October 2019

C-147 Registration Package for Dagger 2 Recycling Containment and Recycling Facility Section 30, T21-S, R33-E, Lea County

View to south near the southern boundary of the adjacent Dagger pond operated by Advance Energy, LLC that will be the location of the Dagger 2 containment.

Prepared for:
Advance Energy Partners, LLC
11490 Westheimer Rd. STE 950
Houston, TX 77077

Prepared by:
R.T. Hicks Consultants, Ltd.
901 Rio Grande NW F-142
Albuquerque, New Mexico

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745
Artesia ▲ Carlsbad ▲ Durango ▲ Midland

October 25, 2019

Mr. Bradford Billings
Mr. Jim Griswold
for NMOCD District 1
Via E-Mail

RE: Advance Energy Partners LLC – Dagger 2 Containment and Recycling Facility

Dear Mr. Billings and Mr. Griswold:

On behalf of Advance Energy Partners LLC, Hicks Consultants submits the attached registration. The package follows the order of Form 147 to allow for an easier review. Construction began in May and will be complete by the end of October. Lining of the containment will also be complete by late October 2019.

The following elements of the submission are germane to your review.

A. Engineering drawings stamped by a NM Registered Engineer are attached for NMOCD prior to storage of produced water.
B. In compliance with 19.15.34.10 of the Rule, this submission is copied to the New Mexico State Land Office, who is the surface owner of the surface upon which the containment will be constructed.
C. Site specific information demonstrates compliance with siting criteria for the location.
D. Water well logs from the OSE database are included as appendices at the end of the submission.
E. Photographs of the site and environs are included in this submission to provide assistance in the review.

No variances from the Rule are necessary and this submittal demonstrates compliance with all mandates of the Rule for the containment. Since the recycling facility meets the criteria of 19.15.34.9.B.7, the facility also requires a registration. Thus, the Rule does not require approval by OCD in advance of using the containment.

This submission refers to the following elements that some reviewers have considered variances:

1. An equivalency demonstration written by experts for the proposed 40-mil HDPE secondary liner has been previously approved by OCD. We maintain that the language of the Rule is clear[1] and a variance is not required. The previously-submitted equivalency demonstration is lengthy and we can submit it under separate cover if requested by OCD.
2. OCD has approved the proposed Avian Protection Plan (Bird-X Mega Blaster Pro) for other containments. Thus, the plan meets the requirement of the rule that the "otherwise protective of wildlife, including migratory birds" and a variance is not required.
3. Using a 6-foot high chain link and/or game fence in lieu of a 4-strand barbed wire fence is not a variance. Because feral pigs, javelina and deer are present in the area, a fence is required in

[1] Secondary liners shall be 30-mil LLDPE string reinforced or equivalent with a hydraulic conductivity no greater than 1 x 10-9 cm/sec

order to comply with Section 19.15.34.12 D.1 of the Rule[2]. The specification for fencing provided in 19.15.34.12 D.2 contradicts D.1 because pigs will move beneath the lower strand of a 4-strand, 4-foot high barbed wire fence and deer will jump over. Thus, compliance with D.2 results in a violation of D.1. We maintain that compliance with D.1 is the critical component of the Rule and operators need not be required to submit a variance request in order to follow Best Management Practices and comply with the Rule.

If you have any questions or concerns regarding this registration or the attached C-147, please contact me. As always, we appreciate your work ethic and attention to detail.

Sincerely,
R.T. Hicks Consultants

Erica M. Hart
Geologist

Copy: Advance Energy Partners LLC, Dave Harwell
Advance Energy Partners LLC, Don Glover
New Mexico State Land Office

[2] The operator shall fence or enclose a recycling containment in a manner that deters unauthorized wildlife and human access and shall maintain the fences in good repair.

Site Photographs

Figure 1 - North Berm of existing Dagger Pond.

Figure 2 - Topsoil stockpile for existing Dagger Pond in the NW corner of Dagger 2 site.

Figure 3 - View to southwest from top of stockpile.

Figure 4 - View of existing Dagger Pond situated north of the stockpile.

Figure 5 - Stockpile from northwest corner of site facing east.

Figure 6 - The southwest corner of the Dagger 2 site facing northeast.

Figure 7 - Large sand dune along southwest corner of the site.

Figure 8 - Pad northwest of Dagger 2 site.

Figure 9 - Exposed caliche in cut wall of westernmost pad.

Figure 10 - Pad northwest of Dagger 2 site (east of Figure 8).

Figure 11 - Existing Dagger Pond east of the caliche pad from Figure 10.

C-147

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-147
Revised April 3, 2017

Recycling Facility and/or Recycling Containment

Type of Facility: ☒ Recycling Facility ☒ Recycling Containment*

Type of action: ☐ Permit ☒ Registration
☐ Modification ☐ Extension
☐ Closure ☐ Other (explain) _____

*** At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.**

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.

Operator: : Advance Energy Partners, LLC OGRID #: 372417

Address: 11490 Westheimer Rd. STE 950, Houston, TX 77077

Facility or well name (include API# if associated with a well): Dagger 2 Containment

OCD Permit Number: _____(For new facilities the permit number will be assigned by the district office)

U/L or Qtr/Qtr _____ Section 30 Township 21S Range 33E County: Lea

Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.

☒ **Recycling Facility:**

Location of (if applicable): Latitude 32.448103 Longitude -103.607381 NAD83 (Approximate)

Proposed Use: ☒ Drilling* ☒ Completion* ☒ Production* ☒ Plugging *

The re-use of produced water may NOT be used until fresh water zones are cased and cemented

☐ Other, ***requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.***

☒ Fluid Storage

☐ Above ground tanks ☒ Recycling containment ☐ Activity permitted under 19.15.17 NMAC explain type_____

☐ Activity permitted under 19.15.36 NMAC explain type:_____ ☐ Other explain _____

☐ For multiple or additional recycling containments, attach design and location information of each containment

☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date:_____

3.

☒ **Recycling Containment:** Each of the two containments will have these characteristics

☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)

Center of Recycling Containment (if applicable) Latitude 32.446192° Longitude -103.605155° NAD83 (Approximate)

☐ For multiple or additional recycling containments, attach design and location information of each containment

☒ Lined ☐ Liner type: Thickness __Secondary 40_mil Primary 60 mil ☐ LLDPE ☒ HDPE ☐ PVC ☐ Other _____

☐ String-Reinforced

Liner Seams: ☒ Welded ☐ Factory ☐ Other _ Volume: 1,000,000 bbl Dimensions: (Inside dimensions) L 686 x W 692 x D 21' below levee

☐ Recycling Containment Closure Completion Date:_____

4.

Bonding:

☒ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**

☐ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond $_____ **(work on these facilities cannot commence until bonding amounts are approved)**

☐ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

Fencing:

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☒ Alternate. Please specify Game fence or chain link

6.

Signs:

☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

If a Variance is requested, it must be approved prior to implementation.

8.

Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment. NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells FIGURES 1-2	☐ Yes ☒ No ☐ NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3	☐ Yes ☒ No ☐ NA
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5	☐ Yes ☒ No
Within a 100-year floodplain. FEMA map FIGURE 6	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; visual inspection (certification) of the proposed site FIGURE 7	☐ Yes ☒ No
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; aerial photo; satellite image FIGURE 8	☐ Yes ☒ No
Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. FIGURES 1 and 7 - NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within 500 feet of a wetland. FIGURE 9 - US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site	☐ Yes ☒ No

9.

Recycling Facility and/or Containment Checklist:

Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☒ Design Plan - based upon the appropriate requirements.
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☒ Closure Plan - based upon the appropriate requirements.
- ☒ Site Specific Groundwater Data -
- ☒ Siting Criteria Compliance Demonstrations –
- ☒ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.

~~Operator Application Certification~~:

I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Don Glover Title: Facility Engineering Consultant

Signature: Don Glover Date: 10/22/2019

e-mail address dglover@advanceenergypartners.com Telephone: 832-316-9005

11.

OCD Representative Signature: _____ **Approval Date:** _____

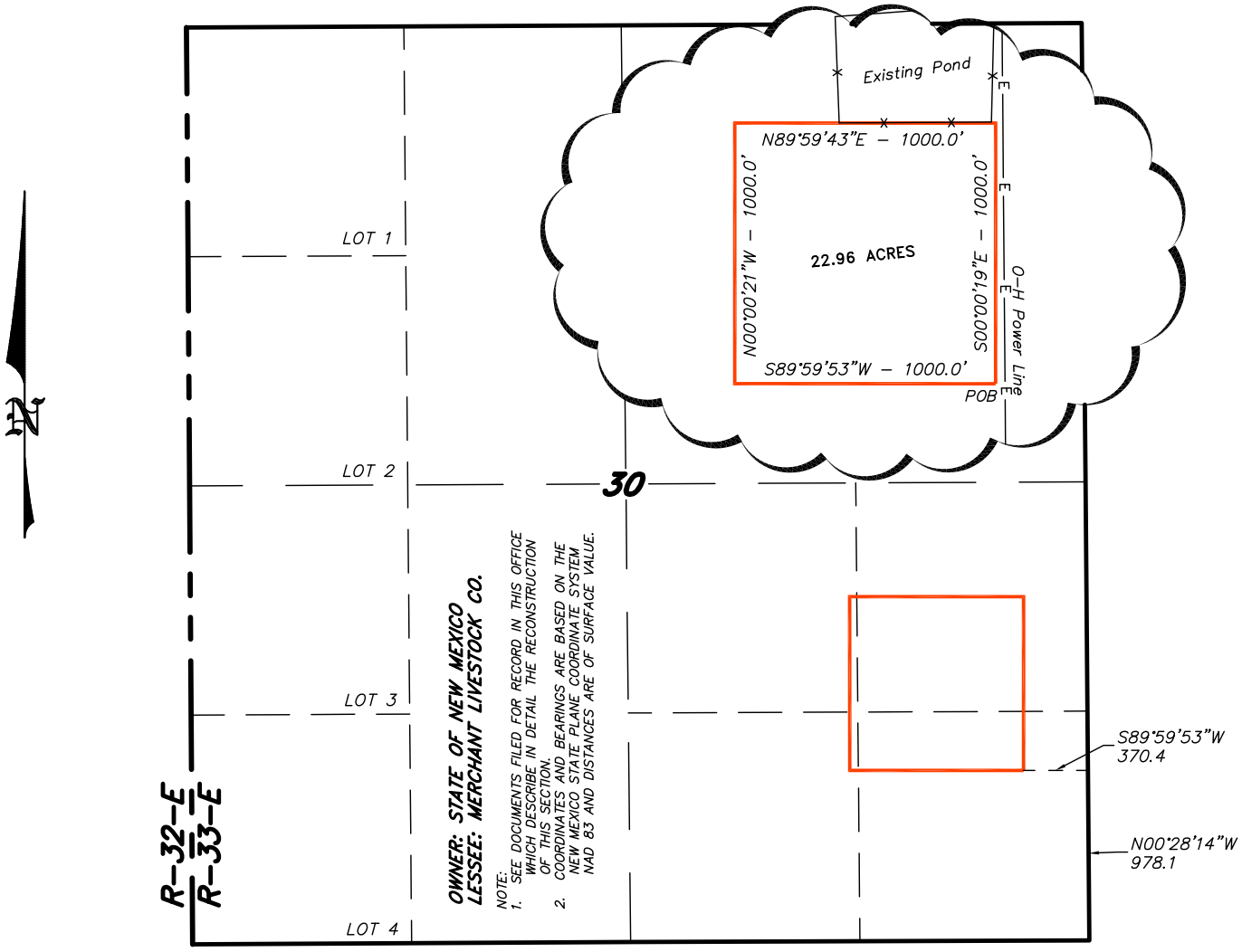
Title: _____ **OCD Permit Number:** _____

☐ OCD Conditions _____

☐ Additional OCD Conditions on Attachment

Survey For Containment and Recycling Facility

SECTION 30, TOWNSHIP 21 SOUTH, RANGE 33 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



LEGAL DESCRIPTION

A TRACT OF LAND LOCATED IN SECTION 30, TOWNSHIP 21 SOUTH, RANGE 33 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH LIES N.00°28'14"W., 978.1 FEET AND S.89°59'53"W., 370.4 FEET FROM THE SOUTHEAST CORNER OF SAID SECTION 30; THENCE S.89°59'53"W., 1000.0 FEET; THENCE N.00°00'21"W., 1000.0 FEET; THENCE N.89°59'43"E., 1000.0 FEET; THENCE S.00°00'19"E., 1000.0 FEET TO THE POINT OF BEGINNING. SAID TRACT OF LAND CONTAINING 22.96 ACRES, MORE OR LESS, AND BEING ALLOCATED BY FORTIES AS FOLLOWS.

SE/4SE/4	7.38 ACRES	NW/4SE/4	0.67 ACRES
SW/4SE/4	0.37 ACRES	NE/4SE/4	14.54 ACRES

1000 0 1000 2000 FEET

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, N.M. P.S. No. 7977
TEXAS R.P.L.S. No. 5074

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

basin surveys
focused on excellence in the oilfield

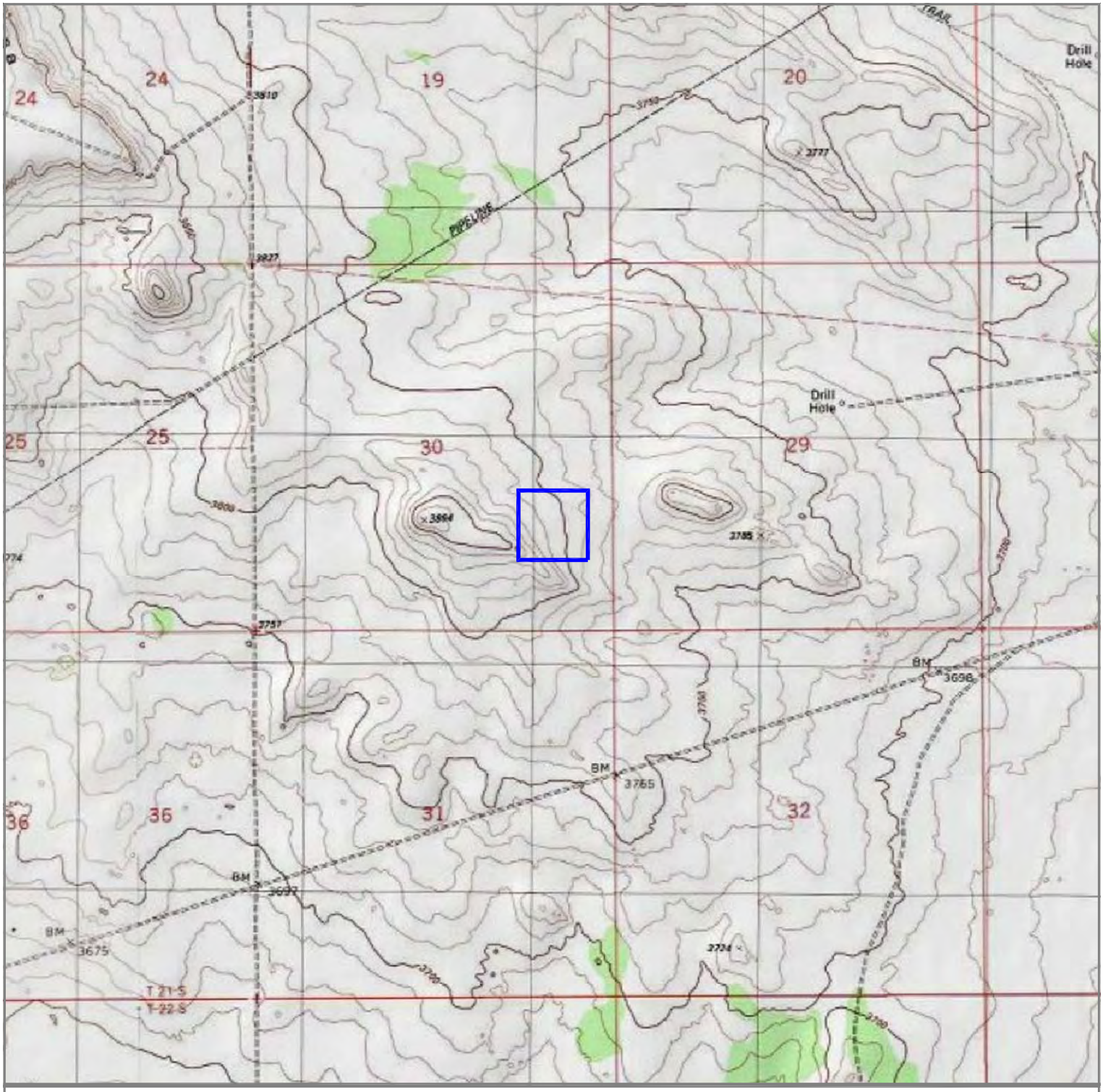
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

