11/14/2014

Swp

PMAY1432347407

ABOVE THIS LINE FOR DIVISION USE ONLY

# NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



	A	DMINISTRATIVE APPLICATION CHECKLIST
TI	HIS CHECKLIST IS MAN	IDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE
Appilo	IDHC-Downh IPC-Pool Vj	ard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication] ole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling] Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement] VFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion] [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase] ied Enhanced Oil Recovery Certification] [PPR-Positive Production Response]
[1]	TYPE OF APP	LICATION - Check Those Which Apply for [A]
•	[A]	Location - Spacing Unit - Simultaneous Dedication  NSL NSP SD  NSP SD  - Probity Sub, LL C  296278
		One Only for [B] or [C]  Commingling - Storage - Measurement  DHC CTB PC PC OLS OLM - Keach #1
	[C]	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  WFX' PMX SWD PPR  Other: Specify PPR  SwD SAN Andres
	[Ď]	Other: Specify
[2]	NOȚIFICATIO [A]	N REQUIRED TO: - Check Those Which Apply, or Does Not Apply  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
[3]		URATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE FION INDICATED ABOVE.
	val is accurate an	ION: Thereby certify that the information submitted with this application for administrative described to the best of my knowledge. It also understand that no action will be taken on this uired information and notifications are submitted to the Division.
Am Print o		ford Signature. Regulatory Compliana Dr. 1119114  Signature. Date  Compliana Dr. 1119114  Acrawford Grant Comp.  Compliana Dr. 1119114  C

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108 Revised June 10, 2003

	APPLICATION FOR AUTHORIZATION TO INJECT () ()()
Ι.	PURPOSE: Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval?  Yes No. P 3: 00
[].	OPERATOR: Probity SWD, LLC
	ADDRESS: PO BOX 1307, midland, TX 19708
	CONTACT PARTY: Amithy Crawford Martin Dozier PHONE: 432-570-1122
III.	WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  Additional sheets may be attached if necessary.  Mdozier @ probety energy . Complete the data required on the reverse side of this form for each well proposed for injection.
IV.	Is this an expansion of an existing project? Yes No If yes, give the Division order number authorizing the project:
V.	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
VI.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).</li> </ol>
*VIII.	Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
*X.	Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
*XI.	Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
XIV.	Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.  NAME: Amithy Crawford  TITLE: Regulatory Compliance Director
	SIGNATURE Smith rampord DATE: 11-10-14
* .	E-MAIL ADDRESS: <u>ACTAWFORD</u> <u>Orobit lenergy.(OM)</u> If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal:

#### III. WELL DATA

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

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

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

#### XIV. PROOF OF NOTICE

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

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

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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

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



## ATTACHMENTS TO APPLICATION C-108

The purpose of this application is to convert the Keach # 1 into a commercial San Andres salt water disposal well.

Keach #1 Unit O, Section 4, T20S, R38E Lea. County, NM

II. Operator:

Probity SWD, LLC (OGRID #: 296278) PO BOX 7307, Midland, TX 79708

Contact: Amithy Crawford

432-570-1122

#### III. Well Data:

- A. See attached Exhibit A (Current P&A Wellbore) & Data sheets
- B. See attached Exhibit A1 (Proposed SWD Wellbore) & Data sheets
- IV. No, this is not an expansion of an existing project.
- V. 2 mile radius and ½ mile area of review map & table attached. See exhibit B
- VI. List of wells and data and wellbore diagrams attached. See Exhibit C.

VII. Probity SWD, LLC plans to re-enter the proposed well. Install anchors and wellhead. Clean out cement plugs down to approximately 5530'. Test casing for leaks. Run in hole and selectively perforate 5 ½" casing from 4400' to 5355', acidize as needed. Go in hole with 2 7/8" coated tubing and packer, and set at approximately 4340' or 100 feet of top of perforations. Load with packer fluid and run MIT as OCD requires and put on injection.

- 1) Plan to inject approximately on average 10,000 bpd (25,000 bpd maximum) of produced water from various sources of production.
- 2) Closed system, commercial.
- 3) Average injection pressure should be approximately 800 psi to 1200 psi or whatever limit the NMOCD allows.
- 4) Sources of disposal waters would be produced water from numerous producing intervals of SE New Mexico. See Exhibit D for water analysis.

	5) Disposal interval is San Andres 4440'-5355'
1,	VIII. The proposed disposal formation is interbedded shale and limestone. The primary geologic formation is the Lower San Andres from 4440'-5355'. The fresh water formation in the area is the Alluviam which ranges in thickness from 20' to 30'. Underground water sources of drinking water are the Alluviam fill from surface to 350'.  Possible Sauta Rosa at 4200' 1300' Orallala (Red bed)
	IX. Acid as needed. If needed the disposal interval will be acidized during conversion operations with  15% HCL acid.
	X. Log previously submitted to the NMOCD.
	XI. Attached. See Exhibit E.
/	XII. I have examined all available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zones and any underground source of drinking
•	water pertaining to this well.
<u></u>	water pertaining to this well.  Not quotified - need statement with identified party  XIII. Proof of notice attached. See Exhibit F.
	1) By certified mail to all leasehold operators within one-half mile
	<ul> <li>2) By certified mail to the surface owner</li> <li>3) Proof of publishing: Newspaper clipping</li> </ul>
	3) Proof of publishing: Newspaper clipping
	Previous History:
	Producer- in West Nadine, San Andress pool-only well in pool
	[R-11304 02-61-2000] SE14 of Sec.4; no arrest producers
	[R-11304 02-61-2000] SE14 of Sec.4; no current producers in pool/no adjacent producers in SA except 1/2 mile SE — House; San Andres [SE14 of Sec.10].
	1
	SUID-892: 9/4/2003-Paddock int. [5884' to 6070]
	$A = 1 \cdot 1$
	Application 9/15/2006 - ancelled due to affect pluggedwell SWD-1015: 12/2012005 - Paddock int [5804 to 6070]
	o Producer converted to Nadise, Paddock-Bluebry, Producer

# KEACH #1 UNIT O, SECTION 4, T20S, R38E 467' FSL & 2310 FEL API: 30-025-34565 AFTER P&A 85sx cement plug 350ft to surface Squeeze perfs 350ft 8 5/8" 24# Casing @ 1577ft in 12 1/4" hole Cmt circ to surface w/ Anhy 1610ft 975 sx. Base Salt 2865ft Queen 3670ft San Andres 4218ft 35sx cement plug 1660-1525ft Squeeze perfs 1660ft Calculated TOC 2710ft 25sx BS plug at 2915-2815ft 25sx cement plug Perfs CIBP@4175ft 4224-4294R CIBP@4280ft CIBP@4500ft CIBP@7200ft Perfs 7235-7758ft CIBP@7850ft Capped w/ 20ft cmt 5 1/2" 17# Csg at 7895ft in 7 7/8" hole, Cmt w/ 1205sx cmt 4 3/4" open hole 7895-7921ft

WELL: Keach #1, 467' FSL & 2310' FEL, Unit O, Sec. 4, T20S, R38E, API:30-025-34565

