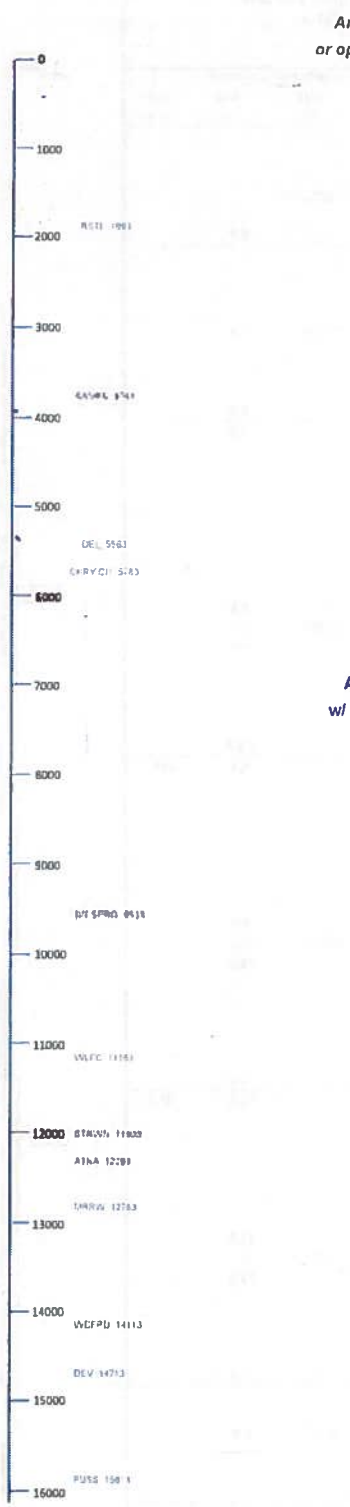
cc: Oil Conservation Division – Hobbs District Office
Admin. Appl. No. pMAM1835256217
Bureau of Land Management – Carlsbad Field Office

Attachment: C-108 well completion diagram

WELL SCHEMATIC - PROPOSED
Klein 4 SWD Well No.1

API 30-025-xxxxx
758' FSL & 608' FWL, SEC. 4-T20S-R35E
LEA COUNTY, NEW MEXICO

SWD; Devonian-Silurian (97869)
Spud Date: 3/01/2019
SWD Config Dt: 4/01/2019



Annulus Monitored or open to atomosphere

Injection Pressure Regulated and Volumes Reported
2942 psi Max Surface (0.2 psi per foot)

30'

1983'

5833'

Annulus Loaded w/ Inert Packer Fluid

TOL @ 11768'
11968'

14713'

DTD @ ~15,913'

Conductor Casing
30.0" Csg. (36.0" Hole) @ 120' w/ 200 sx

Surface Casing
16.0", 84.0# J-55 Csg. (18.125" Hole) @ 1983'
1060 sx - Circulated to Surface

Intermediate Casing
13.375", 68.0# FJ Csg. (14.75" Hole) @ 5833'
1700 sx - Circulated to Surface

Solaris Water Midstream, LLC

Drill and set casing as designed w/ all strings cemented to surface.
Install 7.625" liner @ ~14,713 w/ 140 sx to TOL.
Drill 6.5" openhole to approx. 15,913' TD w/ mudlog for interval/ formation verification. Acidize formation; run 5.5" (5.0" FJ inside liner) injection TBG on PKR set at 14,613'+
Conduct OCD witnessed MIT.
Well ready for injection upon completion of surface facilities.

2nd Intermediate Casing
9.625", 53.5# HCP-110 Csg. (12.25" Hole) @ 11968'
2150 sx - Staged; Circulate to Surface
(DV @ ~6700')

Split String Tubing Transition ~11708'

5.5" to liner w/ 5.0" Flush Joint inside liner
IPC Tubing set in PKR ~14,613'
(Within 100' of Uppermost Disposal Interval)

Prod/LNR Casing
7.625", 39.0# P-110 Csg (8.5" Hole) 11768' to 14,713'
140 sxs Cls H - TOC @ Top of LNR

6.5" Openhole Interval: 14,713' to 15,913'

Drawn by Ben Stone, 12/09/2018

SOS Consulting, LLC

SOLARIS WATER MIDSTREAM

Klein 4 SWD #1

WELLBORE DATA SHEET

FIELD NAME: SWD
WELL NAME: Klein 4 SWD #1
LOCATION: 758' FSL & 608' FWL
Lea, Co, NM
OBJECTIVE: Devonian/Fusselman SWD

TOTAL DEPTH: 15,913
SURF. LOC'N: Section 4, T20S, R35E
BTM. HOLE LOC'N: Same As Above
SURFACE ELEV.: 3691.0

MUD LOGGING / E LOGGING / DIRECTIONAL	CASING SIZE (IN.)	RKB DRILL DEPTH MD	RKB DRILL DEPTH TVD	BOPE	FORMATION	HOLE SIZE (IN.)	MUD WT.	FRAC GRAD
	RKB	30						
Grnd Level								
	GL. ELEV.	3,731						
						Set and grouted		
	30"	120'	/ 120'	Open			8.8	
						18.125"	8.4	
		1963			Rustler			
	16"	1,983	/ 1,983	21-1/4"-5M Annular/Diverter			8.4	
	84 lb/ft J55, BTC						9.5	
		3,538			Yates			
		3,763			Seven Rivers			
		4,638			Queen		9.5	
						14.75"	to	
							10	
		5,563			Delaware			
Mud Logging to begin @ 2,500'								
		5,783			Cherry Canyon			
	13.375"	5,833	/ 5,833	13-5/8"-5M Annular			10.0	
	68 lb/ft -80, EZ-GO FJ			13-5/8"-10M BOP's			9.4	FIT
		6,388			Brushy Canyon			
		6,163			Bone Spring LM			
		9,638			First BS Sand			
		3,721						
		10,213			2nd BS Sand			
		11,038			Third BS Sand		9.4	
		11,163			Wolfcamp	12.25"	to	
							10.0	
	TOL	11,768	/ 11,768					
	9.625"			13-5/8"-5M Annular			10.0	
	53.50 lb/ft HCP-110, BT	11,988	/ 11,988	13-5/8"-10M BOP's			12.5	15.6
		11,988			Strawn			
		12,288			Atoka			
		12,763			Morrow			
							12.5	
		13,363			Barnett	8.5"	to	
		13,513			Mississipian LM		13.5	
		14,113			Woodford Shale			
		14,713			Devonian			
	Liner Wed 6252"	14,713	/ 14,713	13-5/8"-5M Annular			13.5	
	39 lb/ft P-110			13-5/8"-10M BOP's				
Run #1		15,813			Fusselman	6.5"	9.0	
GR/NEUTRON 15,913 - 0								
USIT/CBL 14,713 - 0								
	Dual 0" TD	15,913	/ 15,913	13-5/8"-5M Annular	TD at Base of Fusselman			
				13-5/8"-10M BOP's				