ADVANCE ENERGY PARTNERS, LLC

REF: PROPOSED DAGGER POND #2

A TRACT OF LAND LOCATED ON STATE LAND IN SECTION 30, TOWNSHIP 21 SOUTH, RANGE 33 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 34452	Drawn By: K. GOAD	Date: 03-22-2019	Survey Date: 03-21-2019	Sheet 1 of 1 Sheets



PROPOSED DAGGER POND #2

Section 30 Township 21 South, Range 33 East,
N.M.P.M., Lea County, New Mexico.

basin surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

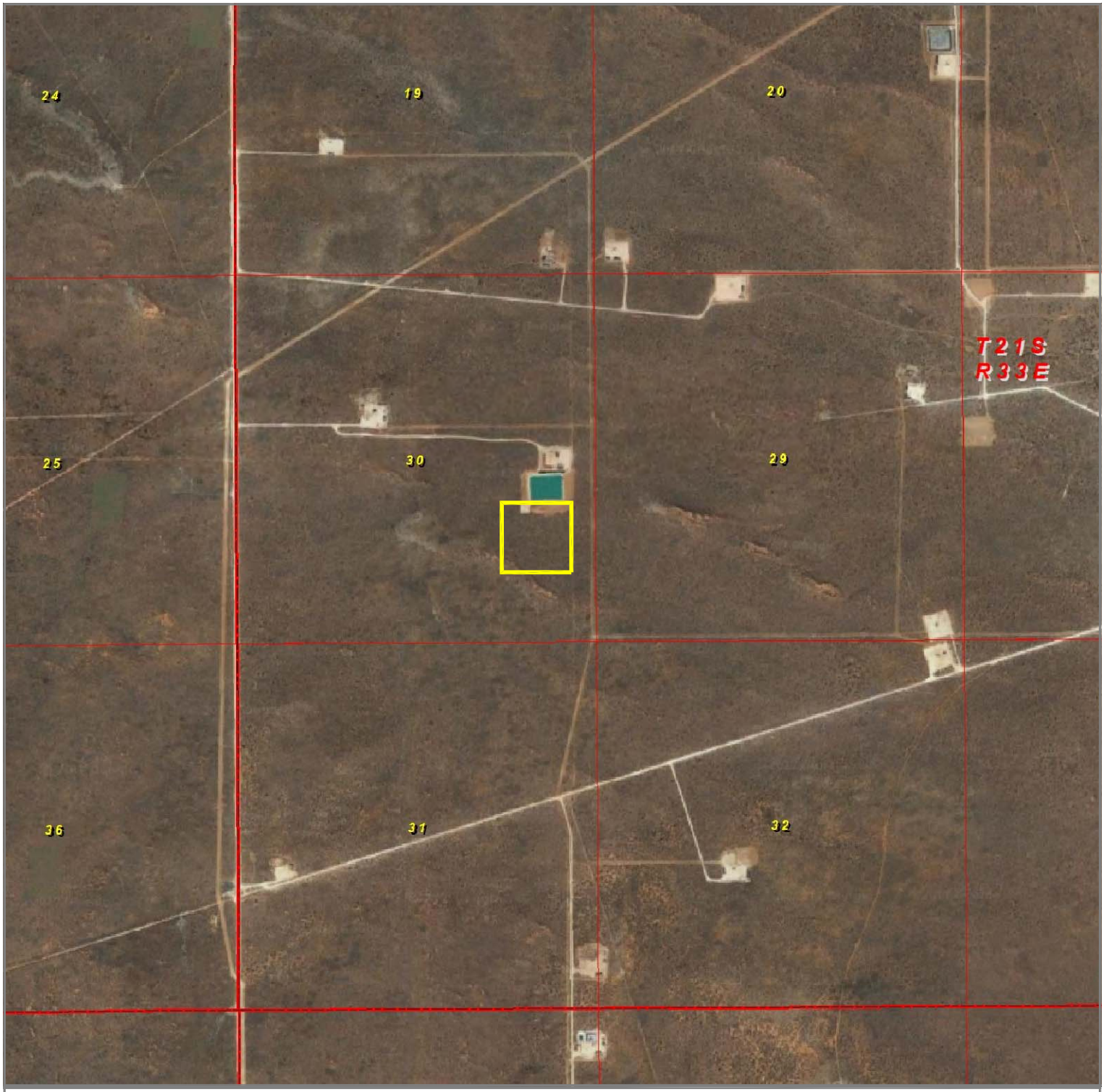
W.O. Number: KJG – 34452

Survey Date: 03-21-2019

YELLOW TINT – USA LAND
BLUE TINT – STATE LAND
NATURAL COLOR – FEE LAND

N

ADVANCE ENERGY PARTNERS, LLC



PROPOSED DAGGER POND #2

Section 30 Township 21 South, Range 33 East,
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(575) 393-7316 – Office
(575) 392-2206 – Fax
basinsurveys.com

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

W.O. Number: KJG – 34452

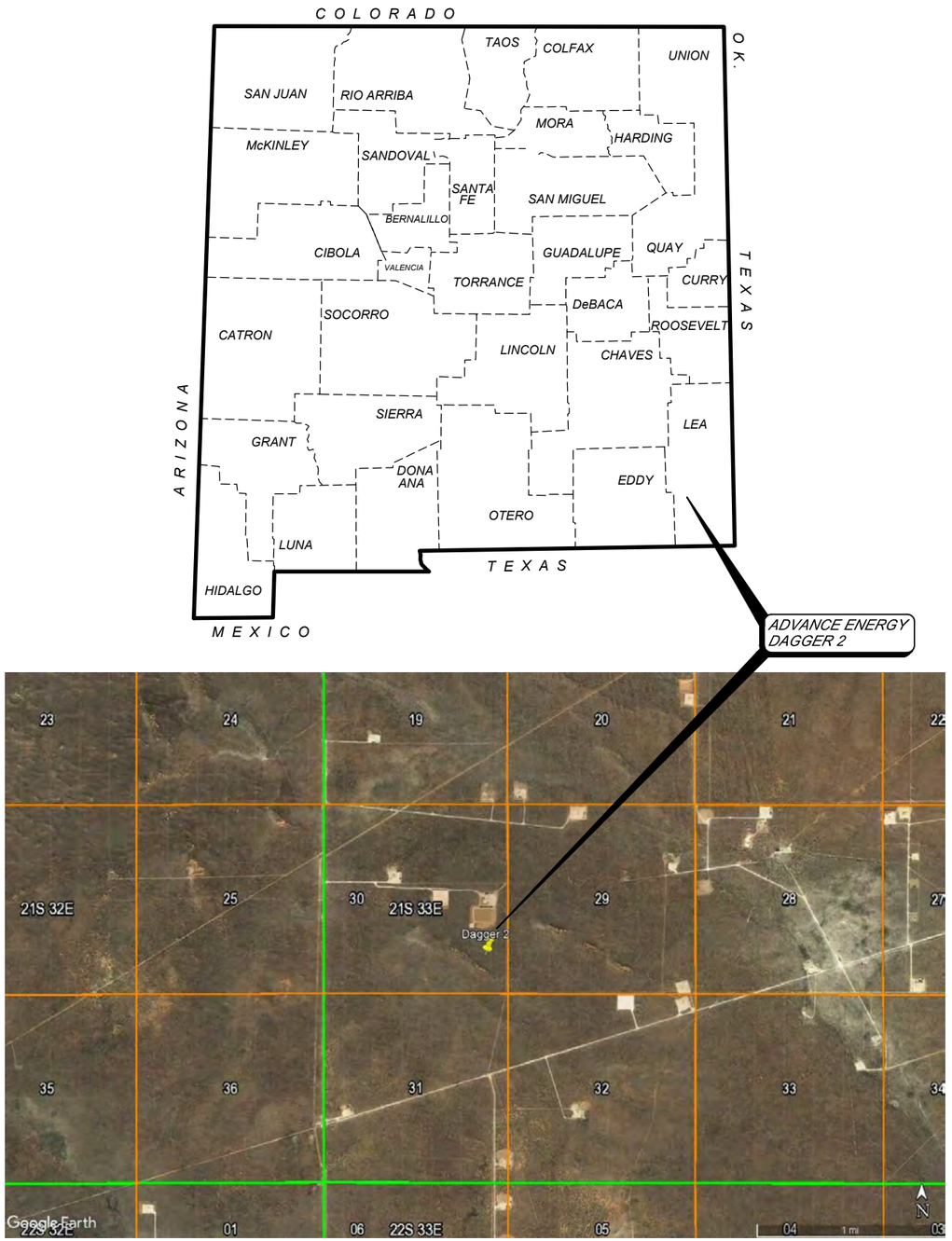
Survey Date: 03-21-2019

YELLOW TINT – USA LAND
BLUE TINT – STATE LAND
NATURAL COLOR – FEE LAND

N

ADVANCE ENERGY PARTNERS, LLC

RECYCLING CONTAINMENT DESIGN DRAWINGS



ADVANCE ENERGY PARTNERS, LLC

DAGGER 2 PRODUCED WATER RECYCLING CONTAINMENT
S30 T21S R33E
LEA COUNTY, NM

INDEX OF SHEETS

GENERAL NOTES

1. ALL BOUNDARY, TOPOGRAPHIC AND UTILITY INFORMATION SHOWN ARE BASED ON SURVEY INFORMATION FURNISHED BY BASIN SURVEYS, LLC.
2. THE CONTRACTOR SHALL IDENTIFY AND LOCATE UTILITY LINES, MONITORING WELLS, SURVEY MONUMENTS, AND OTHER NEARBY STRUCTURES PRIOR TO PERFORMING WORK.
3. COORDINATE INFORMATION IS BASED ON STATE PLANE COORDINATES, NEW MEXICO EAST, NAD 83. THE CONTRACTOR SHALL IDENTIFY ANY DISCREPANCIES PRIOR TO PROCEEDING WITH CONSTRUCTION.
4. ALL GEOMEMBRANES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

Magrym Consulting Inc.
1510 North Acres Drive
Lovington, NM 88260
(719) 332-8665
www.magrym.com
TBPE F-19848

R-X	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		

Advance Energy Partners, LLC
11490 Westheimer Rd.
Suite 950
Houston, TX 77077
(832) 672 4700
www.advanceenergypartners.com

DAGGER 2 PRODUCED WATER RECYCLING CONTAINMENT
S30, T21S, R33E
LEA COUNTY, NM
ADVANCE ENERGY PARTNERS, LLC

COVER SHEET

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 5/10/2019	DESIGNED BY:
PROJECT NO. 19-120	CHECKED BY:
SUBSET: COVER	SHEET: 1COVER

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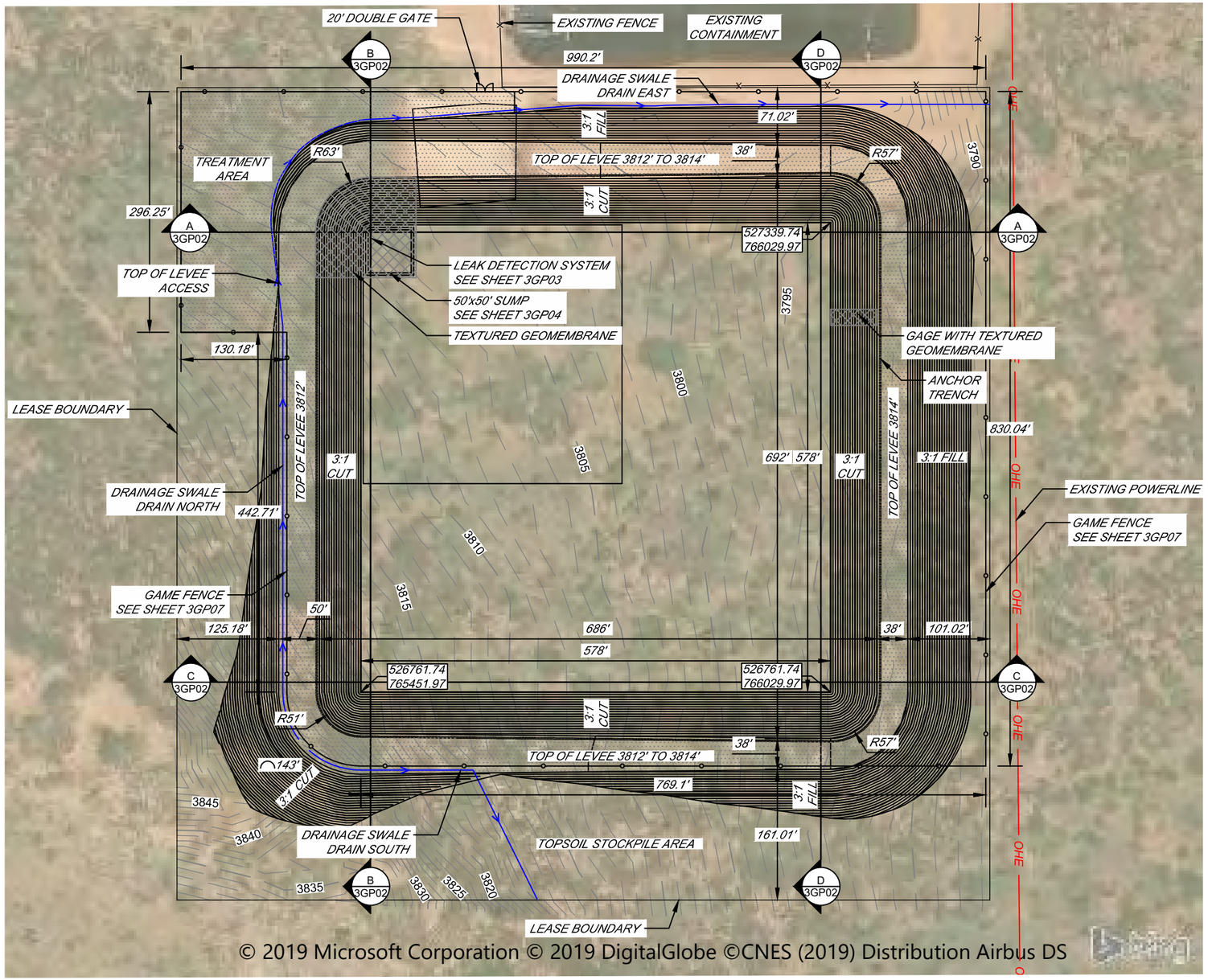