Proposed SWD Wellbore Schematic

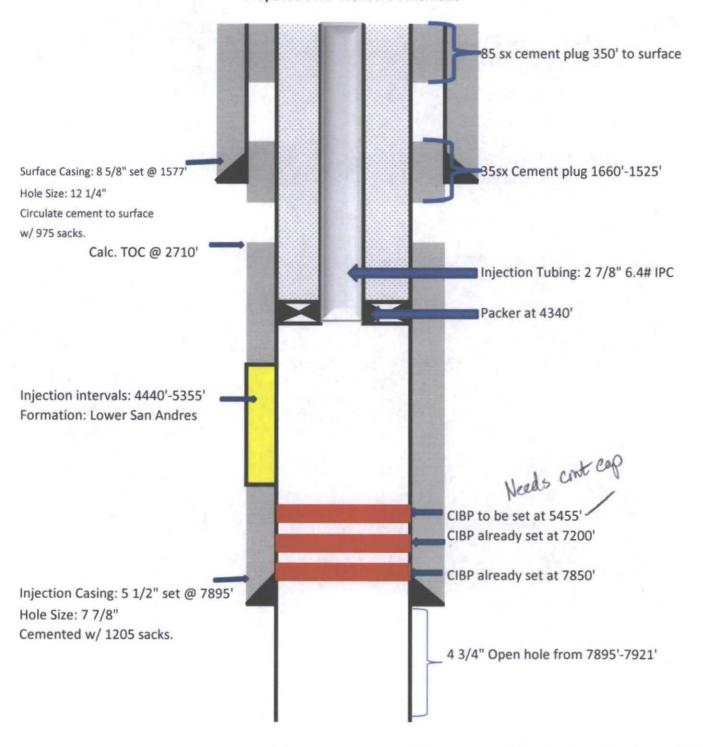


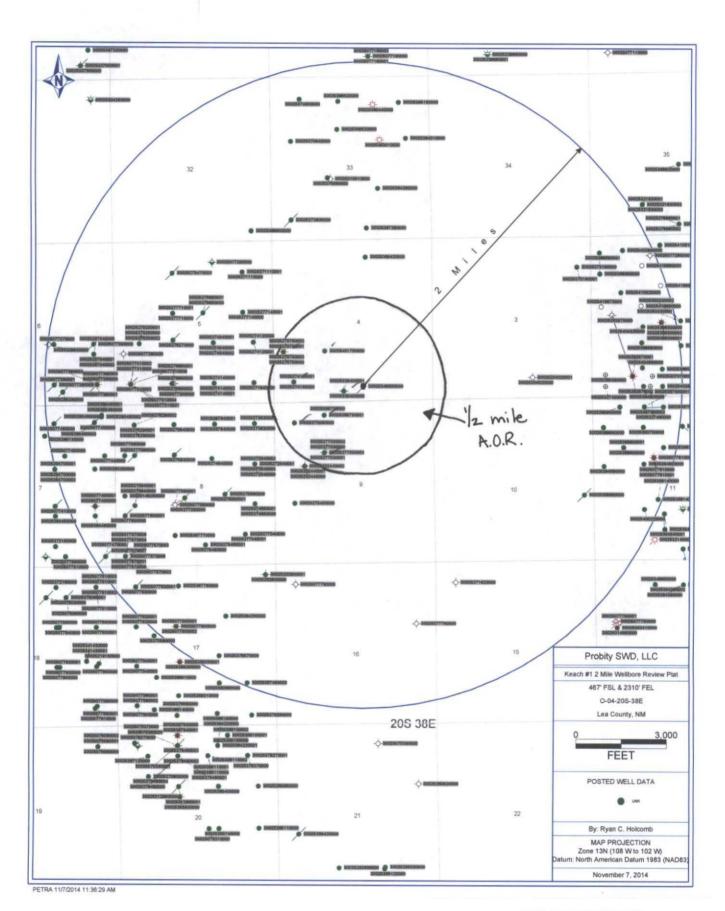
EXHIBIT A1

<sup>\*</sup> Not drawn to scale

INSECTION WEED DATA SHEET
Tubing Size: 27/8" (Dated the Lining Material: NA
Type of Packer: Baker Lock Set
Packer Setting Depth: 4340'
Other Type of Tubing/Casing Seal (if applicable): NP
Additional Data
1. Is this a new well drilled for injection? YesNo
If no, for what purpose was the well originally drilled? Well was originally drilled as a producle.
2. Name of the Injection Formation: LOWER SAN Andres
3. Name of Field or Pool (if applicable):
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. 4224-4394
5884'-4070' & 7235'-7758': CIBPG Set@ 4175,4280, 4500', 7200'& 7850
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: The next higher producing zone
15 the upper SD @ approx. 4217'. The next lower
producing zone is the filorieta @ approx. 5501'

Side I INJEC	TION WELL DATA SH	IEET		
OPERATOR: Probity SWD, LC				
WELL NAME & NUMBER: KRACH #1				
WELL LOCATION: 447 FSL 20310 FEL FOOTAGE LOCATION	O UNIT LETTER	SECTION	205 TOWNSHIP	38e RANGE
WELLBORE SCHEMATIC		WELL CO Surface (	ONSTRUCTION DA Casing	<u>TA</u>
	Hole Size:	2 1/4"	Casing Size:	5/8"
	Cemented with: _	<u>975</u> sx.	or	ft³
	Top of Cement: _	Surface	Method Determine	ed: <u>Circulak</u>
		Intermediat	e Casing	
	Hole Size:	***************************************	Casing Size:	
	Cemented with: _	sx.	or	ft <sup>3</sup>
	Top of Cement: _		Method Determine	ed:
		<u>Production</u>	ı Caşing	
	Hole Size:	7/8"	Casing Size:	5'b"
	Cemented with: _		or	
	Top of Cement: _	2710'	Method Determine	ed: <u>Calc.</u>
	Total Depth:	7921'		
	44	40 Injection feet	Interval to 5355	1

(Perforated or Open Hole; indicate which)



WELLS IN AOR		
Well:	Collins Heirs	
No.:	#1	
Operator:	Primero Operating inc	
API:	30-025-40178	
Location:	T20S R38E Sec 4, 1650 FSL & 1700 FWL	
Land Type:	P	
County:	Lea	
Status:	Producing	

Well:	L&M
No.:	#8
Operator:	Apache Corp
API:	30-025-40262
Location:	T20S R38R SEC2, 330 FSL & 2310 FWL
Land Type:	P
County: •	LEA
Status:	Producing

Well:	Lady
No.:	#1
Operator:	Antwell Mortis CHEVRON USA
API:	30-025-27875
Location:	T20S R38E SEC 4, 1650 FSL & 330 FWL
Land Type:	Р
County:	LEA
Status:	Producing

Well:	Hasket
No.:	#1
Operator:	Tamarack Petr Co Inc
API:	30-025-27415
Location:	T20S R38E SEC 4, 660 FSL & 660 FWL
Land Type:	Р
County:	LEA
Status:	Producing

Well:	Roberts
No.:	#1
Operator:	Read & Stevens Inc PRIMERO DPERATIN
API:	30-025-38673
Location:	T20S R38E SEC 9, 430 FNL & 1650 FWL
Land Type:	P
County:	LEA
Status:	Producing

Well:	Speight
No.:	#1
Operator:	Tamarack Petr Co Inc
API:	30-025-27006
Location:	T20S R38E SEC 9, 660 FNL & 660 F WL
Land Type:	Р
County:	LEA
Status:	Producing

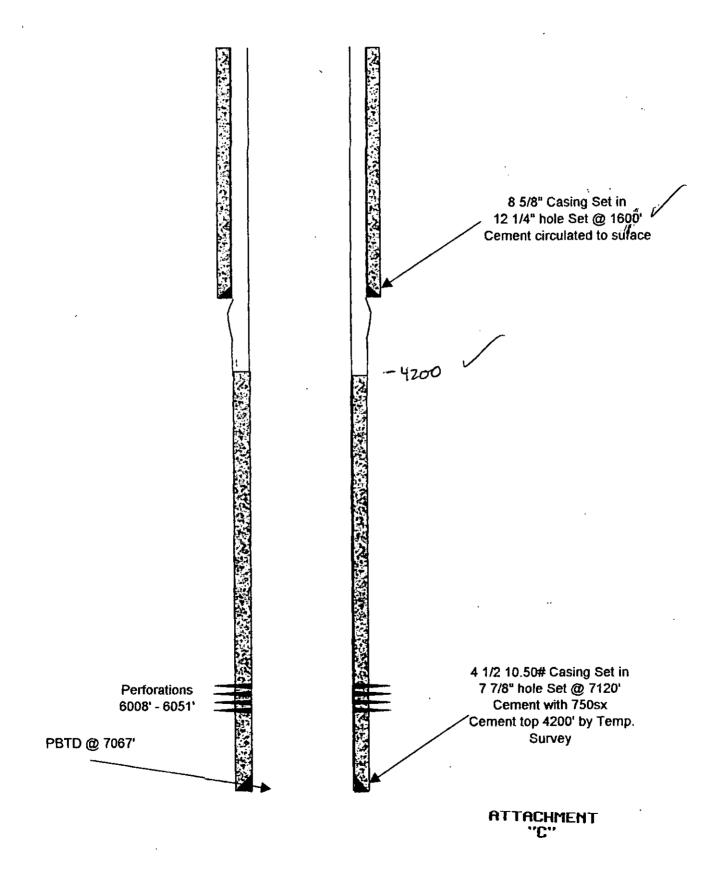
Well:	Kornegay A
No.:	#1
Operator:	Tamarack Petr Co Inc
API:	30-025-27703
Location:	T20S R38E SEC 9, 1650 FNL & 1650 FWL
Land Type:	P
County:	LEA
Status:	P&A

Well:	Vinson
No.:	#1
Operator:	Amerada Hess Corp Picker Production
API:	30-025-33540
Location:	T20S R38E SEC 4, 330 FSL & 2310 FWL
Land Type:	Р
County:	LEA
Status:	P&A

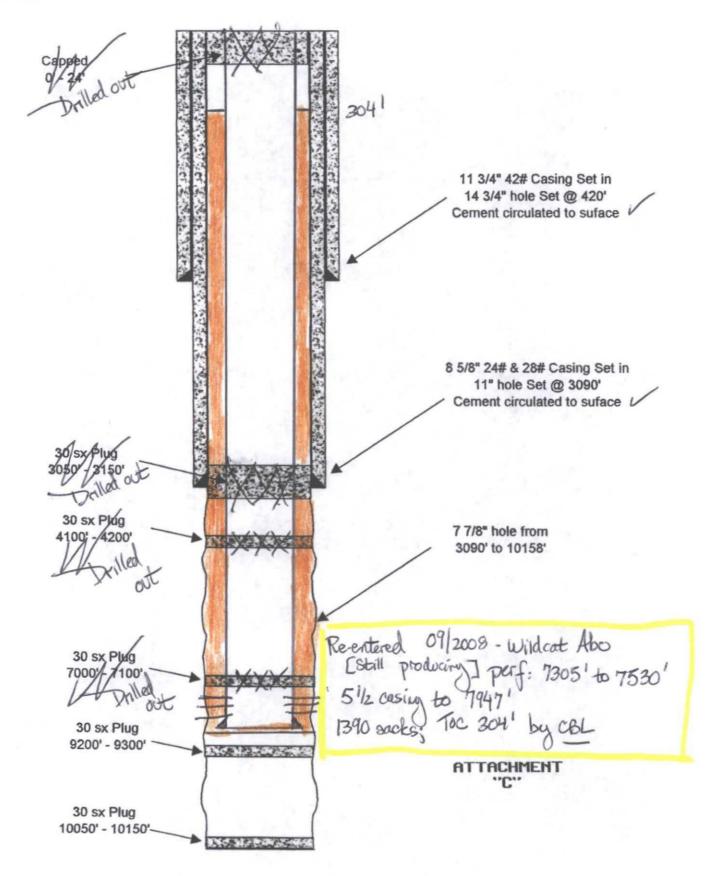
Re-entry for WC-Abo Pool Active produces

9 well 5 P&A 7 Potive Tamarack Petroleum Co Inc.

Speight #1 API: 3002527006



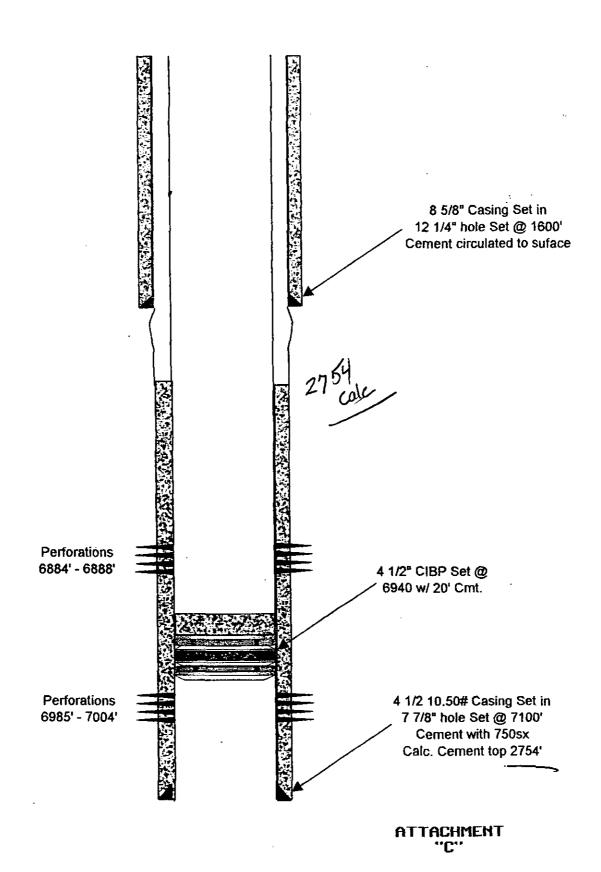
Amerada Hess Corp. √inson #1
3002533540



Tamarack Petroleum Co Inc.

Hesket #1

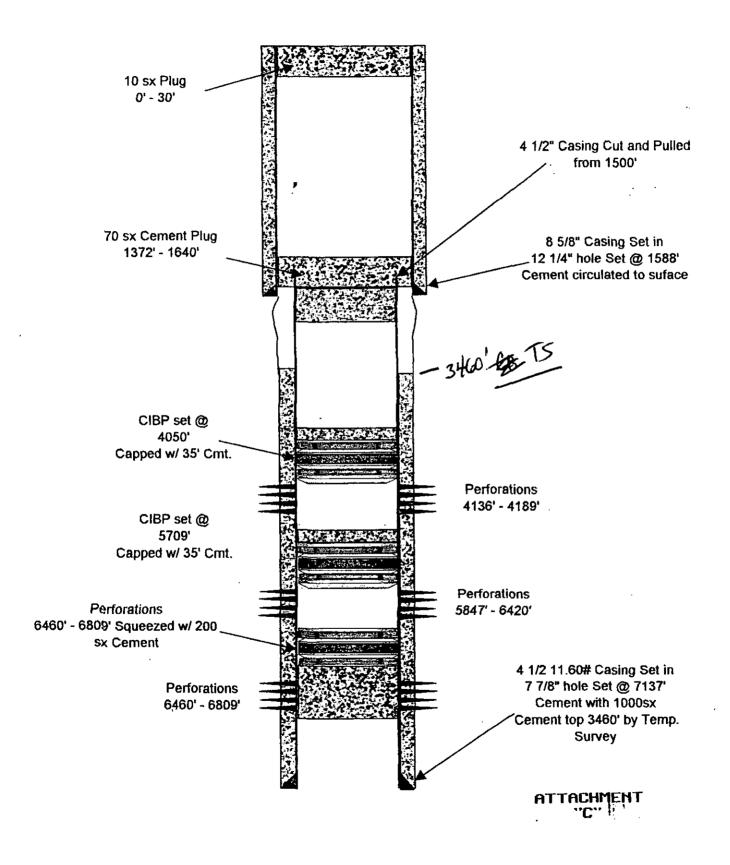
API: 3002527415



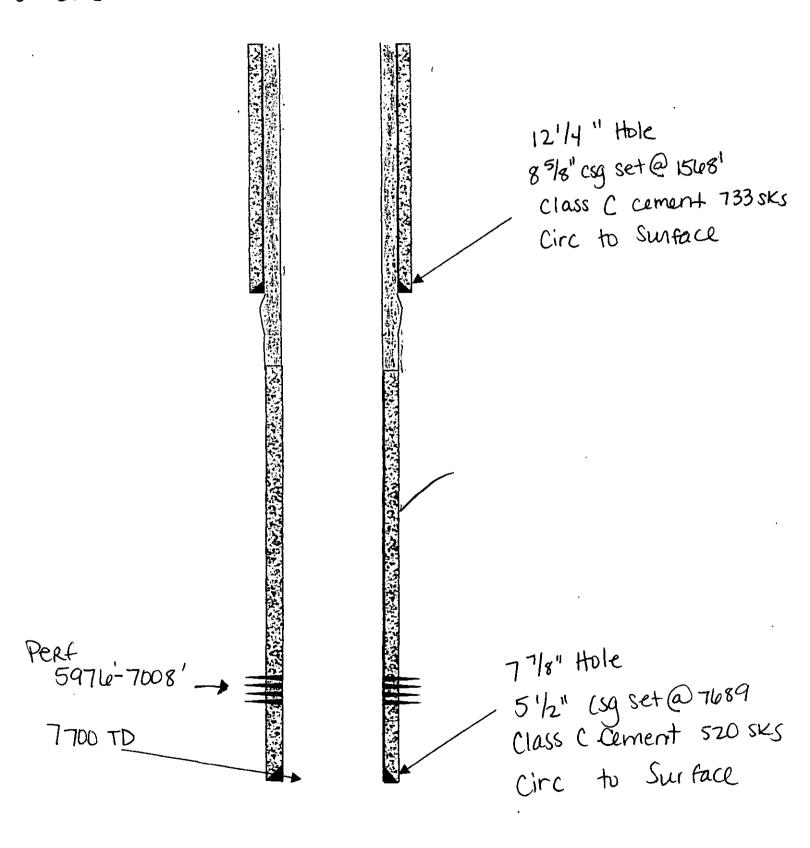
Tamarack Petroleum Co Inc.

Kornegay A #1

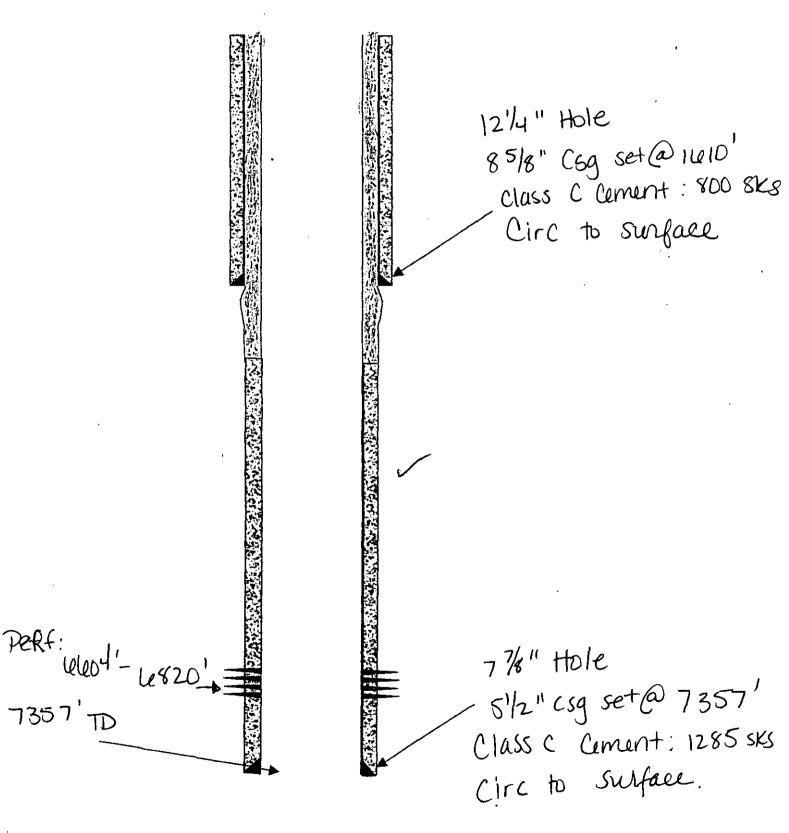
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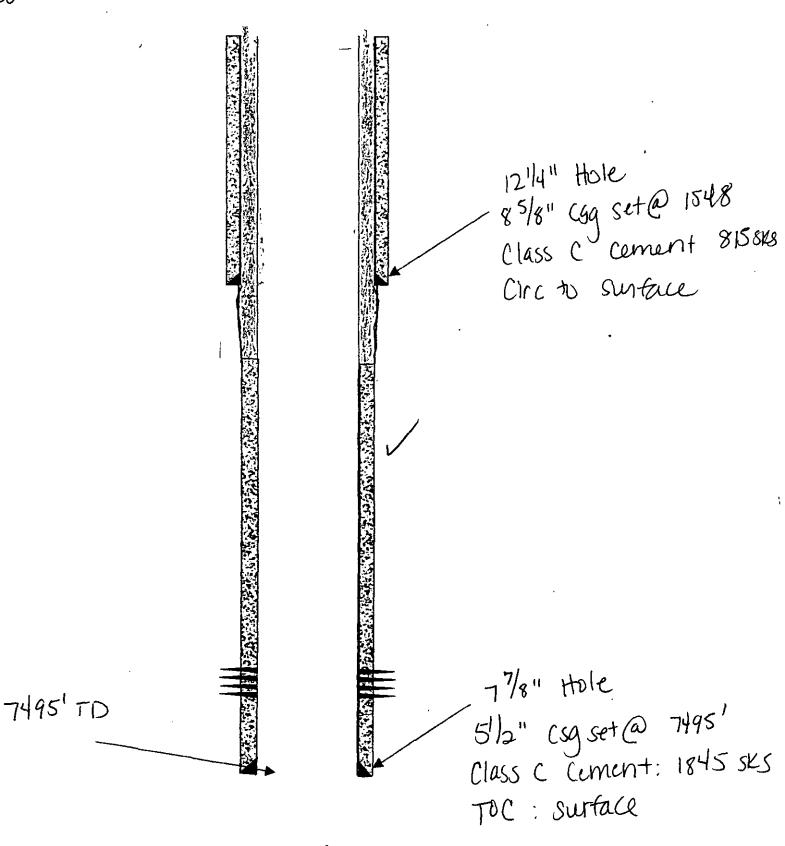
Rimero Operating, Inc Collins Heirs # 1 30-025-40178