LEGEND

- EXISTING GRADE CONTOURS
- FINISHED GRADE CONTOURS
- DEER FENCE
- ANCHOR TRENCH
- DRAINAGE SWALE
- RUB SHEET
- DRIVING SURFACE

SUMMARY OF QUANTITIES

ITEM	UNIT	QTY
CLEARING AND GRUBBING	ACRE	23
ESTIMATED TOPSOIL (18" AVERAGE)	CUBIC YARD	55,567 (BANK)
ESTIMATED CUT (INCLUDING TOPSOIL)	CUBIC YARD	162,441 (BANK)
ESTIMATED FILL (ABOVE EXISTING GRADE)	CUBIC YARD	107,766 (BANK)
GAME FENCE	LINEAR FEET	3,637
20' DOUBLE GATE	EACH	1
4' WALK GATE	EACH	1
60 MIL HDPE GEOMEMBRANE (TEXTURED)	SQUARE FEET	16,843
60 MIL HDPE GEOMEMBRANE (SMOOTH)	SQUARE FEET	492,693
200 MIL GEONET	SQUARE FEET	492,693
40 MIL HDPE GEOMEMBRANE	SQUARE FEET	492,693
10 OZ. GEOTEXTILE	SQUARE FEET	492,693
6" HDPE DR11 PIPE WITH PERFORATIONS IN SUMP	LINEAR FEET	115
DRAIN ROCK	CUBIC YARD	1
ANCHOR TRENCH	LINEAR FEET	2,656
DRAINAGE DITCH	LINEAR FEET	1,936

STAGE-STORAGE

ELEVATION (FT)	PIT VOLUME (BBL)
3791	0
3792	0
3793	167
3794	725
3795	8,066
3796	18,879
3797	104,960
3798	166,316
3799	228,924
3800	292,793
3801	357,935
3802	424,358
3803	492,073
3804	631,417
3805	703,066
3806	776,045
3807	850,366
3808	962,037
3809	1,003,069
3810	1,081,471
3811	1,161,253
3812	1,242,425

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
5/10/2019

Magrym Consulting Inc.
1510 North Acres Drive
Lovington, NM 88260
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Suite 950
Houston, TX 77077
(832) 672 4700
www.advanceenergypartners.com

DAGGER 2 PRODUCED WATER RECYCLING CONTAINMENT
S30, T21S, R33E
LEA COUNTY, NM
ADVANCE ENERGY PARTNERS, LLC

GRADING PLAN

HORIZONTAL SCALE: 1" = 150'	VERTICAL SCALE: NTS
PRINT DATE: 5/10/2019	DESIGNED BY:
PROJECT NO. 19-120	CHECKED BY:
SUBSET: GRADING PLANS	SHEET: 3GP01

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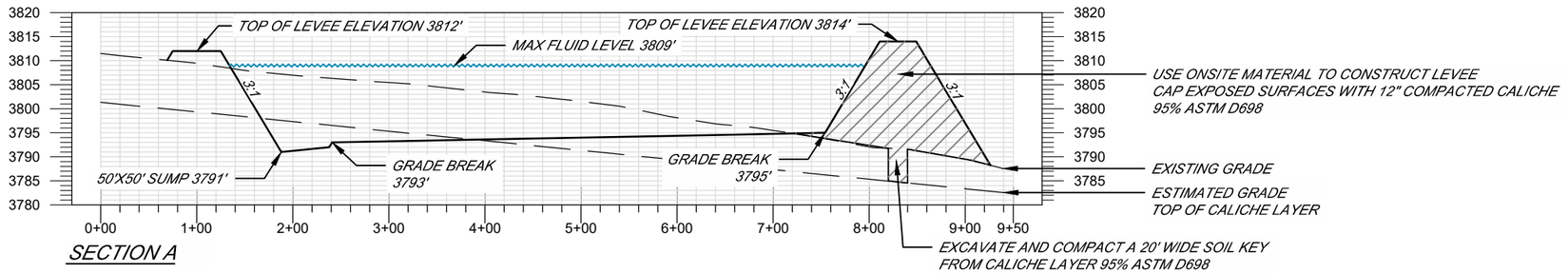
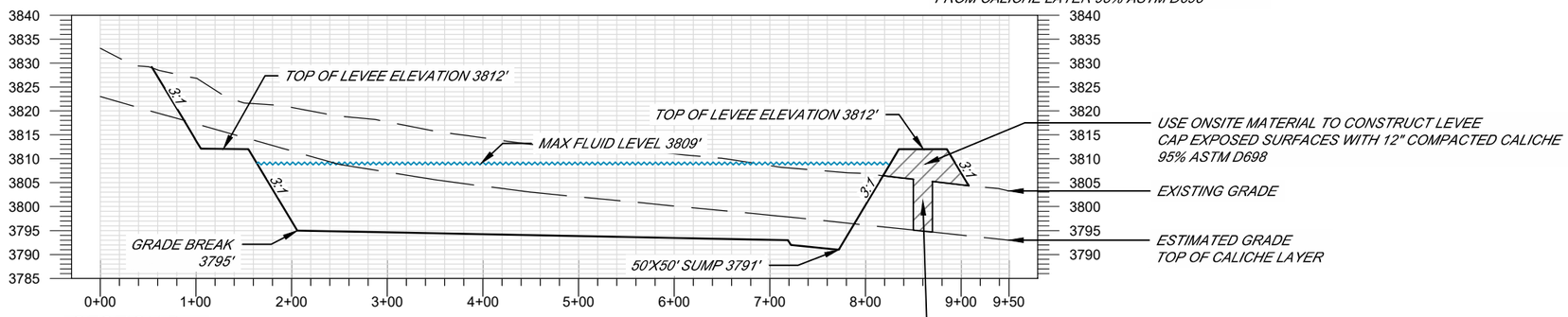


SECTION A



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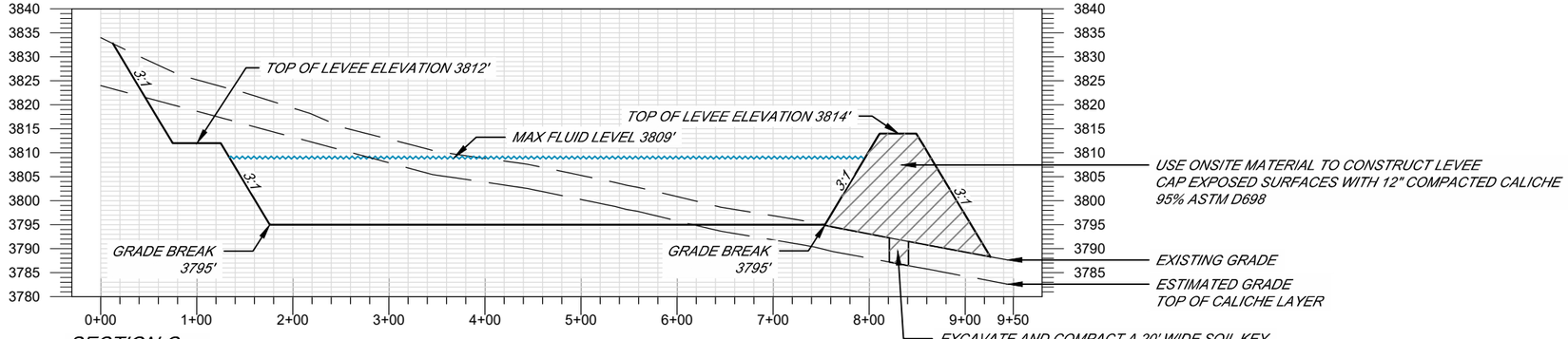

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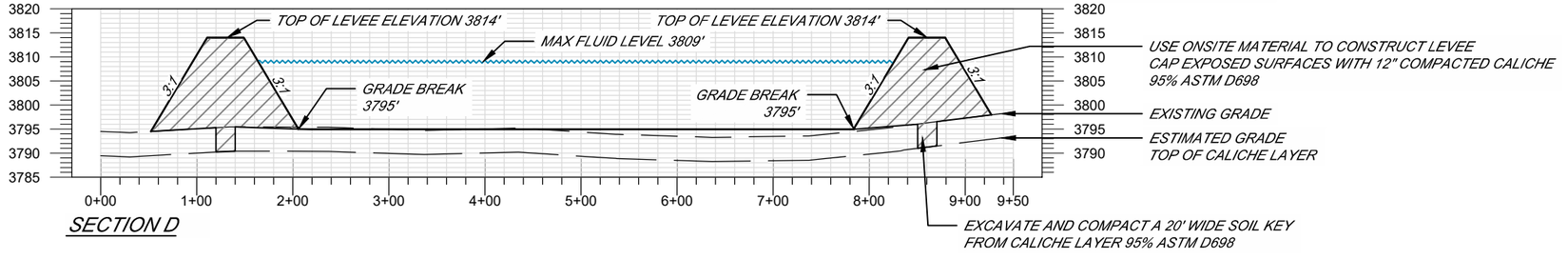

SECTION D

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER

5/10/2019

Magrym Consulting Inc.
1510 North Acres Drive
Lovington, NM 88260
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R-X	DESCRIPTION	DATE	BY
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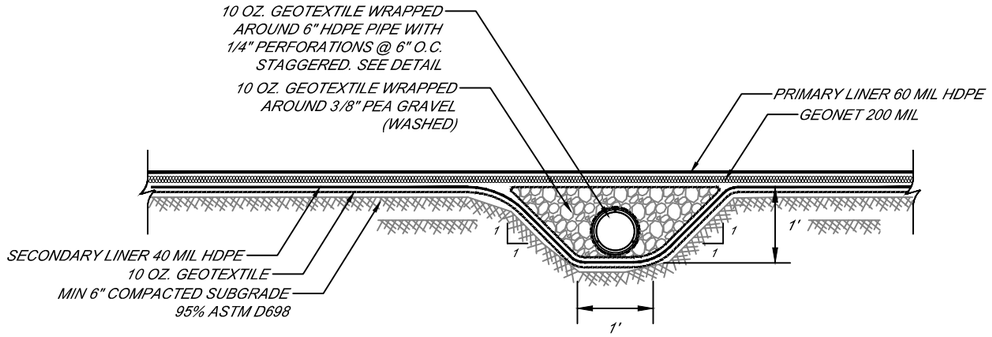
Suite 950
Houston, TX 77077
(832) 672 4700
www.advanceenergypartners.com

DAGGER 2 PRODUCED WATER RECYCLING CONTAINMENT
S30, T21S, R33E
LEA COUNTY, NM
ADVANCE ENERGY PARTNERS, LLC

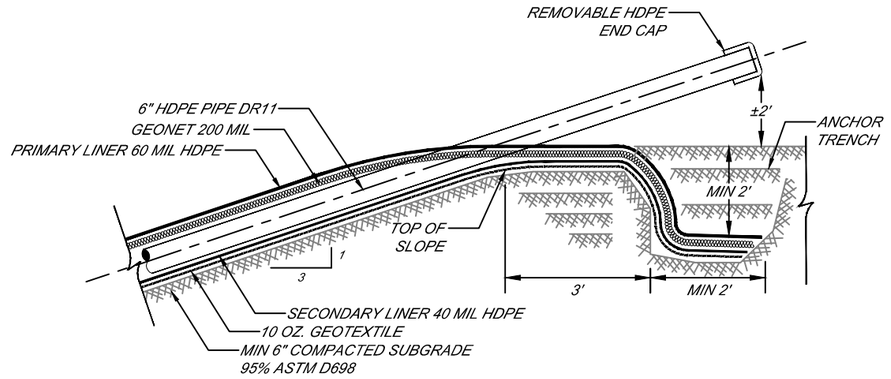
GRADING PLAN

HORIZONTAL SCALE: 1" = 150'	VERTICAL SCALE: 1" = 30'
PRINT DATE: 5/10/2019	DESIGNED BY:
PROJECT NO. 19-120	CHECKED BY:
SUBSET: GRADING PLANS	SHEET: 3GP02

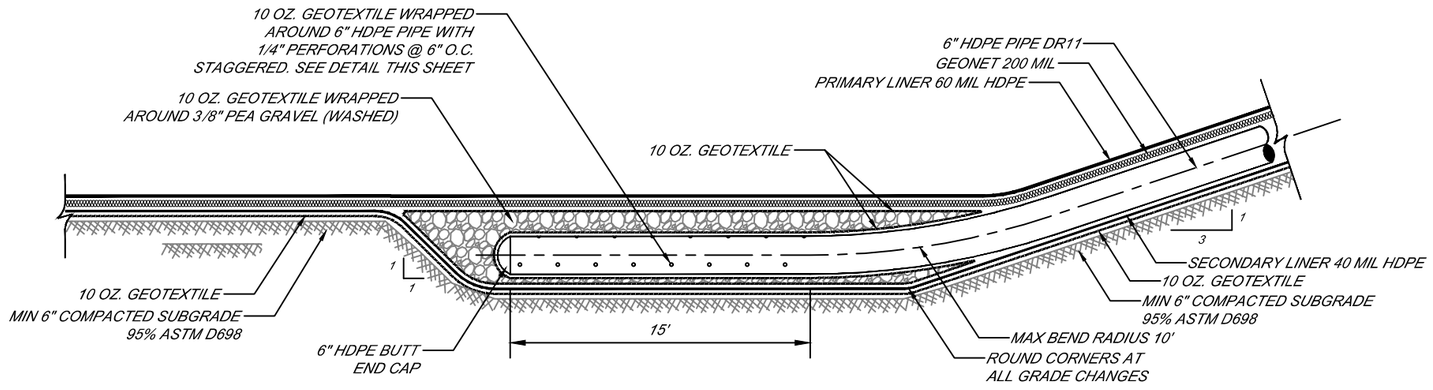
Drawing File: Z:\19-120 Advance Energy_Dagger 2\04_CIVIL\CADD\Design\Drawings\19-120 Grading.dwg



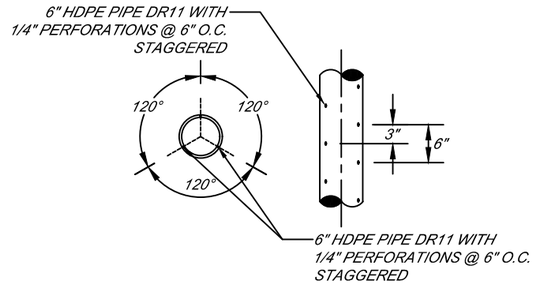
1 3GP03 **LEAK DETECTION SYSTEM SECTION A**
NOT TO SCALE