Apache CORP. L-8M # 8 30-025-40262



Primero Operating Roberts #1 30-025-38673



Chevron VSA LADY # 1 30-025-27875

1214" Hole -85/8" csg set@ 15001 class c cement 800 8Ks Circ to surface Etopot cementy 3400' Pert 59301-64541 7 1/8" Hole 51/2" (sg set@ 7,47' Class C cement 700 sks 7147'TD TOC 3400'

# EXHIBIT D

# Water Sample Analysis

Water Sample Analysis		Location		
Pool	Section	Township	Range	Chlorides
North Justis Montoya	2	258	37E	45440
North Justis McKee	2	258	37E	58220
North Justis Fusselman	2	258	37E	68533
North Justis Ellenburger	2	258	37E	34151
Fowler Blinebry	22	248	37E	116085
Skaggs Grayburg	18	208	38E	84845
Warren McKee	18	208	38E	85910
Warren Abo	19	20\$	39E	91600
DK Drinkard	30	208	39E	106855
Littman San Andres	8	218	38E	38695
<ul> <li>East Hobbs grayburg</li> </ul>	29	18S	39E	6461
Halfway Yates	16	208	32E	14768
Arkansas Junction San Andres	12	188	36E	7171
Pearl Queen	28	198	35E	114310
Midway Abo	17	178	37E	36494
Lovinton Abo	31	168	37E	22933
Lovington San Andres	3	168	37E	4899
Lovington Paddock	31	16S	37E	93720
Mesa Queen	17	168	32E	172530
Kemnitz Wolfcamp	27	168	34E	49345
Hume Queen	9	16S	34E	124960
Anderson Ranch Wolfcamp	2	168	32E	11040
Anderson Ranch Devonian	11	16S	32E	25702
Anderson Ranch Unit	11	16S	32E	23786
Caudill Devonian	9	158	36E	20874
Townsend Wolfcamp	6	16S	36E	38695
Dean Permo Penn	5	168	37E	44730
Dean Devonian	35	158	36E	19525
South Denton Wolfcamp	26	158	37E	54315
South Denton Devonian	36	158	37E	34080
Medicine Rock Devonian	15	158	38E	39760
Little Lucky Lake Devonian	29	158	30E	23288
Wantz Abo	26	218	37E	132770
Crosby Devonian	18	258	37E	58220
Scarborough Yates Seven Rivers	7	<b>26</b> S	37E	3443(Reef)
_Teague Simpson	34	238	37E	114665
Teague Ellenburger	34	235	37E	120345
Rhodes Yates 7 Rivers	27	26 <b>\$</b>	37E	144485
House SA	11	208	38E	93365
House Drinkard	12	208	38E	49700
South Leonard Queen	24	26S	37E	115375
Elliot Abo	2	218	38E	55380
Scharb Bone Springs	5	198	35E	30601
EK Queen	13	188	34E	41890
East EK Queen	22	18S	34E	179630
Maljamar Grayburg SA	22	17S	32E	46079
Maljamar Paddock	27	17S	32E	115375
Maljamar Devonian	22	178	32E	25418



#### Analytical Results For:

Eddie Seay Consulting

Project: KEACH SWD

Reported:

601 W. Illinois

Project Number: NONE GIVEN

16-May-13 17:11

Hobbs NM, 88242

Project Manager: Eddie Seay Fax To: (505) 392-6949

> KEACH WW #1 H300993-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzod	Method	Notes			
		Cardin	al Laborat	ories								
Inorganic Compounds												
Alkalinity, Bicarbonate	249	5.00	mg/L	ì	3040406	AP	26-Apr-13	310.1				
Alkalinity, Cerbonate	ND	0.00	mg/L	1	3040406	ΑP	26-Apr-13	310.1				
Chloride*	128	4.00	mg/L	1	3042903	DW	29-Apr-13	4500-CI-B				
Conductivity*	920	1.00	uS/cm	1	3043005	DM	30-Apr-13	120.1				
pH*	7.55	0.100	pH Units	3	3043004	DW	30-Apr-13	150.1				
Sulfate*	155	25.0	mg/L	2.5	3042902	ΛP	29-Apr-13	375.4				
TDS•	598	5.00	mg/L	1	3043009	CK	01-May-13	160.1				
Aikalinity, Total*	204	4.00	mg/L	t	3040406	AP	26-Apr-13	310.1				
		Green Anal	ytical Labo	ratories								
Dissolved Metals by ICP												
Calcium*	111	10.0	mg/L	10	B305074	ILM	15-May-13	EPA200.7				
Magnesium*	22.9	10.0	mg/L	10	B305074	ЛM	15-May-13	EPA200.7				
Potassium *	ND	10.0	mg/L	10	B305074	ILM	15-May-13	EPA200.7				
Sodium*	58.6	0.01	mg/L	10	B305074	ЛM	15-May-13	EPA200.7				

#### Cardinal Laboratories

\*=Accredited Analyte

FLENGE VOIE: Jubble and Demotes. Conducts intellige and clercits encludes remark for any clean making whether based in consect or let, that his lesshed to the amount past y there for any clean and the second of the special properties of the second past of the

Celey L. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 9

# **EXHIBIT F**

# **LEGAL NOTICE**

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, Probity SWD, LLC, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the Keach #1, API 30-025-34565, located in Unit O, Section 4, Township 20 South, Range 38 East, 467 FSL & 2310 FEL, Lea County, NM. The injection formation is the lower San Andres from 4440'-5355' below surface. Expected maximum injection rate is 10,000 bpd and the expected maximum injection pressure of 800 psi or what the OCD allows. Any questions about the application can be directed to Amithy Crawford (432-570-1122) PO BOX 7307, Midland, TX 79707, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe NM, 87505, within fifteen (15) days.

LEGALS

LEGAL NOTICE November 13, 2104

Pursuant to the rules and regulations of the Oll Conservation Division of the State of New Mexico: Probity SWD, LLC, is filting a C-108, Application for Salt Water Disposal. The well being applied for is the Keach #1 API 30-025-34565, located in Unit O. Section 4: Township 20 South, Range 38 East, 467 FSL & 2310 FEL, Lea County, NM. The injection formation is the lower San Andres from 4440-5355' below surface; Expected maximum injection rate is 25.000 bpd and the expected maximum injection pressure of 800 psi or what the OCD allows: Any questions about the application can be directed to Amithy Crawford (432-570-1122) PO BOX 7307, Midland, TX 79707, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440; 1220 South Saint Francis Drive, Santa Fe NM, 87505, within lifteen (15) days.

## List of required notified:

## Surface owner:

Lee Roberts PO BOX 356 Hobbs, NM 88240

## 1/2 mile operators:

Primero Operating, LLC PO BOX 1433, Roswell NM 88202

Apache Corp 2000 Post Oak BLVD, Suite 100, Houston TX 77056

Chevron USA PO Box 2100, Houston, TX 77252

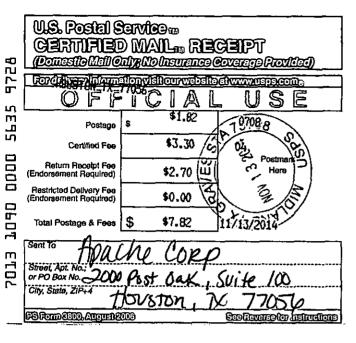
Tamarack Pet. Co. 303 W. Wall St. Suite 1901, Midland TX 79701

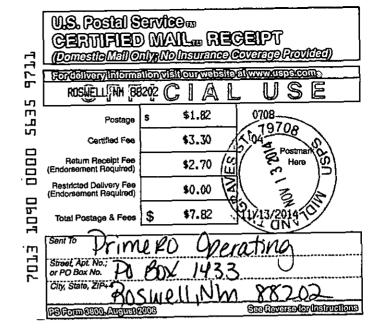
Amerada Hess Corp PO BOX 2040, Houston TX, 77252

Pierce Production 1203 7<sup>th</sup> St., Eunice NM, 88231

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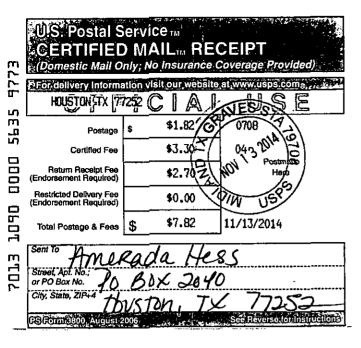
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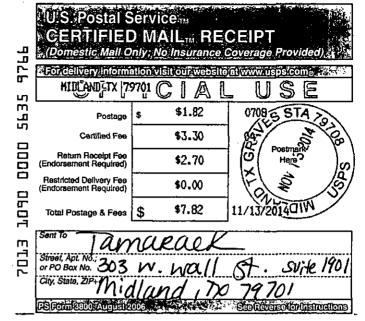


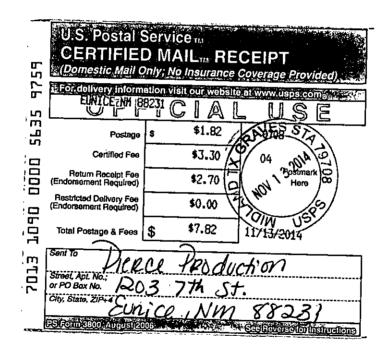


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# **Affidavit of Publication**

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 November 13, 2014 and ending with the issue dated November 13, 2014.