2 3GP03 **LEAK DETECTION SYSTEM PIPE RISER**
NOT TO SCALE



3 3GP03 **LEAK DETECTION SYSTEM SECTION B**
NOT TO SCALE



4 3GP03 **LEAK DETECTION SYSTEM PERFORATED PIPE**
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
5/10/2019

Magrym Consulting Inc.
1510 North Acres Drive
Lovington, NM 88260
(719) 332-8665
www.magrym.com
TBPE F-19848

R-X	DESCRIPTION	DATE	BY
	REVISIONS (OR CHANGE NOTICES)		

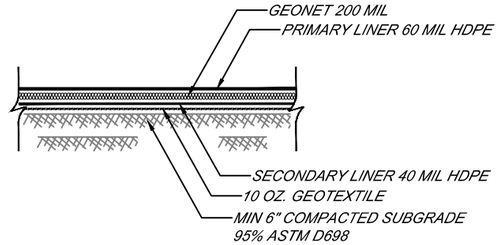
Advance Energy Partners, LLC
11490 Westheimer Rd.
Suite 950
Houston, TX 77077
(832) 672 4700
www.advanceenergypartners.com

DAGGER 2 PRODUCED WATER RECYCLING CONTAINMENT
S30, T21S, R33E
LEA COUNTY, NM
ADVANCE ENERGY PARTNERS, LLC

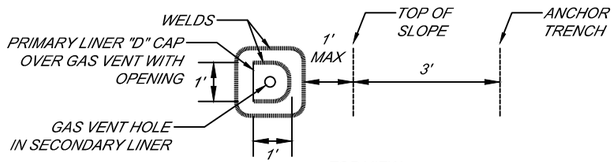
DETAILS

HORIZONTAL SCALE: NTS	VERTICAL SCALE: NTS
PRINT DATE: 5/10/2019	DESIGNED BY:
PROJECT NO. 19-120	CHECKED BY:
SUBSET: GRADING PLANS	SHEET: 3GP03

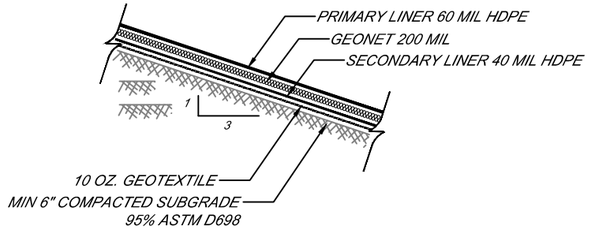
Drawing File: Z:\19-120 Advance Energy_Dagger 2\04_CIVIL\CADD\Design\Drawings\19-120 Details.dwg



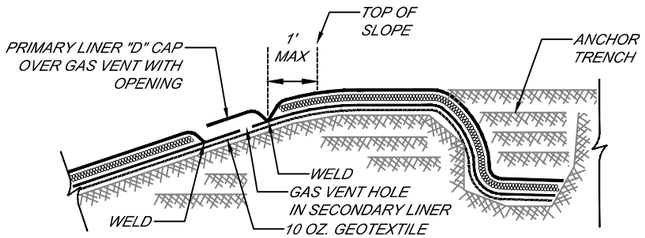
1 / 3GP04 **TYPICAL POND BOTTOM LINER**
NOT TO SCALE



TOP VIEW



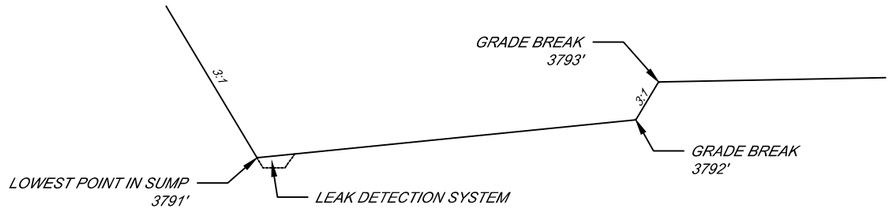
2 / 3GP04 **TYPICAL POND SLOPE LINER**
NOT TO SCALE



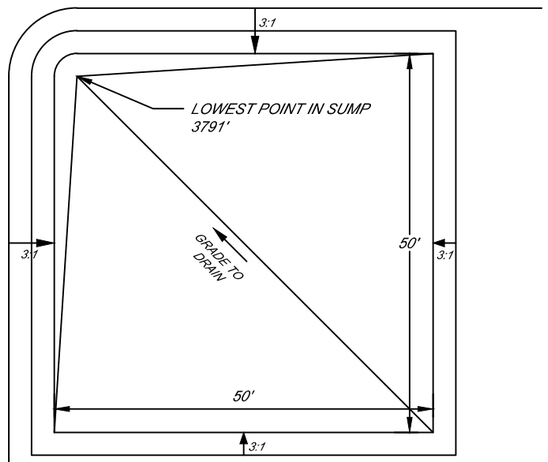
SIDE VIEW

NOTE:
GAS VENT SPACING SHALL BE INSTALLED
PER MANUFACTURER'S RECOMMENDATIONS

4 / 3GP04 **TYPICAL GAS VENT**
NOT TO SCALE

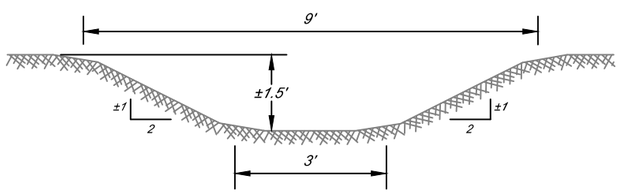


SIDE VIEW



TOP VIEW

5 / 3GP04 **SUMP DETAIL**
NOT TO SCALE



3 / 3GP04 **TYPICAL DRAINAGE SWALE**
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1510 North Acres Drive
Lovington, NM 88260
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SUBSET: GRADING PLANS	SHEET: 3GP04

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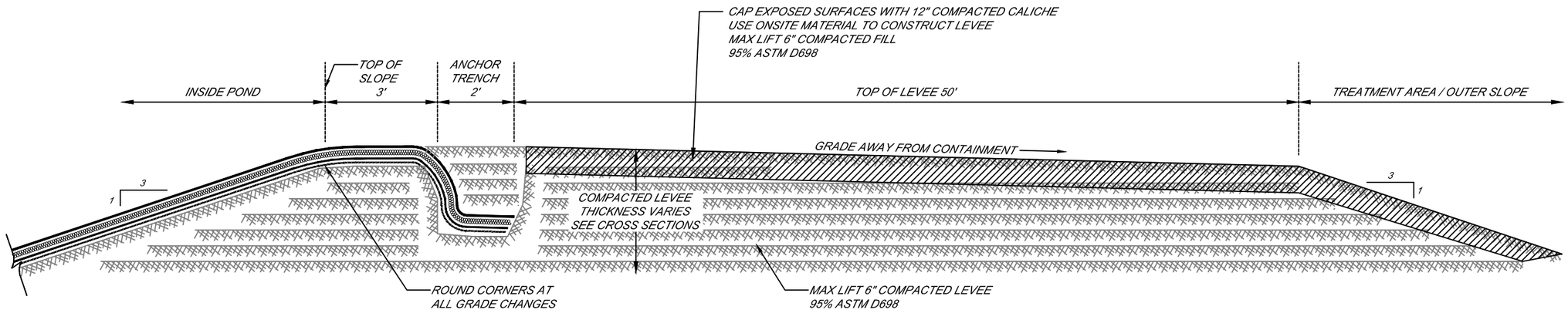

1 / 3GP05 **TYPICAL LEVEE SECTION**
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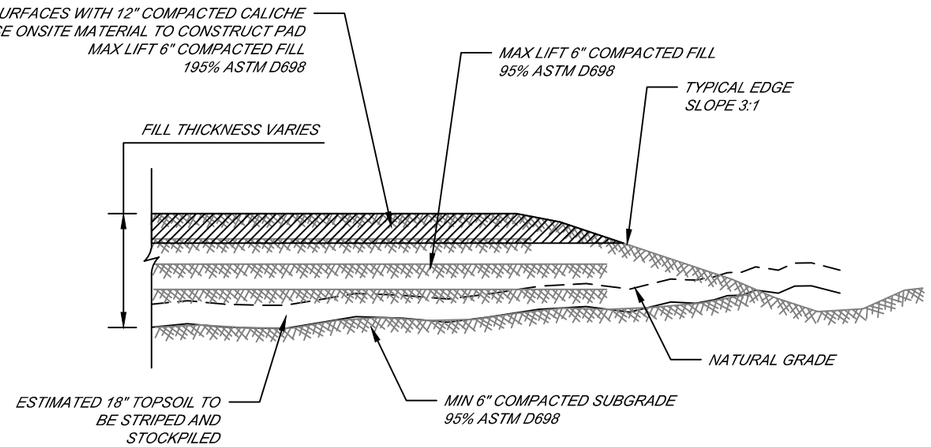

2 / 3GP05 **TYPICAL TREATMENT PAD SECTION**
NOT TO SCALE

CLAUDIUS SANCHEZ CZYZEWSKA
NEW MEXICO
22897
PROFESSIONAL ENGINEER
5/10/2019

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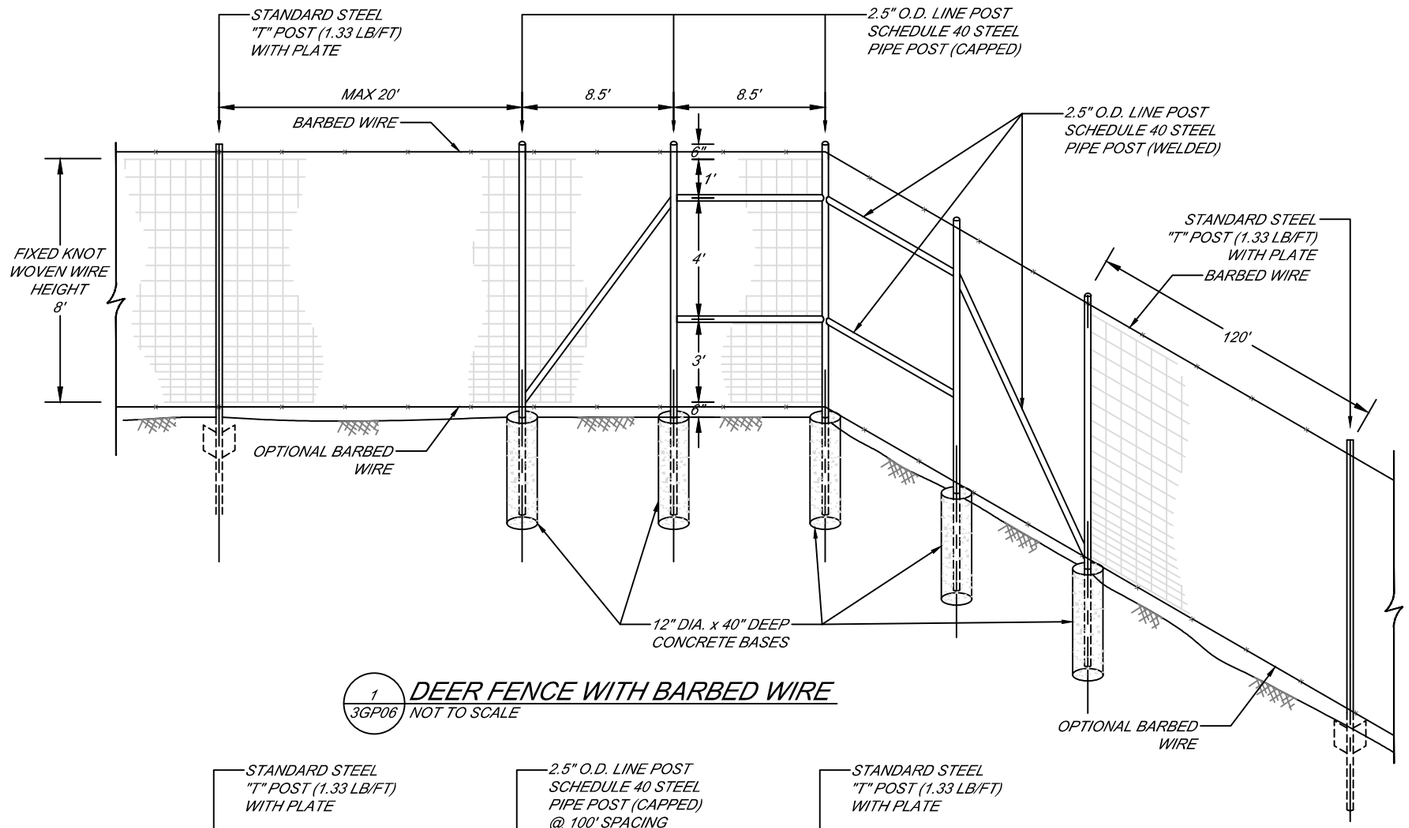
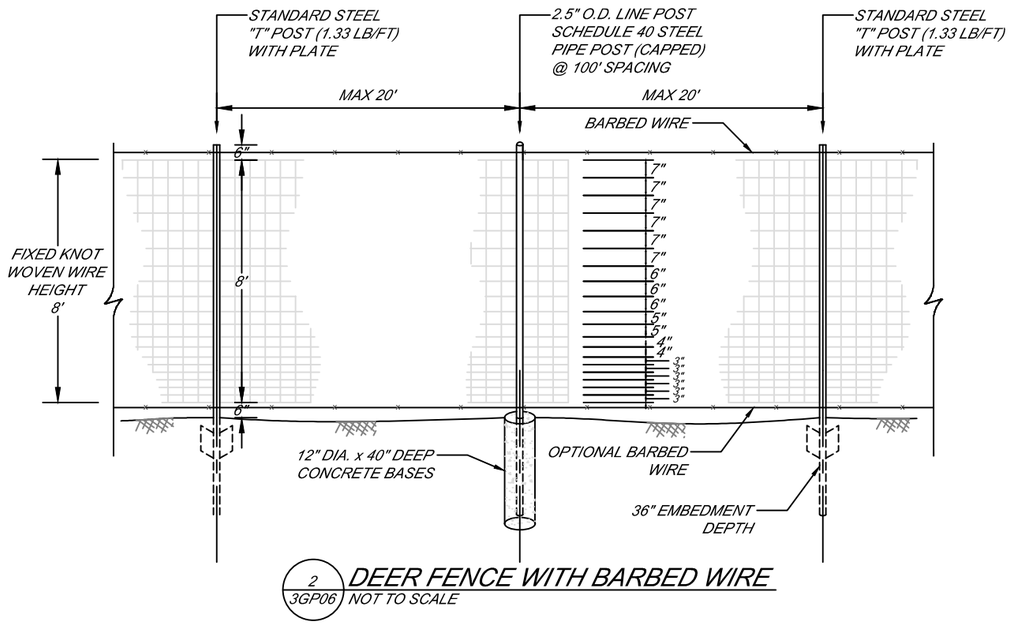


1 / 3GP06 **DEER FENCE WITH BARBED WIRE**
NOT TO SCALE



2 / 3GP06 **DEER FENCE WITH BARBED WIRE**
NOT TO SCALE

NOTES:

1. FOR WOVEN WIRE, TOP AND BOTTOM STRANDS SHALL BE 12½ GAUGE OR HEAVIER; INTERMEDIATE STRANDS SHALL BE 14½ GAUGE OR HEAVIER.
2. FOR BARBED WIRE, EACH LINE WIRE SHALL CONSIST OF 2 TWISTED STRANDS OF 12½ GAUGE WIRE OR HI-TENSILE STRENGTH WIRE OF 15½ GAUGE. THE BARBS SHALL BE EITHER 2-POINT BARBS ON APPROXIMATE 4 INCH CENTERS OR 4-POINT BARBS ON APPROXIMATE 5 INCH CENTERS.
3. ALL WIRE SHALL HAVE CLASS III GALVANIZATION.
4. STANDARD WOVEN WIRE FENCES MAY HAVE LINE POSTS SPACED UP TO 15 FEET APART. HI-TENSILE WOVEN WIRE FENCE MAY HAVE LINE POSTS SPACED UP TO 20 FEET APART. CLOSER SPACING IS REQUIRED WHERE NEEDED FOR INCLINES OR CHANGES IN TOPOGRAPHY.
5. CONCRETE FOOTINGS SHALL HAVE TOPS CROWNED.
6. TO PREVENT WIRE FROM SLIPPING ON STEEL POST, DOUBLE WRAP ALL WIRE AROUND STEEL POST OR WELD CHAIN LINK LOOPS.