Editor/

Sworn and subscribed to before me this 13th day of November 2014.

**Business Manager** 

My commission expires January 29, 2015

(Seal)

GUSSIE BLAND NOTATY PUBLIC State of New Maries

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

LEGALS

LEGAL NOTICE November 13, 2104

Pursuant to the rules and rogulations of the Oil Conservation Division of the State of the Mental Problems o

67112254

00147556

AMITHY CRAWFORD PROBITY SWD, LLC PO BOX 7307 MIDLAND, TX 79708



RECEIVED OCD

February 11, 2015

2015 FEB 12 P 1: 22

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

Attn: Mr. Phillip Goetze, Engineer

Re: Amendment Items to <u>Existing C-108 Application</u> of Probity Operating, LLC to permit for salt water disposal the Keach No.1 well located in Section 4, Township 20 South, Range 38 East, NMPM, Lea County, New Mexico.

Dear Mr. Goetze.

I have recently been contacted by Probity Operating, LLC to assist with some of their application efforts for their operations in New Mexico.

Mr. G.A. Baber indicated to me that there were some open items identified by you during a cursory review of the subject C-108 application for SWD.

I have reviewed the file as submitted and worked with Mr. Baber to further research, evaluate and compile or otherwise generate any remaining required documentation.

The attached package is a result of that effort. Please note that 3 water wells were identified within one mile of the proposed well. Samples have been taken and are currently being analyzed – the results will be forwarded to your attention as soon as possible.

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 Probity Operating, LLC

Cc: Application attachment and file

# **FORM C-108**

# **Amendment Items per OCD Request**

- 1. Geological Affirmation
- 2. Map of Water Wells within One Mile
- 3. List of Water Wells 3 Identified within One Mile
- 4. Leasehold Map
- 5. List of Interested Parties Additional Parties
- 6. Notice to Interested Parties
- 7. Proof of Notice Certified Mail

# 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:

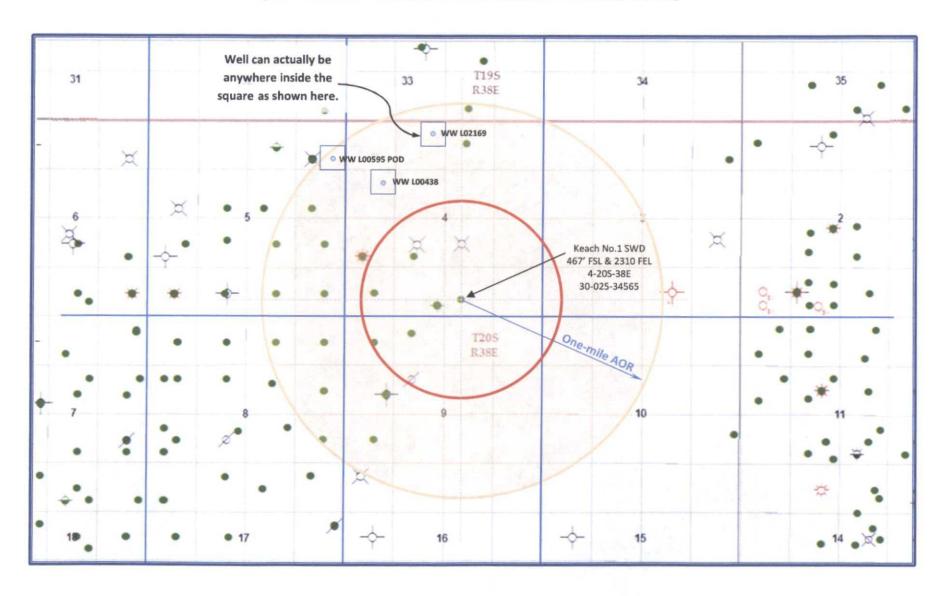
Probity Operating, LLC

Keach Well No.1 Reviewed 2/11/2015

# Keach No.1 SWD - Water Well Spots - 3 within 1 mile

Samples of Nos.02169 & 00438 will be forwarded upon receipt.

(Spots shown are in centered in the closest 2.5 acre Qtr/Qtr/Qtr)



WR File Nbr	Subbasin	Use Diversion	Owner	County	POD Number	Code Grant	Source q64	q16	q4	Sec	Tws	Rng	x	Y	4 4840 NE 0 8844 853
L 00407	L	IRR 240	L.B. TIPPY	LE	L 00407		4	4		03	20S	38E	670773	3607130	(quarters are 1=NW 2=NE 3=SW 4=SE)
				LE	L 00407 S		Shallow 2	2	1					3606927	
				LE	L 00407 S2		2	3	1	03	20S	38E	670371	3607323	•
L 00407 A	Ļ	IND 305.35	CONTINENTAL CARBON COMPANY	LE	L 00407 POD4		Shallow 1	2	2	03	208	,38E	670781	3606727	•
				LE	L 00407 POD5		Shallow 2	2	2	03	208	38E	670581	3606927	•
		•		LE	L 00407 S	R	Shallow 4	2	2	03	20S	38E	670781	3606927	•
				LE	L 02169 POD2		Shallow	2	4	03	20S	38E	669877	3606815	•
1		11.4	1 F	ĻΕ	L 02169 S	÷ =	Shallow 2	2	1	04	205	.38E	669976	3606914	•
L 00438	Ļ	IRR 703.71	CITY OF EUNICE	LΕ	L 00438		Shallow 2	3	1	04	20\$	38E	671980	3607351	•
		:		LΕ	L 00438 S		Shallow 2	2	1	0 <del>5</del>	208	, 38E	671780	3607351	•
L 00595	L .	IRR 410.1	S W CATTLE COMPANY	LE	L 00595		Shallow 1	3	1	05	208	38E	670766	3607733	•
;			•	LE	L 00595 POD3	-	Shallow 4	2	2	05	208	38E	670766	3607533	•
·				LE	L 00595 S	R	Shallow 4	2	3	Ó5	20S	38E	670766	3607533	•
L 11270	Ł	DO 0	LEE M. ROBERTS	LE	L 11270		1	2	1	80	20S	38E	675366	3609430	•
L 11713	L	STK 3	MCNEILL RANCH	LE	L 11713 POD1		Shallow 1	3	2	80	205	38E	672531	3609138	
				LE	L 11713 POD2	•	3	3	2	08	208	38E	672548	3608799	
L 12478 -	L ·	STK 3	LEE M. ROBERTS -	·LE	L 12478 POD1		Shallow 2	1	4	08	20\$	38E	671378	3608423	
L 13401	L	DO 0 M	OSWALDO JUAREZ	LE	L 13401 POD1		3	2	4	80	205	38E	675221	3608637 .	
L 09503	L	STK 0	RON ELLISON	`LE	L 09503		Shallow 4	3	4	10	20S	38E	675215	3606402	•
*UTM location		5: 1	_		20211					_	_	_			
WR File Nor L 00561	L	Use Diversion IRR 127.5	Owner DIXIE H. MAYES	LE	POD Number L 00561 POD11	Code Grant	Source q64 Shallow		q4 4			_	X 675246	Y 3610730	(quarters are 1=NW 2=NE 3=SW 4=SE)
	-	THE PERSON			L 00561 S		Shallow	_		34			675340	3611037	
L 00561 A	L	IRR 4.47			L 00561		Shallow	1		34			674130	3610789	
				-	L 00561 POD10		Shallow	1		34			674235	3610918	•
				LE	L 00561 POD4	R	Shallow	1					674134	3611017	
L 00561 AA	L	AGR 0	H.B. YARBRO	LE	L 00561		Shallow	1	1	34	198	38E	674130	3610789	
i				LE	L 00561 POD4		Shallow	1	1 :	34	198	38E	674134	3611017	•
				LE	L 00561 POD9		Shallow	1	1	34	198 -	38E	674536	3610824	•
L 00561 AB	L	IRR 2.07	SHERMAN SMITH	LE	L 00561	R	Shallow 1	1	1	34	19S	38E	674130	3610789	
				LE	L 00561 POD4	R	Shallow 1	1	1	34	198	38E	674134	3611017	•
				LE	L 00561 POD8		Shallow 1	1	1 :	34	198	38E	674334	3610817	•
L 00561 ABA	L	IRR 0	EUGENE WINKER .	ŁΕ	L 00561 POD8		Shallow 2	1	1 :	34	19S	38E	674334	3610817	•
L 00561 ABB	L	IRR 13.29	JERRY WINKER	LE	L 00561 POD8		Shallow 3	1	1 :	34	195	38E	674334	3610817	•
L 00561 ABBA	L	IRR 14.7	KEN SCHMITT	LE	L 00561 POD8		Shallow 3	1	1 :	34	198	38E	674334	3610817	•
L 00561 ABBB	L	IRR 14.82	DONNA WINKER	LE	L 00561 POD8		Shallow 3	1	1	34	198	38E	674334	3610817	•
L 00561 AC	Ĺ	IRR 56.94	MICHAELENE THOMPSON	LE	L 00561		Shallow 3		1 :		195	38E	674130	3610789	
-				LE	L 00561 POD10		Shallow 3	1	1 :	34	19S	38E	674235	3610918	•
L 00561 AD	L	IRR 194.1			L 00561		Shallow 3	1	1 :	34	19\$	38E	674130	3610789	
					L 00561 POD10		Shallow 3	1	1 :	34	19S	38E	674235	3610918	•
				LE	L 00561 POD8		Shallow 3	1	1 :	34	198	38E	674334	3610817	•
L 00561 AE	L	IRR 1.41	DAYLN WINKER	LE	L 00561		Shallow 3	1	1 :	34	198	38E	674130	3610789	
					L 00561 POD10		Shallow 3	1	1 :	34	1 <b>9</b> S	38E	674235	3610918	•
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				LE	L 00561 POD10			Shallow 4					8E 674235	3610918 *
L 00561 AEB	L	IRR 15	EUGENE WINKER	LE	L 00561			Shallow 4	1				8E 674130	3610789
				LE	L 00561 POD10			Shallow 4	1				8E 674235	3610918
L 00561 AF	L	IRR 29.4	CHESTINA L. BENTLE	LE	L 00561			Shallow 4	1				8E 674130	3610789
				LE	L 00561 POD10	_		Shallow 4	1				8E 674235	3610918
L 00561 B	L	IRR 237.93	MCCASLAND LIMITED PARTNERSHIP	LE	L 00561	R		Shallow 4	1	1	34	19S 3	BE 674130	3610789
			. , , , , , , , , , , , , , , , , , , ,	LΕ	L 00561 POD3	Ŕ		Shallow 1	2	1	34	198 3	8E 674736	3611024 *
				LE	- L 00561 POD5			Shallow 1	2	1	34	198 3	8E 674938	3610831 *
	:			LE	L 00561 POD6			Shallow 2	2	1	34	195 3	8E 674938	3610831 *
				LE	L 00561 S	R		Shallow 2	2	1	34	198 3	8E 675340	3611037 *
L 00561 C	L	IRR 79,2	MICHAEL RAHE	LE	L 00561 POD7			Shallow 2	2	1	34	198 3	8E 675346	3610435
L 00996	Ļ	DO 3	WILDER PORTER .	LE	L 00996 POD1			Shallow 3	2	1	34	195 3	8E 674736	3611024 *
L 01034	L	M DO3 M	LYLE C. STINE	LE	L 01034	₹ ₹	-	Shallow 1	4	1 =	34	195 3	8E ± 675447	. 3610536_*
L 01130	L	DO 3	R V JONES	LE	L 01130 POD1			Shallow 1	4	1	34	198 3	BE 675447	3610536 *
L 01144	<b>L</b> :	DO 3 M	H E RAMSEY REV	LE	L 01144 POD1			Shallow 3	4	1	34	198 3	8E 675540	3610837 *
L 01375	L	STK 3	CHRIS FURNEAUX	LE	L 01375					2	34	198 3	BE 672040	3609870 *
L 01687	L	DO 3 M	E L CURRY	LE	L 01687 POD1			Shallow		2	34	195 3	BE 674736	3611024
L 01783	L	IRR 29.19	H.E. RAMSEY	LE	L 01783	-		Shallow 3	1	2	34	198 3	BE 675540	3611037 *
L 02477	L ·	DO 3	JAMES L BARTON	LE	L 02477			Shallow 3	1				BE 675546	3610435
L 02514	L.	M DO 3	D J YOUNGBLOOD	LE	L 02514				2	2	34	19S 3	BE 674536	3611024
L 02582	L	M DO 3 M	JAMES L BARTON	LE	L 02582			Shallow	2	2	34	198 3	8E 675546	3610435
L 02625	L.	DO 3 M	COLLINS WALKER	. LÉ	L 02625			Shallow 1	2	2	34	198 3	BE 675346	3610435 *
L 02829	L	DO 3	SHERMAN SMITH	LE	L 02829			Shallow 1	2	2	34	198 3	BE 674334	3611017 *
L 02978	L	M DO 3 M	A W BUSCHMAN	LE	L 02978			Shallow 2	2	2	34	198 3	BE 674542	3610621 *
L 03325	Ļ	DO 3 M	FLOYD O HENNINGTON JR	LE	L 03325			Shallow 2	2	2	34	198 3	BE 675540	3611037 **
Ĺ 035 <b>5</b> 8	L	DO 3 M	FLOYD O HENNINGTON JR	LE	L 03558			Shallow 2	2	2	34	198 3	BE 675540	3611037 *
L_03588	L	DO 3 M	J O COURSEY	LE	L 03588			Shallow 2	2	2	34	195 3	BE 675540	3611037 *
L 03955	L	DO 3 M	J E BARTON	LE	L 03955			Shallow 2	2	2	34	198 3	BE 675540	3611037 *
L 04273	L	IRR 6.6	JAMES L. BARTON	LE	L 04273			Shallow 2	2	2	34	19S 3	BE 675546	3610435
L 04678	L	IRR 11.22	D.L. MAYES	LE	L 04678			Shallow 4	2	2	34	198 3	BE 675546	3610435 🔭
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∟ 04970	L	M DO 3 M	JAMES C COONCE	LE	L 04970			2	3	2	34	195 3	BE 675441	3610938 *
L 05154	L	DO 3	D L MAYERS	LE	L 05154			Shallow	4	2	34	198 3	BE 675546	3610435 *
L 05375	L	M DQ 3 M	J L BARTON	LE	L 05375			Shallow	4	2 .	34	19S 3	BE - 675546	3610435 *
L 06310	L	DOL 3	LLOYD W WHITE	LE	L 06310				4	2	34	19S 3	BE 675441	3610938 *
L 07327	L .	DO 3 M	T C HENNINGTON	LE	L 07327			Shallow	4	2	34	195 3	BE 675346	3610435 *
L 08612	L	DOL 0	B. L. LILLEY	LE	L 08612			Shallow 3	4	.2	34	19S 3	BE 675447	3610536 *
L 08613	L	DOL 3	B. L. LILLEY	LE	L 08613			Shallow 3	4	2	34	198 38	BE 675447	3610536 *
L 10425	L	MUL 3	CHARLES W. JENNINGS	LE	L 10425			Shallow 3	4	2	34	198 38	BE 674542	3610421 •
L 10451	L	DO 3	MICHAEL RAHE	LE	L 10451			Shallow 4	4	2	34	19S 38	BE 675546	3610435 *
L 11014	Ł	M DO 3 M	BETTY WHITE	LE	L 11014			Shallow 4	4	2	34	198 38	BE 675246	3610730 *

L 12343	L.	ĐO 1 M	JOSE HERNANDEZ	LE	L 12343 POD1		Shallow 4	4	2	34	195	38E	674433	3610730		
L 12851	L	DO 1 M	CHESTINA BENTLE	LE	L 12851 POD1		Shallow 4	4	2	34	195	38E	674459	3610592		
L 13067	ا با	SAN 1	SCHUBERT CONSTRUCTION	LE	L 13067 POD1		Shallow 4	4	2	34	198	38 <b>E</b>	675159	3610532		
L 13144	Ĺ	DO 1 M	ANDREA CAIRENS	i,E	L 13144 POD1		Shallow 4	4	2	34	19S	38€	675486	3611075		
L 13183	L	DO 3	ALBERT C. EWING	LE	L 01442	•	Shallow 4	4	2	34	19\$	38 <b>E</b>	675540	3610837 *		
L 13769	Ĺ	ĐO 1 M	MANUEL MATA	LE	L 13769 POD1	-	Artesian 4	4	2	34	198	38E	674182	3611391		
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#### Keach Well No.1 - Leasehold Plat

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

				T20S	R38E	
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	Г.4		Т	.6	T.10	
	T.3	T.2	₀T.1	T.7	T.11	
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#### - LEGEND -

T.1 - Hess	Corporation	/ Roberts
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T.2 - JTD Resources, LLC / Roberts

T.3 - Tamarack Petroleum Co. / Roberts

T.4 - Chevron USA, Inc. / McNeil

T.5 - Primero Operating / Kinimaka

T.6 - Hess Corporation / Kinimaka

T.7 - Chevron USA, Inc. / Roberts

T.8 - JTD Resources, LLC

T.9 - Hess Corporation / Kinimaka

T.10 - / Kaethe Kinimaka, et al

T.11 - ExxonMobil / Roberts

T.12 - / L.M. Roberts

T.13 - Chevron USA, Inc. / Roberts

T.14 - JTD Resources, LLC / Roberts

T.15 - Tamarack Petroleum Company, Inc. / McCasland

T.16 - Tamarack Petroleum Company, Inc. / McCasland

T.17 - / C.S. Eldridge

Note: All tracts identified are Fee Lease / Private Landowner



# C-108 ITEM XIII – PROOF OF NOTIFICATION INTERESTED PARTIES LIST Amendment to Original List

This listing is only for those additional parties identified during a secondary review of the application pursuant to comments by Phillip Goetze in an email on January 8, 2015.

Additional Notification Sent (All Notified via USPS Certified Mail)

#### **SURFACE OWNER(S)**

- 1 C.S. ELDRIDGE 44 Long Branch Ave Etobicoke, ON M8W3H9.
- 2 KAETHE KINIMAKA Pineapple Mauka Circle Ocean View, HI 96737

#### **OFFSET MINERALS LESSEES**

- 3 JTD RESOURCES, LLC 415 West Wall Street Midland, TX 79701
- 4 EXXONMOBIL 503 South Marienfeld Street Midland, TX 79701

#### **REGULATORY (C-108 Amendment Package)**

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

NEW MEXICO OCD DISTRICT 1 OFFICE (FedEx'ed copy) 1625 N. French Drive Hobbs, New Mexico 88240





February 11, 2015

### NOTIFICATION TO INTERESTED PARTIES Via U.S. Certified Mail

To Whom It May Concern:

Probity Operating, LLC, Midland, Texas, has made application to the New Mexico Oil Conservation Division to convert for salt water disposal its Keach Well No.1. The proposed SWD will be a commercial operation used for disposal of produced water from area operations. As indicated in the notice below, the well is located in Section 4, Township 20 South, Range 38 East in Lea County, New Mexico.

The disposal interval will be through perforations from a maximum top depth of 4440 feet to a maximum bottom depth of 5355 feet in the Lower San Andres formation. Exact intervals will be based on further log analysis.