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General Siting Criteria Demonstration and Site Specific Groundwater Data

8.
Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the applica examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment.
NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells FIGURES 1-2

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.
- Written confirmation or verification from the municipality; written approval obtained from the municipality FIGURE 3

Within the area overlying a subsurface mine.
- Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division FIGURE 4

Within an unstable area.
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map FIGURE 5

Within a 100-year floodplain. FEMA map FIGURE 6

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
- Topographic map; visual inspection (certification) of the proposed site FIGURE 7

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
- Visual inspection (certification) of the proposed site; aerial photo; satellite image FIGURE 8

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application. FIGURES 1 and 7
- NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site

Within 500 feet of a wetland. FIGURE 9
- US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site

Distance to Groundwater

Figure 1, Figure 2, and the discussion below demonstrates that groundwater (fresh water as defined by NMOCD Rules) is greater than 50 feet beneath the area of interest that is the location of the proposed recycling containment.

Figure 1 is a geologic/ topographic map that shows:
1. The Dagger 2 Containment and recycling facility area is identified by the blue square.
2. Water wells from the OSE database as a blue triangle inside colored circles that indicate well depth. OSE wells are often miss-located in the WATERS database as older wells are plotted in the center of the quarter, quarter, quarter, of the Section Township and Range. OSE wells showing no depth to water and no date are typically issued permits for wells that may or not be in existence at the time of writing this submission.
3. Water wells from the USGS database as large triangles color-coded to the formation from which the well draws water.
4. Water wells, which are not documented in the public databases but were identified by field inspection or other published reports as colored squares (Misc. wells).
5. The depth-to-water from the most recent available measurement for each well is provided adjacent to the well symbol.

Figure 2 is an area topographic map that shows:
1. The Dagger 2 Containment and recycling facility area identified by the blue square with the estimated surface elevations noted (3790 at northeast corner and 3835 at southwest corner).
2. Water wells measured by the USGS, the year of the measurement and the calculated elevation of the groundwater surface.
3. Water wells measured by professionals and documented in published reports or by staff of Hicks Consultants.
4. Isocontour lines displaying the elevation of the groundwater surface.

Geology

The proposed temporary pit is located on an outcrop of Quaternary Age eolian and piedmont deposits (Qe/Qp on Figure 1). These fine-grained sands and clays, along with the Quaternary piedmont deposits (Qp on Figure 1), are present as a thin covering of the underlying Tertiary (Ogallala Formation) or Triassic age rocks. The Ogallala Formation, if present at the site, consists primarily of sand with some clay, silt and gravel, generally capped by caliche. Based on information from GWR-6 (1961), the Ogallala Formation is approximately 100 to 150 feet thick and overlies a hard red-bed layer of the upper Triassic. The nearest Ogallala outcrop is exposed near the top of Hat Mesa, approximately 1.5 miles to the northwest and 100 feet above the Dagger 2 location.

Topographically, the site is a located on the northwest slope of the San Simon Swale, a broad (4-mile wide) northwest to southeast trending valley that is bordered by Antelope Ridge, 3 miles to the southwest and Hat Mesa/Grama Ridge, 1 to 3 miles to the north and northeast respectively. Approximately 330 feet of topographic relief is present from the top of Hat Mesa (3,910 feet ASL) to the valley floor (3,580 feet ASL) located 1.5 miles to the south of the site. The elevation of Antelope Ridge (south of the proposed containment and not shown on Figure 1) is much lower

than Hat Mesa, approximately 3750 feet ASL. The elevation of the Dagger 2 temporary containment site is 3,790 feet ASL, and surface drainage is to the south, toward the center of the San Simon Swale. A small, intermittently dry lake (Dagger Lake on Figure 3) is located approximately 1.7 miles to the southeast of the site, but a low ridge located between the two areas prevents surface water at the site from reaching the lake.

Groundwater Data

We relied upon the most recent data measured by the USGS to create the water table elevation map shown in Figure 2. Water level data from the OSE database rely upon observed water levels by drillers during the completion of the water well. The OSE dataset provides some useful data in certain areas. Based upon our field survey and examination of Google Earth images, we are confident that the wells shown in Figure 2 are accurate.

GWR-6 indicates that Ogallala groundwater is not present as a regional aquifer within the topographic valley surrounding the Dagger 2 site. Wells in this area are designated by GWR-6 as producing from the Triassic aquifer. Two wells, mapped at least two miles to the north of the site (14587 and 14584), along the topographic ridge above the valley have been identified as producing water from shallow alluvium. Hicks Consultants visited this area and found only one windmill and one abandoned casing. We believe these mapped wells are the ones observed during our site visit. The windmill and casing are located on shallow alluvium and are situated adjacent to a playa lake. Considering the measured depth to groundwater in one of the wells is at or below the projected bottom of the Ogallala Formation, we believe these wells actually draw water from the Triassic.

For the potentiometric surface map (Figure 2), we honored all data that we know are accurate to the best of our knowledge. From the data presented in Figures 1 and 2, we conclude:

- The wells drilled southwest of the site encounter water at >350 feet below the surface (see Figure 1).
- Depth to groundwater in the Chinle (purple triangles) east of the proposed containment is approximately 178 feet to 391 feet below the ground surface (USGS data).
- The elevation of the groundwater surface beneath the area in which the Dagger 2 Containment will be constructed is estimated from the data as 3,430 feet above mean sea level (Figure 2).
- Using these data, distance between ground surface and the potentiometric surface of the regional aquifer is (3790-3430=) 360 feet.

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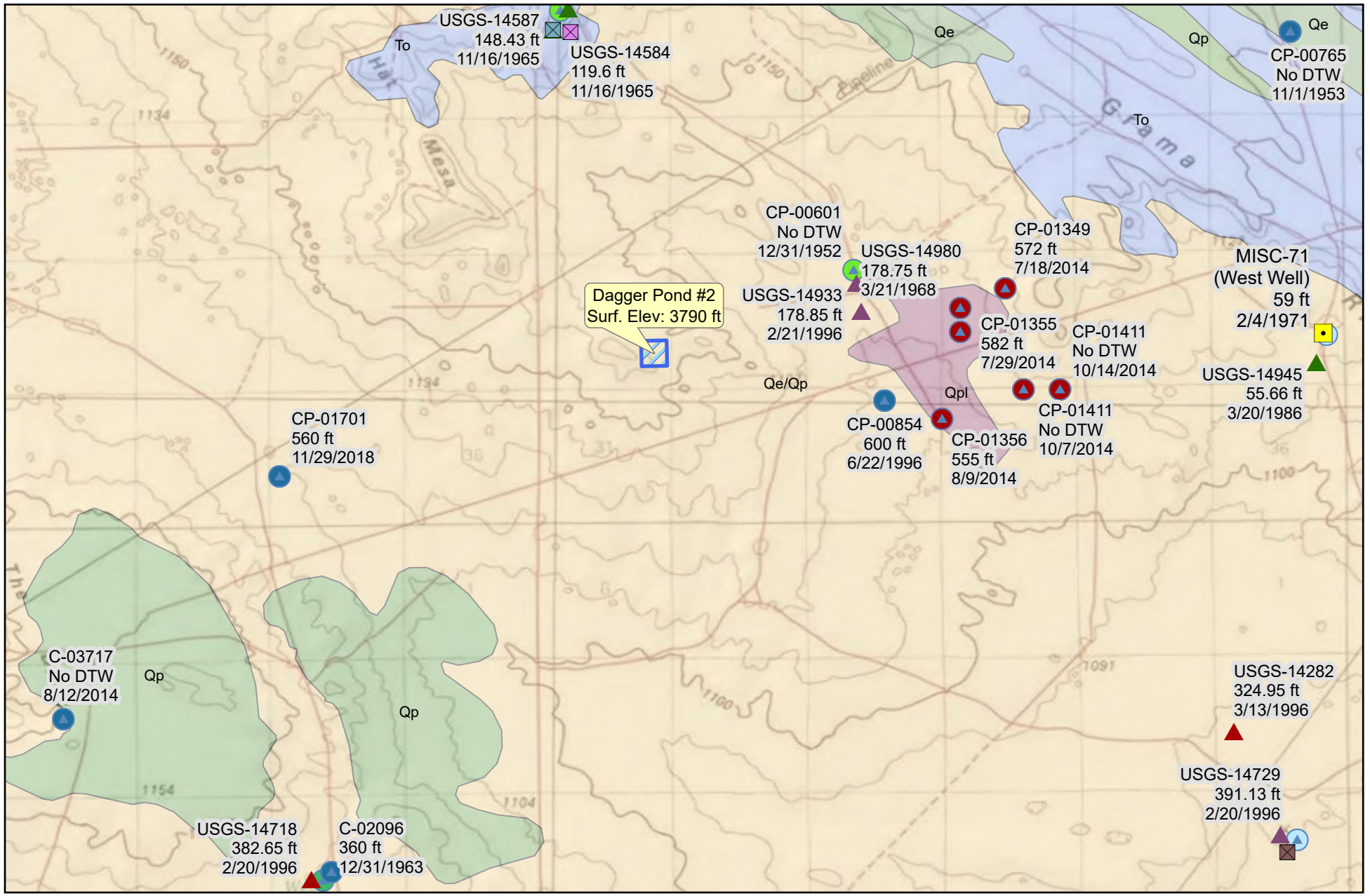

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R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Depth to Water and Geology	Figure 1
Advance Energy: Dagger Containment #2	March 2019

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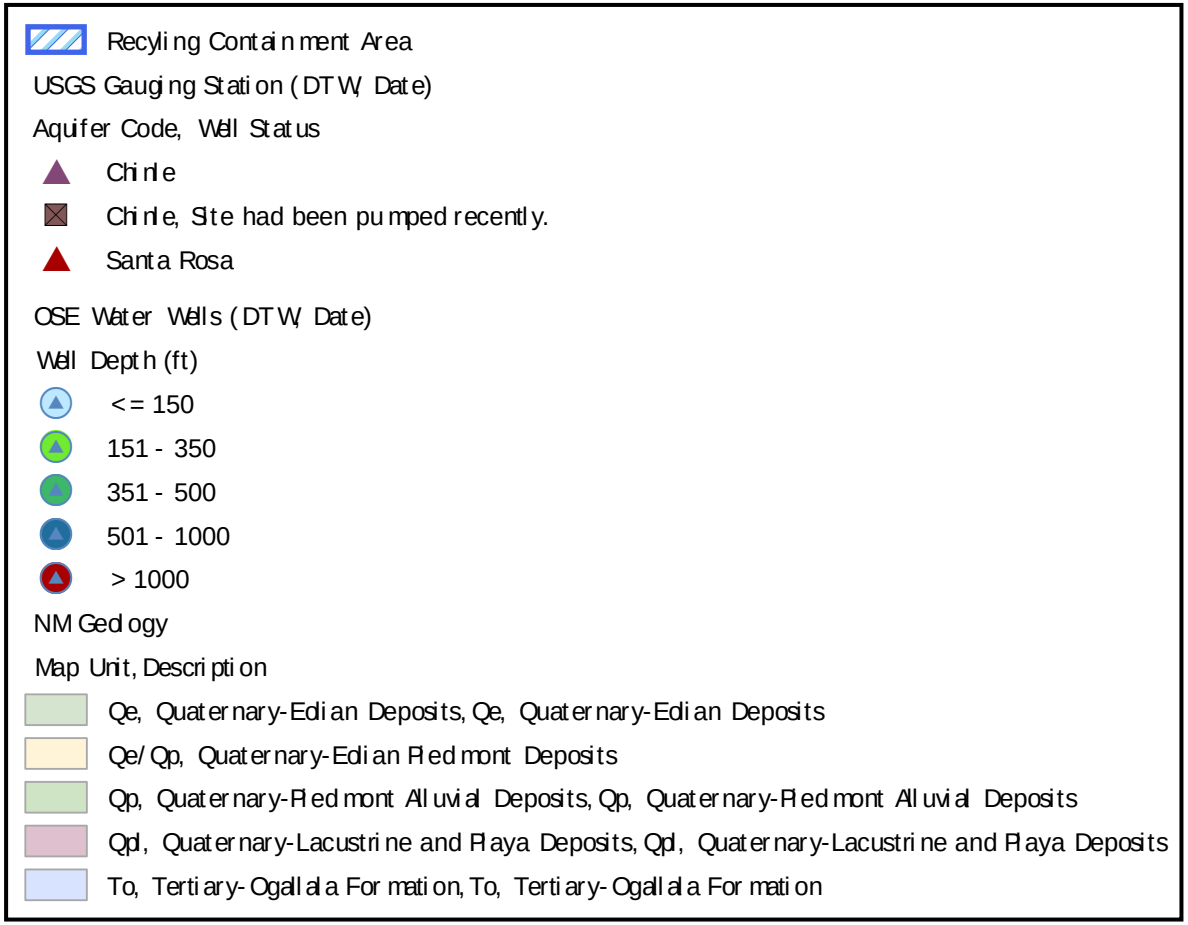

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Depth to Water and Geology	Figure 1 LEGEND
	Advance Energy: Dagger Containment #2	March 2019