Following is the legal notice published recently in the Hobbs News-Sun, Hobbs, New Mexico.

#### **LEGAL NOTICE**

Pursuant to the rules and regulation of the Oil Conservation Division of the State of New Mexico, Probity SWD, LLC, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the Keach #1, API 30-025-34565, located in Unit O, Section 4, Township 20 South, Range 38 East, 467 FSL & 2310 FED, Lea County, NM. The injection formation is the lower San Andres formation 4440'-5355 below surface. Expected maximum injection rate is 10,000 bpd and the expected maximum injection pressure of 800 psi or what the OCD allows. Any questions about the application can be directed to Amithy Crawford (432)570-1122 PO Box 7307, Midland, TX 79707, or any objection or requires for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87505, within fifteen (15) days.

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.

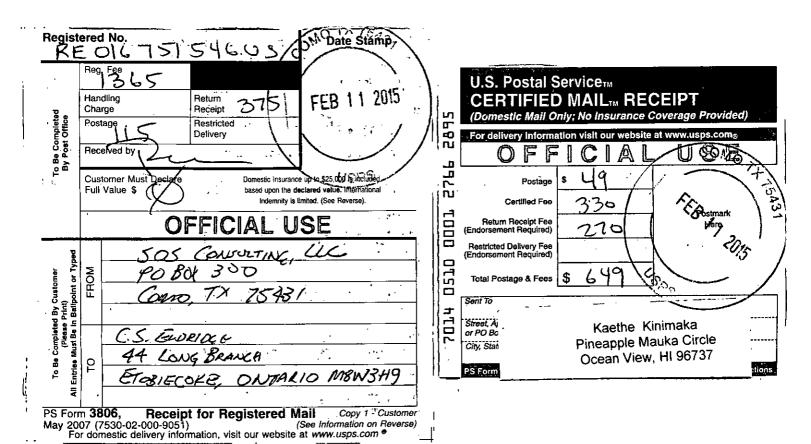
Best regards,

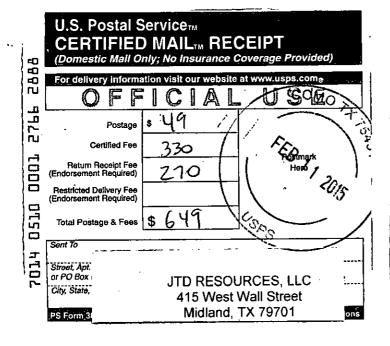
Ben Stone, SOS Consulting, LLC Agent for Probity Operating, LLC

Cc: Application File

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

Proof of Notice (Certified Mail Receipts)





87]		Service <sub>TM</sub> D MAIL <sub>TM</sub> RE(  Only; No Insurance C		d)
40	For delivery information	ation visit our website	at www.usps.coma	
LU	OFF	ICIAL	. USE	COA
756	Postage	\$ 330		70
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February 18, 2015

G A BABER

PROBITY SWD

P. O. BOX 1772

HOBBS, NM 88241

RE: KEACH #1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 02/04/15 13:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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 <a href="https://www.tceq.texas.gov/field/qa/jab\_accred\_certif.html">www.tceq.texas.gov/field/qa/jab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated 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.

Celey D. Keine

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



PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD

Project Number: NONE GIVEN Project Manager: G A BABER

Fax To:

Reported: 18-Feb-15 16:20

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
#1	H500318-01	Water	04-Feb-15 12:45	04-Feb-15 13:20
#2	H500318-02	Water	04-Feb-15 12:45	04-Feb-15 13:20
#3	H500318-03	Water	04-Feb-15 12:45	04-Feb-15 13:20

Cardinal Laboratories

\*=Accredited Analyte

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Celeng D. Kenne

Reported:

18-Feb-15 16:20



#### Analytical Results For:

PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD

Project Number: NONE GIVEN .

Project Manager: G A BABER

Fax To:

#1 11500318-01 (Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	al Laborat	ories					
Inorganic Compounds										
Alkalinity, Bicarbonate	264		5.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	. 1	5020506	AP	06-Feb-15	310.1	
Chloride*	72.0	•	4.00	mg/L	1	5020408	AP	05-Feb-15	4500-CI-B	
Conductivity*	820		1.00	uS/em	1	5020605	AP	06-Feb-15	120,1	
pH*	7.62		0.100	pH Units	I	5020603	AP	06-Feb-15	150.1	
Sulfate*	91.0		25.0	mg/L	2,5	5020504	ΑP	05-Feb-15	375,4	
TDS*	492		5.00	mg/L	1	5012305	AP	05-Feb-15	160.1	
Alkalinity, Totat*	216		4.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
		C	Green Analy	ytical Labo	oratories					
Total Recoverable Metals by IC	CP (E200.7)									
Calcium*	73.1		0.020	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
Magnesium*	16.8		0.100	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	

mg/L

mg/L

B502076

B502076

JGS

JGS

09-Feb-15

09-Feb-15

EPA200.7

EPA200.7

1.00

0.250

Cardinal Laboratories

Potassium\*

Sodium\*

\*=Accredited Analyte

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Celey & Keine

Celey D. Keene, Lab Director/Quality Manager

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PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD

Project Number: NONE GIVEN Project Manager: G A BABER

Fax To:

Reported: 18-Feb-15 16:20

#2 H500318-02 (Water)

				`						
Analyte	Result	Re MDL	porting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Note
		c	Cardina	l Laborat	ories					
Inorganic Compounds										
Alkalinity, Bicarbonate	303		5.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
Alkalinity, Carbonate	ND		0.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
Chloride*	56.0		4.00	mg/L	1	5020408	AP	05-Feb-15	4500-Cl-B	
Conductivity*	788		1.00	uS/cm	1	5020605	AP	06-Feb-15	120.1	
pH*	7.52		0.100	pH Units	1	5020603	AP	06-Feb-15	150,1	
Sulfate*	72.0		25.0	mg/L	2.5	5020504	AP	05-Feb-15	375.4	
ΓDS*	502		5.00	mg/L	1	5012305	AP	05-Feb-15	160.1	
Alkalinity, Total*	248		4.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
		Green	n Analy	ytical Labo	oratories					
Total Recoverable Metals by IC	P (E200.7)									
Calcium*	72.2		0.020	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
Magnesium*	21.9		0.100	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
Potassium*	3.67		1.00	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
Sodium*	59.4		0.250	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	

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Celeg D. Keene



PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD

Project Number: NONE GIVEN
Project Manager: G A BABER

Fax To:

Reported:

18-Feb-15 16:20

#### #3 11500318-03 (Water)

	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
			Cardina	ıl Laborat	ories					
	224		5.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
	ND		0.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
	68.0		4.00	mg/L	1	5020408	ΑÞ	05-Feb-15	4500-C1-B	
	689	•	1.00	uS/em	'n	5020605	AP	06-Feb-15	120.1	
	7.85		0.100	pH Units	1	5020603	AP	06-Feb-15	150.1	
	70.4		10.0	mg/L	1	5020504	AP	05-Feb-15	375,4	
	436		5.00	mg/L	1	5012305	AP	05-Feb-15	160.1	
	184		4.00	mg/L	1	5020506	AP	06-Feb-15	310.1	
		(	Green Analy	ytical Lab	oratories					
by ICP (E200.7	.7)									
	71.5		0.020	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
	12.2		0.100	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
	2.86		1.00	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
	48.0		0.250	mg/L	1	B502076	JGS	09-Feb-15	EPA200.7	
					t 1					

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Celeng & Kune



PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD
Project Number: NONE GIVEN
Project Manager: G A BABER

Reported: 18-Feb-15 16:20

Fax To:

#### Inorganic Compounds - Quality Control

#### **Cardinal Laboratories**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 5012305 - Filtration										
Blank (5012305-BLK1)				Prepared &	k Analyzed:	23-Jan-15				
TDS	ND	5.00	mg/L							
LCS (5012305-BS1)	,			Prepared &	Analyzed:	23-Jan-15				
TDS	514	5.00	mg/L	527		97,5	80-120		•	
Duplicate (5012305-DUP1)	Sou	rce: H500220	04	Prepared &	k Analyzed:	23-Jan-15				
TDS	572	5.00	mg/L		584			2.08	20	
Batch 5020408 - General Prep - Wet Chem										
Blank (5020408-BLK1)				Prepared &	k Analyzed:	04-Feb-15				
Chloride	ND	4.00	mg/L	·						
LCS (5020408-BS1)				Prepared &	k Analyzed:	04-Feb-15				
Chloride	104	4.00	mg/L	100		104	80-120			
LCS Dup (5020408-BSD1)				Prepared &	k Analyzed:	04-Feb-15				
Chloride	100	4.00	mg/L	100		100	80-120	3,92	20	
Batch 5020504 - General Prep - Wet Chem	· <b>-</b>									
Blank (5020504-BLK1)				Prepared &	k Analyzed:	05-Feb-15				
Sulfate	ND	10.0	mg/L							
LCS (5020504-BS1)				Prepared &	k Analyzed:	05-Feb-15				
Sulfate	21.4	10,0	mg/L	20.0	-	107	80-120			

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Celey D. Keene



PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD Project Number: NONE GIVEN

Project Number: NONE GIVEN
Project Manager: G A BABER

Reported: 18-Feb-15 16:20

Fax To:

**Inorganic Compounds - Quality Control** 

#### **Cardinal Laboratories**

		Reporting		C-21.	C		%REC		RPD	
Analyte	Result	Keporting Limit	Units	Spike Level	Source Result	%REC_	Limits	RPD	Limit	Notes
Batch 5020504 - General Prep - Wet Chem	_									
LCS Dup (5020504-BSD1)				Prepared &	Analyzed:	05-Feb-15				
Sulfate	21.2	10.0	mg/L	20.0		601	80-120	0.939	20	
Batch 5020506 - General Prep - Wet Chem										
Blank (5020506-BLK1)				Prepared: 0	05-Feb-15 A	nalyzed: 0	6-Feb-15			
Alkalinity, Carbonate	ND	0.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L			•				
Alkalinity, Total	ND	4.00	mg/L							
LCS (5020506-BS1)				Prepared: (	05-Feb-15 A	nalyzed: 0	6-Feb-15			
Alkalinity, Carbonate	ND	0,00	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 (5020506-BSD1)				Prepared: (	05-Feb-15 A	analyzed: 0	6-Feb-15			
Alkalinity, Carbonate	ND	0.00	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 5020603 - General Prep - Wet Chem										
LCS (5020603-BS1)				Prepared &	k Analyzed:	06-Feb-15	,			
pH	7.08		pH Units	7.00	·	101	90-110			
Duplicate (5020603-DUP1)	Sou	rce: H500306	Prepared &	ż Analyzed:						
pH	7.14	0.100	pH Units		7.14			0.00	20	

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Celent Keene



PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD

Project Number: NONE GIVEN Project Manager: G A BABER

Fax To:

Reported: 18-Feb-15 16:20

#### **Inorganic Compounds - Quality Control**

#### **Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 5020605 - General Prep - Wet Chem										
LCS (5020605-BS1)				Prepared &	Analyzed:	06-Feb-15				
Conductivity	507		uS/cm	500		101 -	80-120			
Duplicate (5020605-DUP1)	Source: II500306-01 Prepared & Analyzed: 06-Feb-15									
Conductivity	2340	1.00	uS/cm		2350			0,256	. 20	

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Celen X. Kenne



PROBITY SWD P. O. BOX 1772 HOBBS NM, 88241 Project: KEACH #1 SWD

Project Number: NONE GIVEN

Project Manager: G A BABER

Fax To:

Reported: 18-Feb-15 16:20

#### Total Recoverable Metals by ICP (E200.7) - Quality Control

#### **Green Analytical Laboratories**

		Reporting		Spike	Source	-	%REC		RPD			
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes		
Batch B502076 - Total Recoverable, Direct Analysis E200.7/E200.8												
n												

Blank (B502076-BLK1)				Prepared & Anal	lyzed: 09-Feb-15				
Magnesium	ND	0,100	mg/L						
Calcium	ND	0.020	mg/L						
Sodium	ND	0.250	mg/L						
Potassium	ND	1.00	mg/L						
LCS (B502076-BS1)				Prepared & Ana	lyzed: 09-Feb-15				
Magnesium	24.8	0.100	mg/L	25.0	99.3	85-115			
Potassium	10.4	1.00	mg/L	10.0	104	85-115			
Sodium	8.29	0,250	mg/L	8.10	102	85-115			
Calcium	4.63	0.020	mg/L	5.00	92.6	85-115			
LCS Dup (B502076-BSD1)				Prepared & Ana	lyzed: 09-Feb-15				
Potassium	10.4	1.00	mg/L	10.0	104	85-115	0,593	20	
Magnesium	24.8	0.100	mg/L	25.0	99.4	85-115	0.0949	20	
Calcium	4.64	0.020	mg/L	5.00	92.8	85-115	0.260	20	
Sodium	8.23	0.250	mg/L	8.10	. 102	85-115	0.648	20	

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\*=Accredited Analyte

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Celeg D. Keens



#### **Notes and Definitions**

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

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Celeg & Kenne



#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

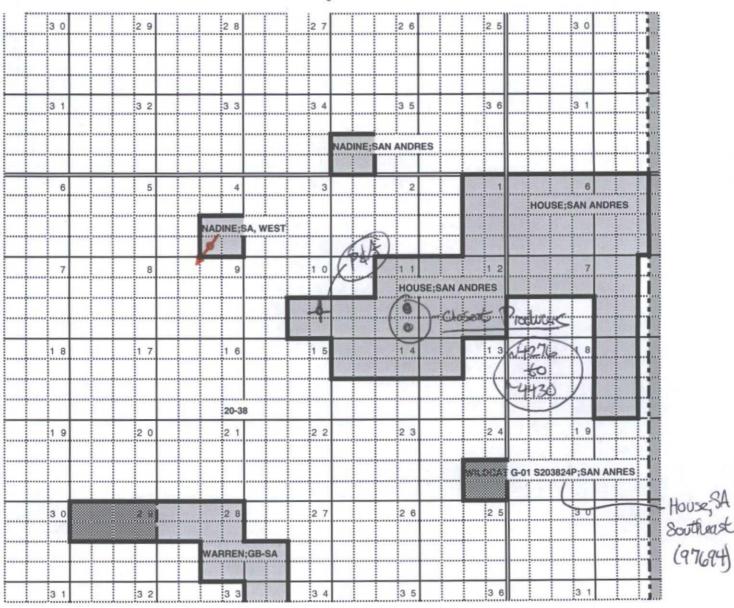
101 East Mariand, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

	14 . 1	ac. 15 visi	(17.1	
C-108 Review Checklist:	Received 1914 Add. Reque	eststrom Ke	O Reply Date:	Suspended: [Ver 15]
ORDER TYPE: WFX / PMX / SWD				
Well No. Well Name(s): Keach	0 SWD-892	, Paddock	5884' to 6070'; ex	pired 2501) Appl.
API: 30-0 25-34565 spud	( ( ) - · · · · · · · · · · · · · · · · · ·			7 Novi d. ACO 1 For SCUID Primacy 03/07/1982)
Footages 467 FSL / 2310 FEL Lo	or Unit <u>O</u> Sec <u>4</u>	Tsp <u>20</u>	5 Rge 38E	County Lea
General Location: ~6 miles & of Hobbs/west	of SR18 Pool:	SWD: Par SWD: Sor	i Andres	Pool No. 9612
BLM 100K Map: Hobbs Operator: Pro	obity SWD LLC	<b>Nadi'ile</b> OGRID	San Andres; SE :Contac	t: For Stone
COMPLIANCE RULE 5.9: Total Wells: Ina	. U			
WELL FILE REVIEWED & Current Status: PAA	; prior SWD well in	Poddale	; produce from	n Son Andres
WELL DIAGRAMS: NEW: Proposed O or RE-ENTE	:R: Before Conv. (V After C	onv. L	ogs in Imaging:	
Planned Rehab Work to Well: Prill out plugs	s to proposed casing	Rudooth	(new people);	CIBP: perf: runtubing
Sizas (in)	Setting	) <u> </u>	Cement	Cement Top and
Well Construction Details Borehole / Pipe	•	·	Sx or Cf	Determination Method
Planned _or Existing \( \surface \) Surface	0 to 1577	Stage Tool	475	Or. to surface
Planned_or Existing Vinterm/Prod	5/2 1 to 7895	None	1205	2710'/Caic*
Planned_or Existing _Interm/Prod				
Planned_or Existing Prod/Liner			_ ~	
Planged_or Existing _ Liner				
Planned Describing OH PERF 778 51/2	. H440' to 5355'	Inj Length	<u>Completion</u>	/Operation Details:
Injection Lithostratigraphic Units: Depths (ft)	Injection or Confining	Tops	Drilled TD 792	I PBTD PAA
. ,	Units	T	4 11	WANGEW PBTD 5455
Adjacent Unit: Litho. Struc. Por.  Confining Unit: Litho.) Struc. Por.  1 366	Grandura	4074		or NEW Perfs ()
Proposed Inj Interval TOP: 4440	San Andres Fm	4218		in. Inter Coated?
Proposed Inj Interval BOTTOM: 5355		<u> </u>	Proposed Packer Do	(10)(1/)
Confining Unit Litho Struc (Por.)	6 Gjorieta	5531		4340 (100-ft limit)
Adjacent Unit: Litho. Struc. Por.	"Blinebry	5992		ace Press. 600 - 1200 si
AOR: Hydrologic and Geologic	<del></del>	. As	Admin. Inj. Press	
POTASH: R-111-PNo Noticed? NA BLM Sec	Ord 🥙 WIPP 🤲 Noticed?	A Salt/Sa	lado T:B:	NW: Cliff House fm
FRESH WATER: Aquifer O Gall da But	1 RosaMax Dept 10 2 50 2	< <i>Б</i> фу <sub>рво</sub>	O AFFIRM STATEME	NT By Qualified Person 🔾
1	F: thru⊖ adj⊖ NA®			
Disposal Fluid: Formation Source(s) Son An	dres	? Historica	on Lease Operate	or Only () o Commercial
Disposal Int: Inject Rate (Avg/Max BWPD):i0000	Protectable Water	rs? <u><b>No</b>s</u>	ource: Anlaysis _s	System: Closed or Open
HC Potential: Producing Interval? 6 Formerly	Producing? <u>165</u> Method:	Logs/DS7/P	&A/Other	2-Mile Radius Pool Map
AOR Wells: 1/2-M Radius Map? 165 Well Lis	t? Yes Total No. Wells P	enetrating Ir	nterval: 8	
Penetrating Wells: No. Active Wells 17_Num Rep	airs?on which well(s)?_		<u>-</u>	1
Penetrating Wells: No. P&A Wells 1 Num Repai	rs?on which well(s)?			Diagrams?_ <u>YeS</u>
NOTICE: Newspaper Date 1113 2014 Mine	ral Owner Private		owner Private	N. Dare OZ II ZO 5
RULE 26.7(A): Identified Tracts? Yes Affected F	Persons: HCSS JID Res	Tamarael		
Order Conditions: Issues: Lint during	PAA/ports/ colc.	<u> </u>	Eldringe / Kinim	aka 411/13/4
Add Order Cond: CBL for 51/2-in	casing; cont a	por (	CIBP	

## Production Info On San Andres



Nadire; SA, West: R-11304 01/12/2000
Keach \*/ is discovery pool has no other producers
well well