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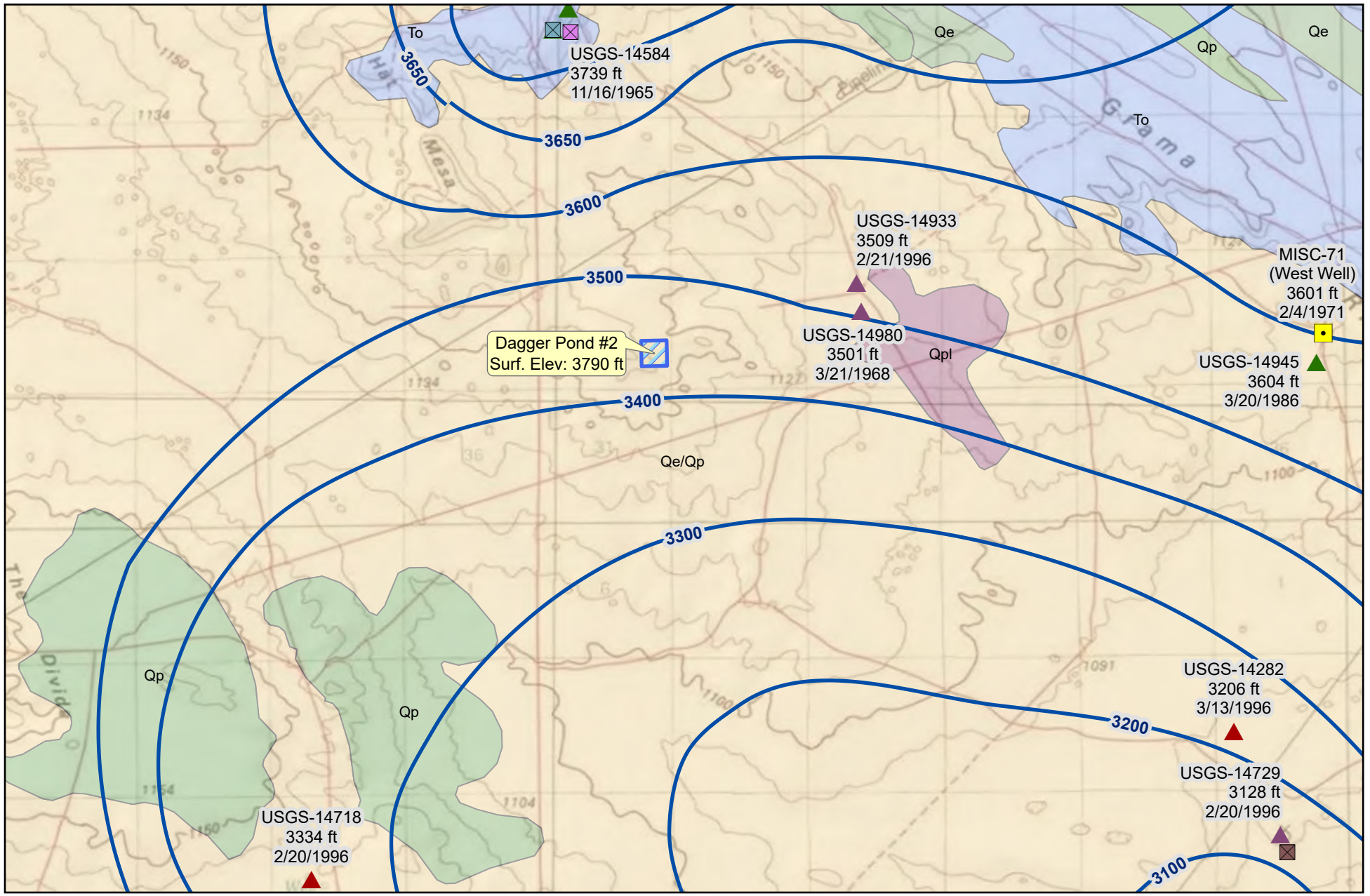

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Potentiometric Surface and Groundwater Elevation	Figure 2
	Advance Energy: Dagger Containment #2	March 2019

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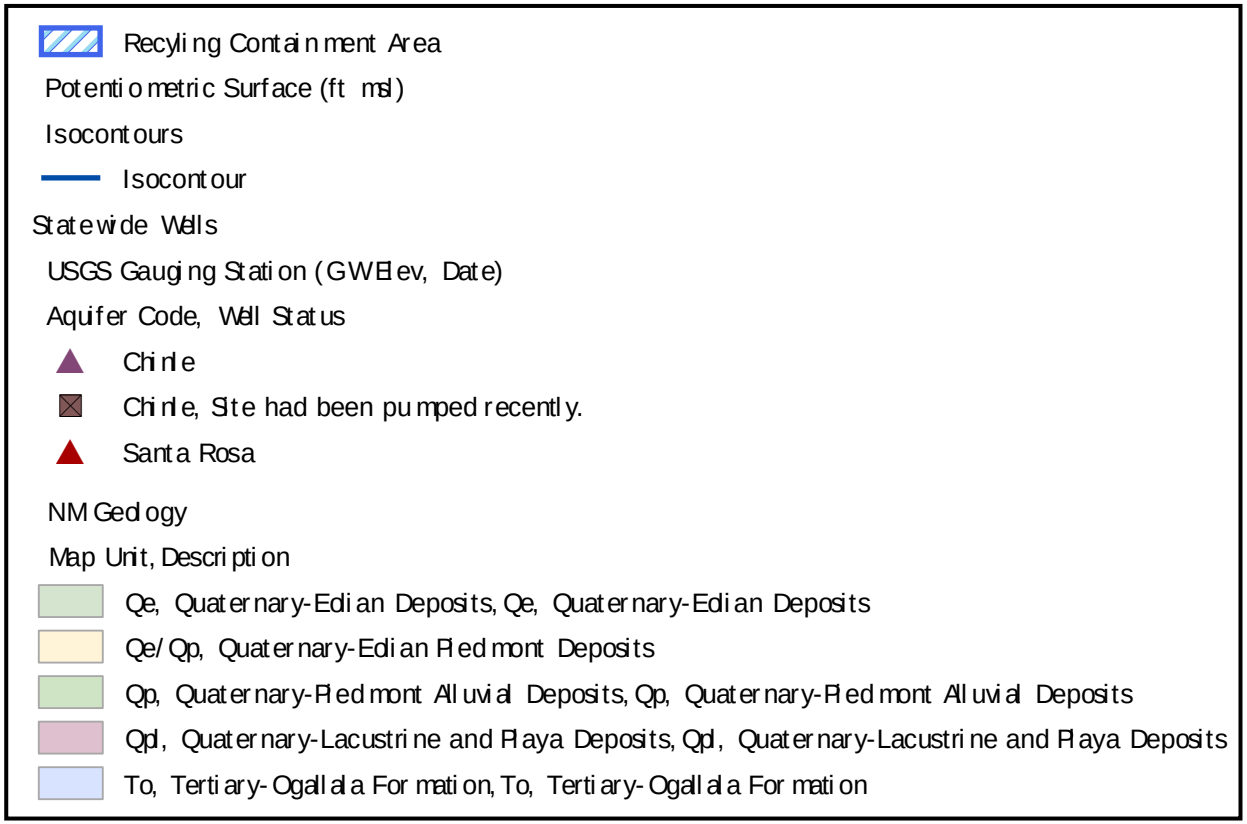

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Potentiometric Surface and Groundwater Elevation

Figure 2
LEGEND

Advance Energy: Dagger Containment #2

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Distance to Municipal Boundaries and Fresh Water Fields

Figure 3 demonstrates that the area of interest is not within incorporated municipal boundaries or within defined municipal fresh water well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

- The closest municipality is Eunice, NM approximately 25 miles to the east.
- The closest mapped public well field is also in Eunice.

Distance to Subsurface Mines

Figure 4 and our general reconnaissance of the area demonstrate that the nearest mines are rock quarries. The area of interest is not within an area overlying a subsurface mine.

- The nearest caliche pit is approximately 1.5 miles to the northwest.

Distance to High or Critical Karst Areas

Figure 5 shows the area of interest of the containment with respect to BLM Karst areas.

- The area of interest is located within a "low" potential karst area.
- The nearest "high" potential karst area is located approximately 10 miles west of the site.
- No evidence of solution voids were observed near the site during the field inspection.
- No evidence of unstable ground was observed in the area.

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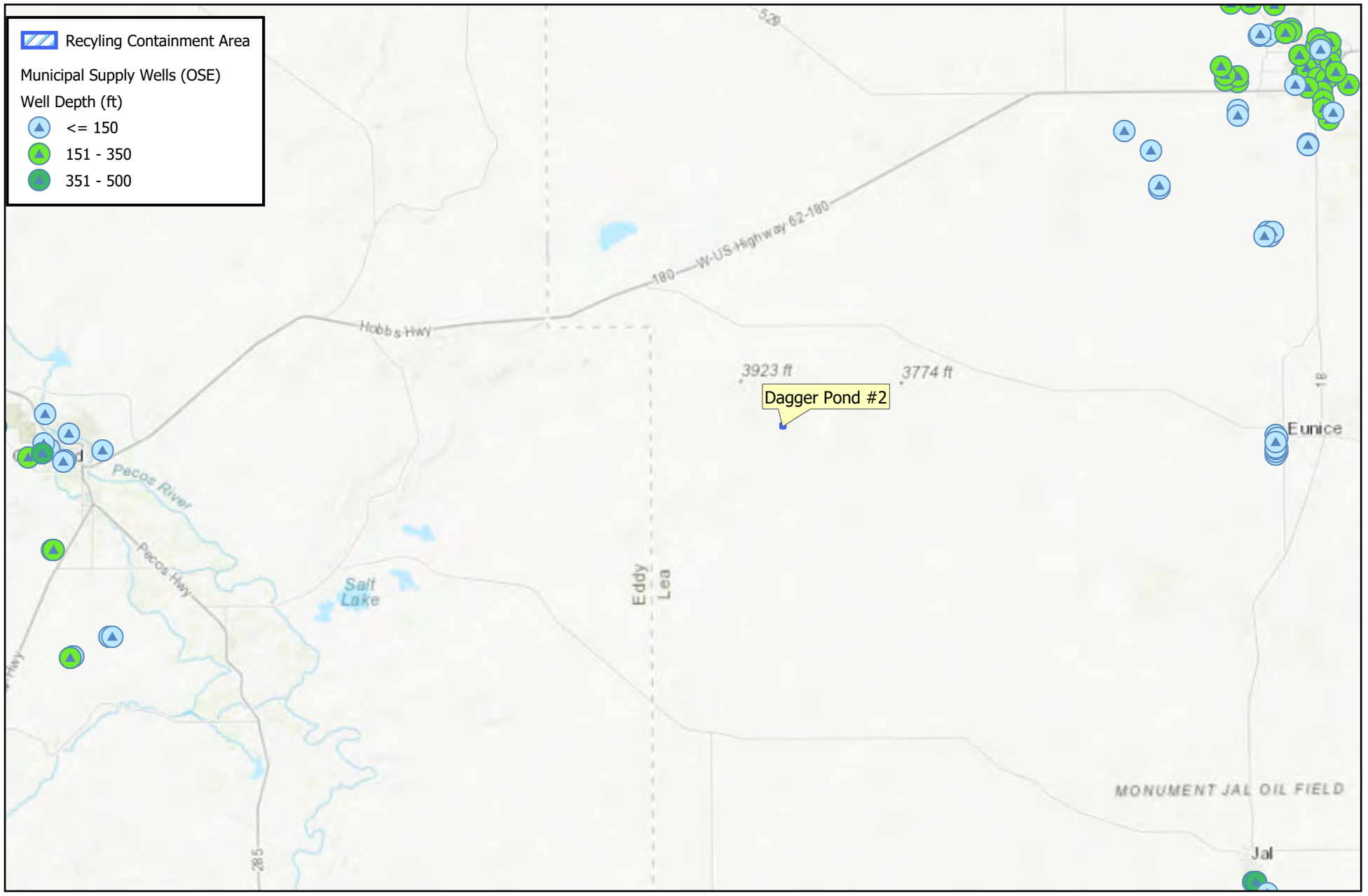

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Municipal Well Fields	Figure 3
	Advance Energy: Dagger Containment #2	March 2019

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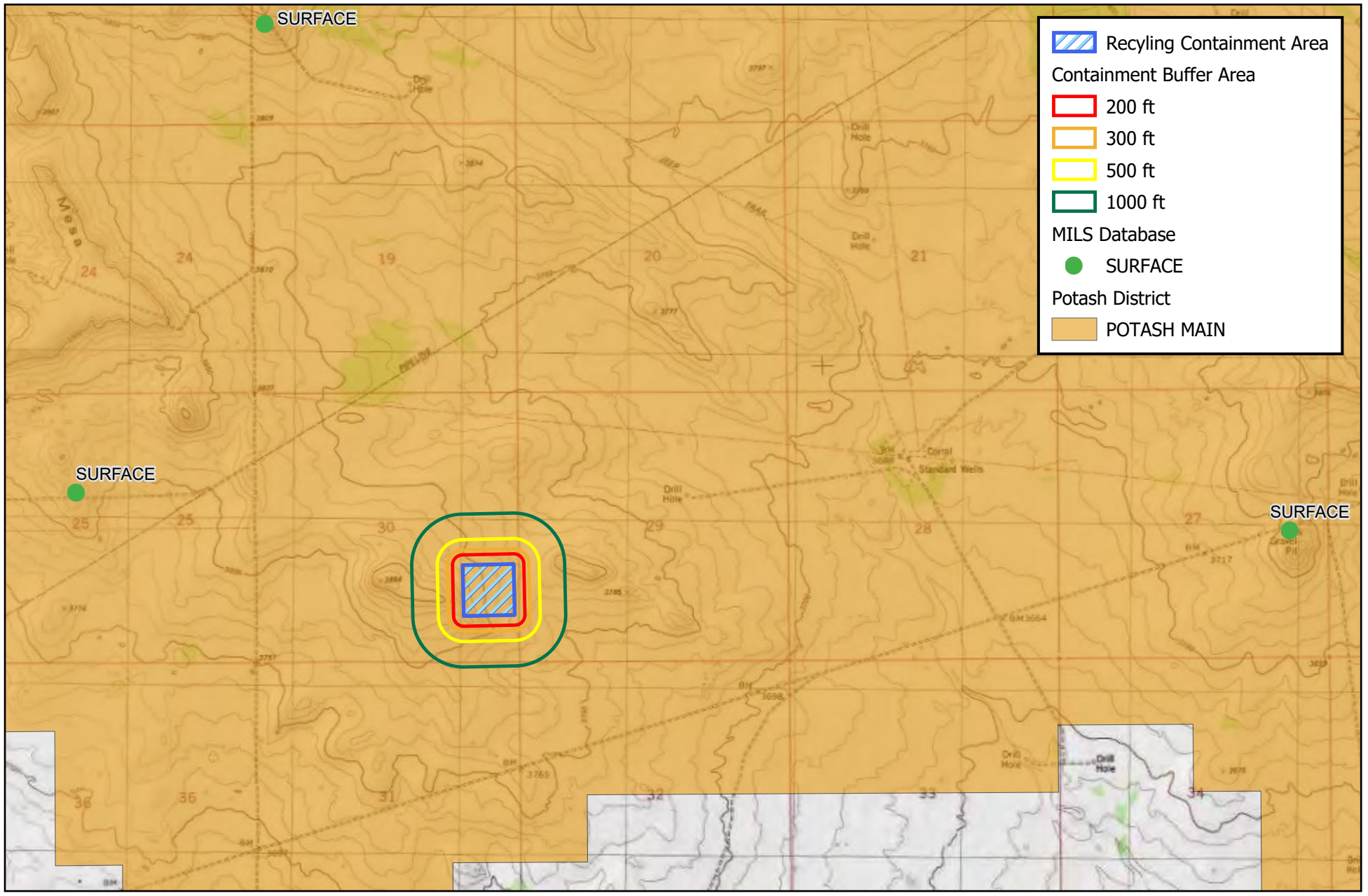

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Mines and Minerals	Figure 4
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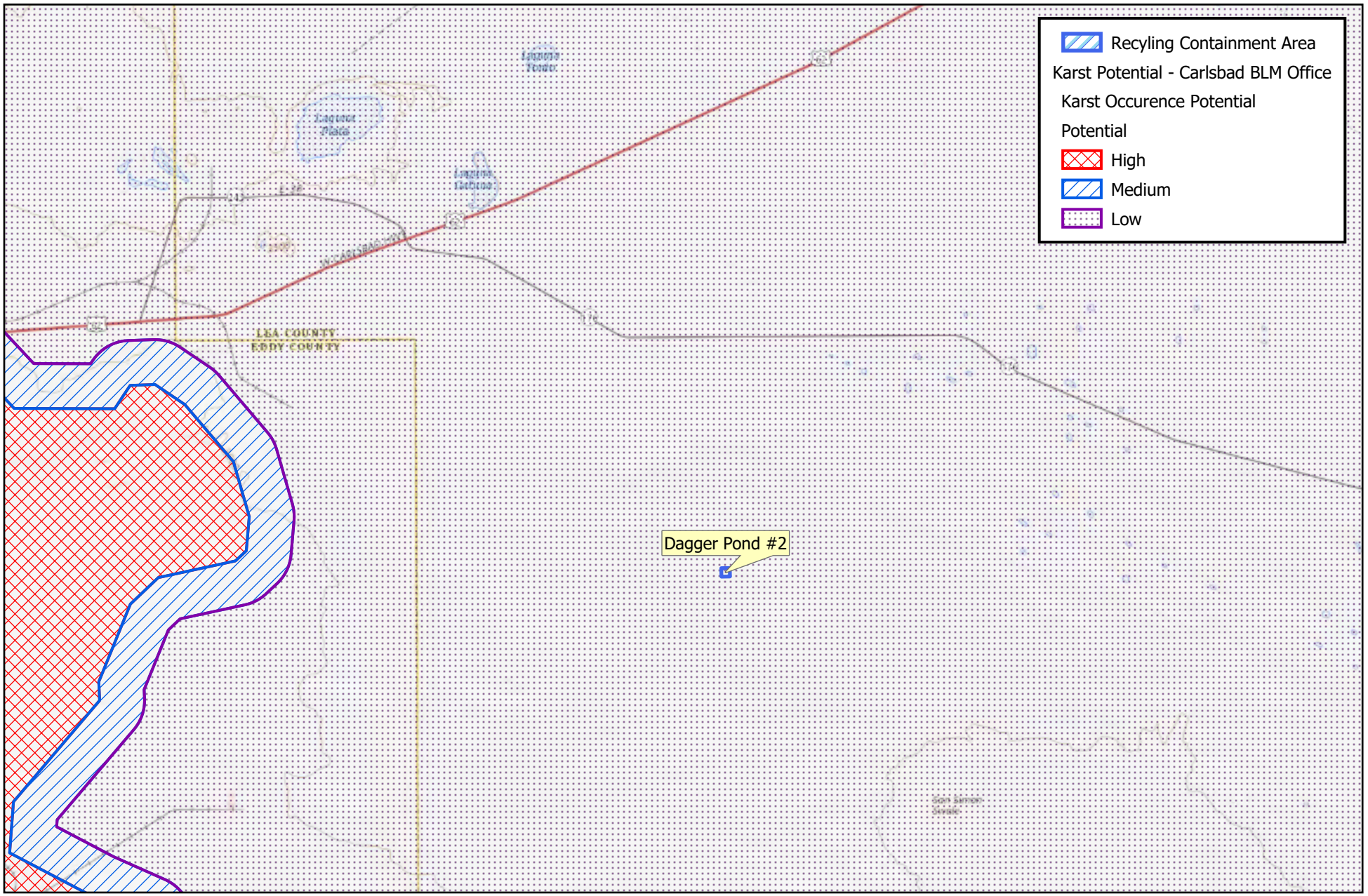

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Karst Potential

Figure 5

Advance Energy: Dagger Containment #2

March 2019

Distance to 100-Year Floodplain

Figure 6 demonstrates that the area of interest is within Zone X as designated by the Federal Emergency Management Agency with respect to the Flood Insurance Rate 100-Year Floodplain.

- Zone X is described as Areas Outside the 0.2% Annual Chance Floodplain.
- Our field inspection and examination of the topography permits a conclusion that the area of interest is not within any floodplain and has low risk for flooding.

Distance to Surface Water

Figure 7 and the site visit demonstrates that the area of interest is not within 300 feet of a continuously flowing watercourse or 200-feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark) or spring.

- The map depicts an "intermittent stream" located about 2 miles west of the area of interest and another mapped stream approximately 1.6 miles east of the site.
- No continuously-flowing watercourses, significant watercourse or other water bodies, as defined by NMOCD Rules, exist within the prescribed setback criteria for the siting of a recycling containment.
- No springs were identified in Figure 7 or in the site visit.
- No playa lakes or lakebeds were identified by the site visit or databases.

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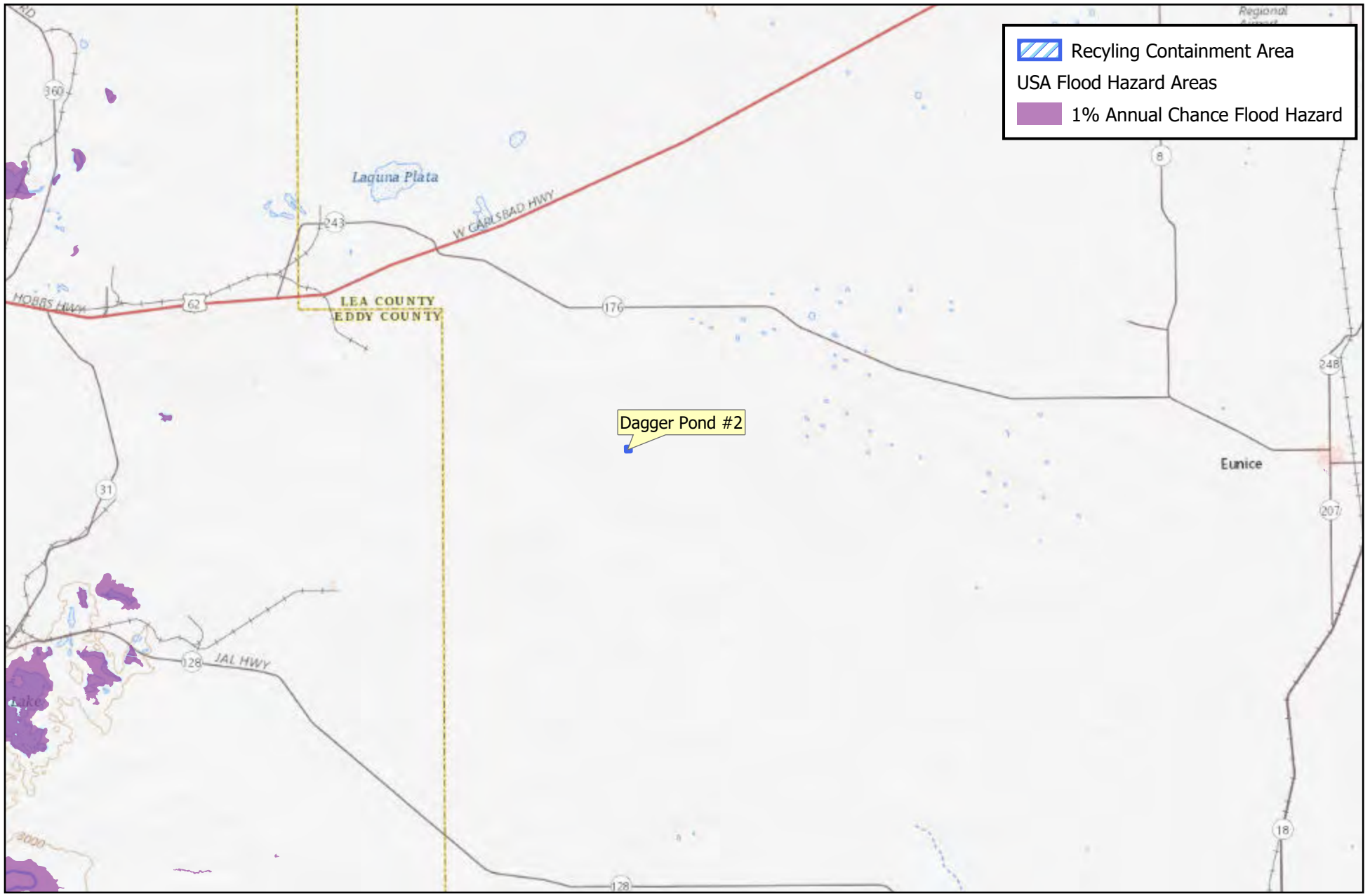

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R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Flood Hazard Areas (FEMA)

Figure 6

Advance Energy: Dagger Containment #2

March 2019

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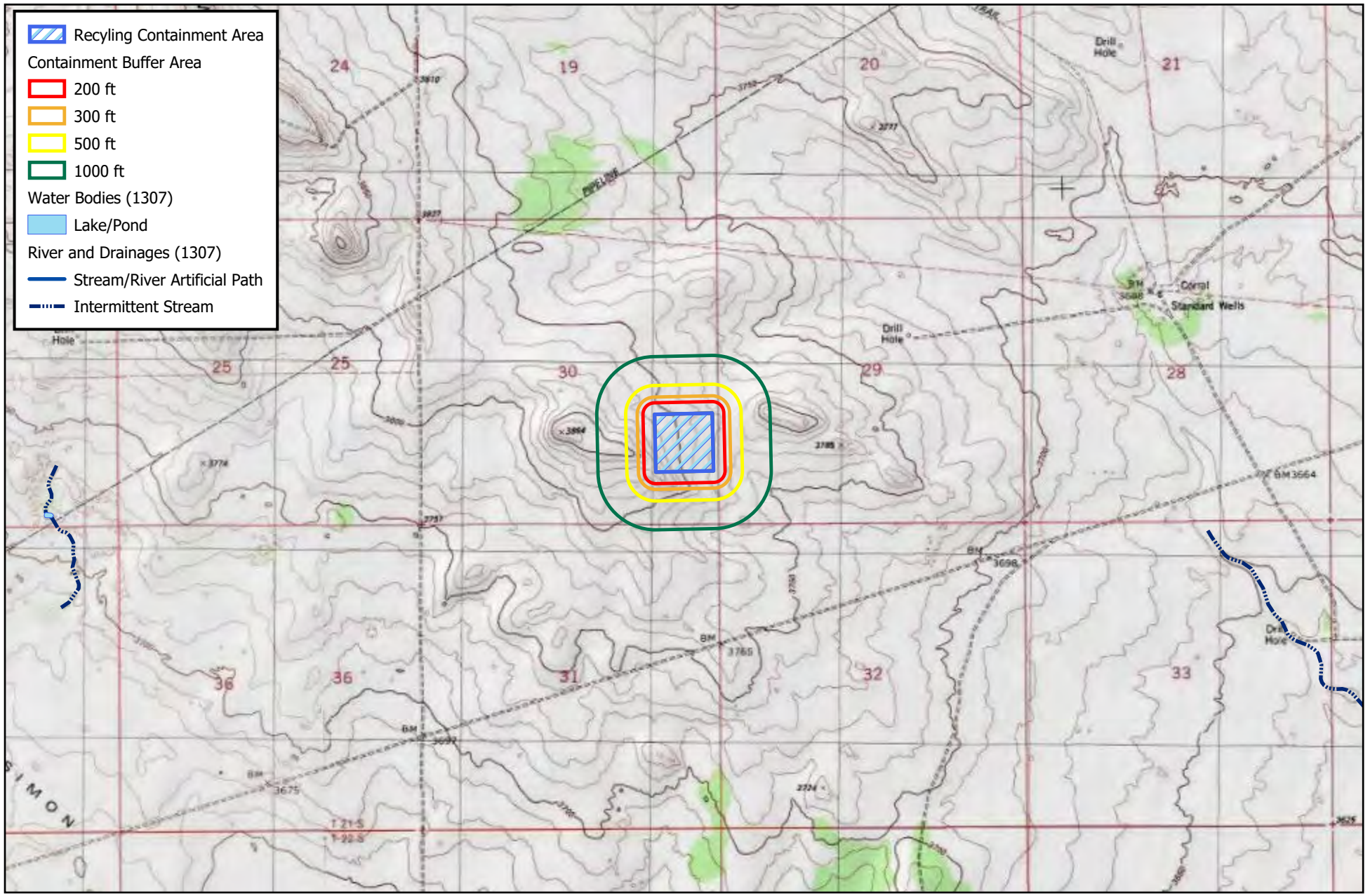

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Surface Water	Figure 7
	Advance Energy: Dagger Containment #2	March 2019

Distance to Permanent Residence or Structures

Figure 8 and the site visit demonstrates that the area of interest is not within 1000 feet from an occupied permanent residence, school, hospital, institution, church, or other structure in existence at the time of initial application.

- The nearest structures are the Dagger Containment, well pads and a tank battery.

Distance to Non-Public Water Supply

Figures 1 and 7 demonstrates that the area of interest is not within 500 horizontal feet of a spring or fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.

- Figure 1 shows the locations of all area water wells; the nearest water well is located approximately 1.4 miles to the east (USGS-14933). There are no known domestic water wells located within the mapping area.
- No domestic water wells are located within 1,000 feet of the recycling area.
- No springs were identified within the mapping area (see Figure 7).

Distance to Wetlands

Figure 9 demonstrates the area of interest is not within 300 feet of wetlands.

- The nearest designated wetlands are associated with intermittent streams located about 1.5 miles to the east and west of the proposed containment. .

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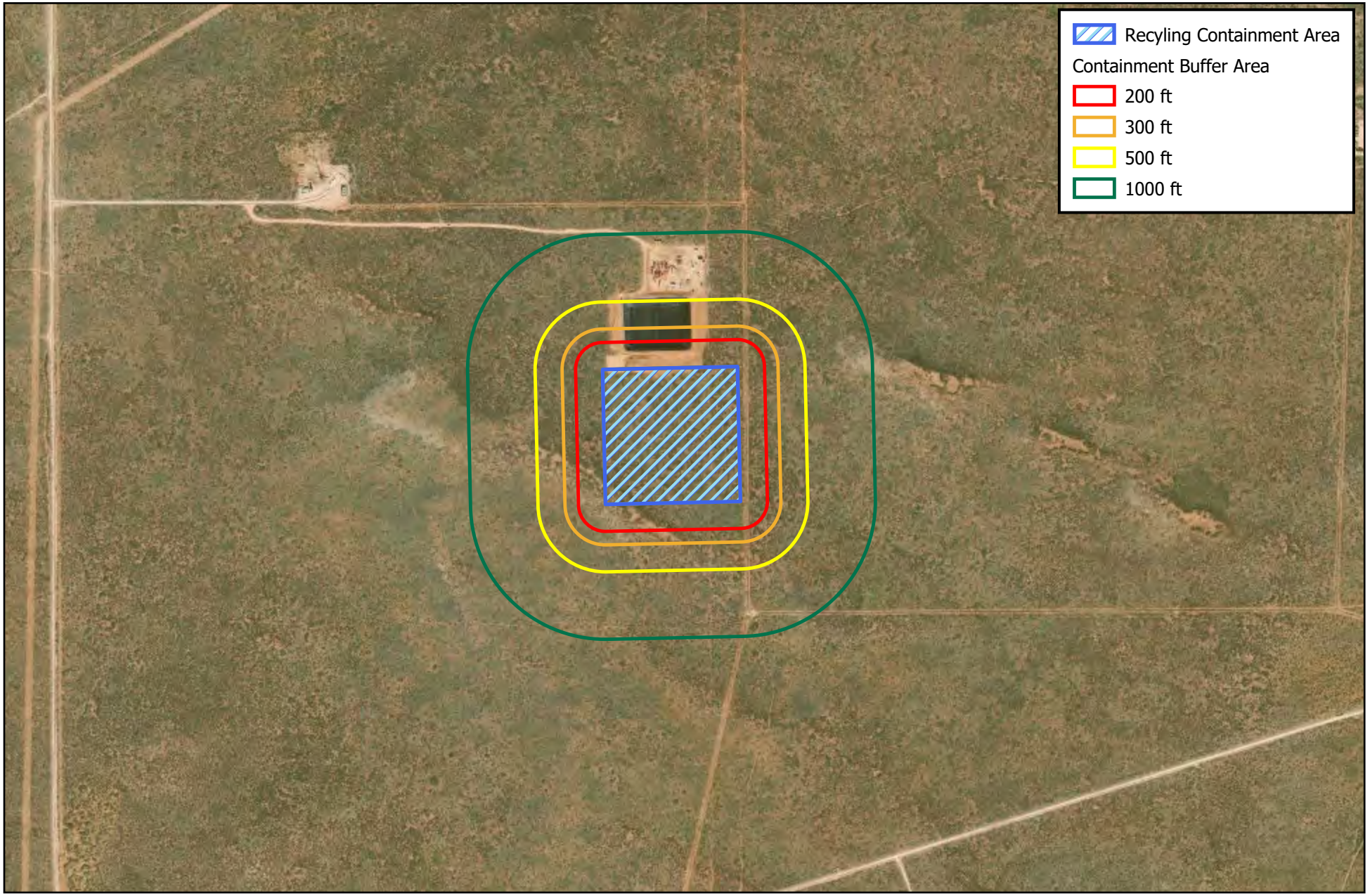

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901 Rio Grande Blvd NW Suite F-142
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Nearby Structures

Figure 8

Advance Energy: Dagger Containment #2

March 2019

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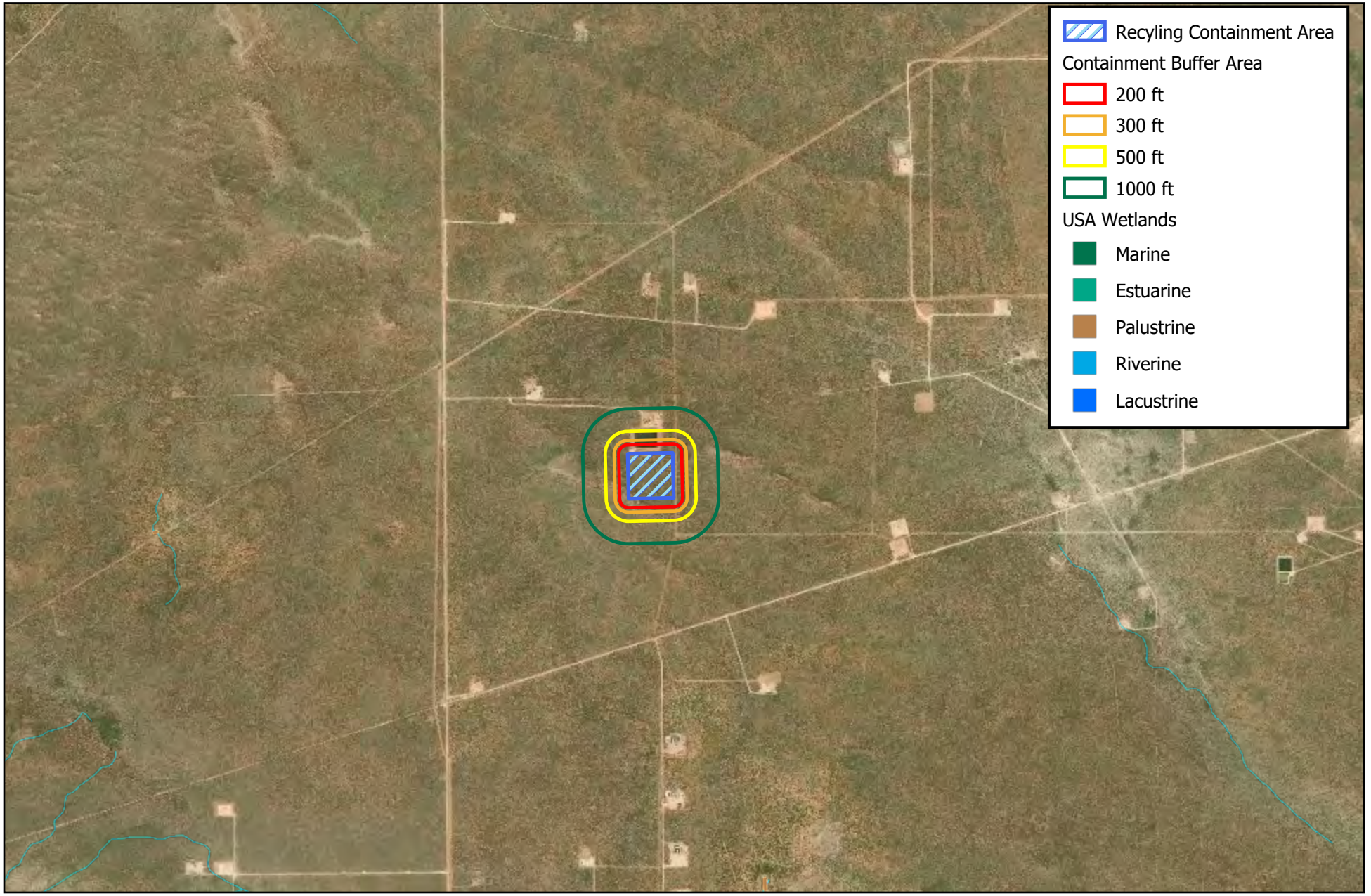

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W E
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0 1,500 3,000
US Feet

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Wetlands	Figure 9
Advance Energy: Dagger Containment #2	March 2019

DESIGN PLAN

OPERATION AND MAINTENANCE PLAN

CLOSURE PLAN

9.
Recycling Facility and/or Containment Checklist:
Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☒ Design Plan - based upon the appropriate requirements.
- ☒ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☒ Closure Plan - based upon the appropriate requirements.
- ☒ Site Specific Groundwater Data -
- ☒ Siting Criteria Compliance Demonstrations –
- ☒ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

Applicable mandates in Rule 34 are underlined. This plan addresses construction of the earthen containments.

Magrym Consulting, Inc. is providing the design of the containment and their preliminary plans are presented in this submission. Stamped "as built" drawings showing all design elements will be submitted to OCD prior to storage of produced water.

Dike Protection and Structural Integrity

The design and operation provide for the confinement of produced water, to prevent releases and to prevent overtopping due to wave action or rainfall. Additionally, the design prevents run-on of surface water as the containment is surrounded by an above-grade levee (a berm) and/or diversion ditch (between the levee and the soil stockpile) to prevent run-on of surface water.

Stockpile Topsoil

Where topsoil was present, prior to constructing containment, the operator stripped and stockpiled the topsoil for use as the final cover or fill at the time of closure.

Signage

The operator will place an upright sign no less than 12 inches by 24 inches with lettering not less than two inches in height in a conspicuous place on the fence surrounding the containment. The sign is posted in a manner and location such that a person can easily read the legend. The sign will provide the following information:

- the operator's name,
- the location of the site by quarter-quarter or unit letter, section, township and range, and
- emergency telephone numbers

Fencing

The operator will provide for a fence to enclose the recycling containment in a manner that deters unauthorized wildlife and human access. Advance will employ a game fence rather than a four foot fence that has at least four strands evenly spaced in the interval between one foot and four feet above ground level. Because feral pigs, javelina and deer are present in the area, a chain link or game fence is required in order to comply with Section 19.15.34.12 D.1 of the Rule[1]. The specification for fencing provided in 19.15.34.12 D.2 contradicts D.1 because pigs will move beneath the lower strand of a 4-strand, 4-foot high barbed wire fence and deer will jump over. Thus, compliance with D.2 results in a violation of D.1. Compliance with D.1 is the critical component of the Rule and operators need not submit a variance request in order to follow Best Management Practices and comply with the Rule. As stated in the O&M plan, the operator will ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.

[1] The operator shall fence or enclose a recycling containment in a manner that deters unauthorized wildlife and human access and shall maintain the fences in good repair.

Netting and Protection of Wildlife

The perimeter game fence will be effective in excluding stock and most terrestrial wildlife. If requested by the surface owner, the game fence can include a fine mesh from the base to 1 foot above the ground to exclude the small reptiles (e.g. dune sagebrush lizard).

The recycling containment will be protective of wildlife, including migratory birds through the implementation of an Avian Protection Plan, routine inspections and the perimeter fence.

The avian protection plan includes the use of a Bird-X Mega Blaster Pro[2] as a primary hazing program for avian species. The device will be equipped with sounds suitable for the Permian Basin environment. In addition to this sonic device, staff will routinely inspect the containment for the presence of avian species and, if detected, will use a blank cartridge or shell in a handgun, starter pistol or shotgun as additional hazing. Decoys of birds of prey may be placed on the game fence and other roosts around the open water to provide additional hazing.

The O&M plan calls for the operator to inspect for and, within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.

Earthwork

The containment will have a properly constructed foundation and interior slopes consisting of a firm, unyielding base, smooth and free of rocks, debris, sharp edges or irregularities to prevent the liner's rupture or tear. Geotextile may be placed under the liner when needed to reduce localized stress-strain or protuberances that otherwise may compromise the liner's integrity.

Appendix A provide the stamped drawings for the containment will have the following design/construction specifications:

a) levee has inside grade no steeper than two horizontal feet to one vertical foot (2H: 1V).
b) levee outside grade is no steeper than three horizontal feet to one vertical foot (3H: 1V)
c) top of the levee is wide enough to install an anchor trench and provide adequate room for inspection and maintenance.
d) The containment floor design calls for a slope toward the sump in the southeast corner.

Liner and Drainage Geotextile Installation

The containment has a primary (upper) liner and a secondary (lower) liner with a leak detection system appropriate to the site's conditions.

[2] https://bird-x.com/bird-products/electronic/sonic/mega-blaster-pro/

The primary (upper) liner is a geomembrane liner composed of an impervious, synthetic material that is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. It is 60-mil HDPE. The secondary liner is 40-mil HDPE and is equivalent to 30-mil LLDPEr. Liner compatibility meets or exceeds a subsequent relevant publication to EPA SW -846 method 9090A.

The recycling containment design has a leak detection system between the upper and lower geomembrane liners of 200-mil geonet to facilitate drainage. The leak detection system consists of a properly designed drainage and collection and removal system placed above the lower geomembrane liner in depressions and sloped to facilitate the earliest possible leak detection. The containment floor design calls for a slope toward the sump in the southeast corner. This slope combined with the highly transmissive geonet drainage layer provide for rapid leak detection.

The liners and drainage material will be installed consistent with the Manufacture's specifications. In addition to any specifications of the Manufacturer, protocols for liner installation include measures to:

i. minimizing liner seams and orient them up and down, not across, a slope of the levee.
ii. use factory-welded seams where possible.
iii. use field seams in geosynthetic material that are thermally seamed and prior to field seaming, overlap liners four to six inches.
iv. minimize the number of field seams and comers and irregularly shaped areas.
v. provide for no horizontal seams within five feet of the slope's toe.
vi. use qualified personnel to perform field welding and testing.
vii. avoid excessive stress-strain on the liner
viii. The edges of all liners are anchored in the bottom of a compacted earth-filled trench that is at least 18 inches deep

At points of discharge into the lined earthen containment the pipe configuration effectively protects the liner from excessive hydrostatic force or mechanical damage during filling.

The design shows that at any point of discharge into or suction from the recycling containment, the liner is protected from excessive hydrostatic force or mechanical damage. External discharge or suction lines do not penetrate the liner.

Pumping from the containment to hydraulic fracturing operations is the responsibility of stimulation contractors. Typically, lines are permanently placed in the containment with floats attached to prevent damage to the liner system. The containment may be equipped with permanent HDPE stinger (supported by a sacrificial liner or geotextile) for withdrawal of fluid if the owner deems necessary during operations.

Leak Detection and Fluid Removal System Installation

The leak detection system, contains the following design elements

a. The 200-mil HyperNet Geonet drainage material between the primary and secondary liner that is sufficiently permeable to allow the transport of fluids to the observation ports (Appendix A).
b. The containment floor is sloped towards the monitoring riser pipe to facilitate the earliest possible leak detection of the containment bottom. A pump may be placed in the observation port to provide for fluid removal.
c. Piping will withstand chemical attack from any seepage; structural loading from stresses and disturbances from overlying water, cover materials, equipment operation or expansion or contraction (see Appendix A).

Operating and Maintenance Procedures

In this plan, underlined text represents the language of the Rule.

The operator will operate and maintain the lined earthen containment to contain liquids and solids (blow sand and minimal precipitates from the produced water) and maintain the integrity of the liner system in a manner that prevents contamination of fresh water and protects public health and the environment as described below. The purpose of the lined earthen containment is to facilitate recycling, reuse and reclamation of produced water derived from nearby oil and gas wells. During periods when water for E&P operations is not needed, produced water will discharge to one of the injection wells in the operator's SWD system. The containment will not be used for the disposal of produced water or other oilfield waste.

The operation of the containment is summarized below.

A. Via pipeline, produced water generated from nearby oil and gas wells is delivered to a treatment system located as indicated in the C-147.
B. After treatment, the produced water discharges into the containment.
C. When required, produced water is removed from the containment for E&P operations. At this time, produced water will be used for drilling beneath the fresh water zones (beneath surface casing), for well stimulation (e.g. hydraulic fracturing) and other E&P uses as approved by OCD.
D. Whenever the maximum fluid capacity of the containment is reached, treatment and discharge to the containment ceases (see Freeboard and Overtopping Plan, below).
E. The operator will keep accurate records and shall report monthly to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148.
F. The operator will maintain accurate records that identify the sources and disposition of all recycled water that shall be made available for review by the division upon request.
G. The containment shall be deemed to have ceased operations if less than 20% of the total fluid capacity is used every six months following the first withdrawal of produced water for use. The operator will report cessation of operations to the appropriate division district office. The appropriate division district office may grant an extension to this determination of cessation of operations not to exceed six months.

The operation of the lined earthen containment will follow the mandates listed below:

1. The operator will not discharge into or store any hazardous waste (as defined by 40 CFR 261 and NMAC 19.15.2.7.H.3) in the containments.
2. If the containment's primary liner is compromised above the fluid's surface, the operator will repair the damage or initiate replacement of the primary liner within 48 hours of discovery or seek an extension of time from the division district office.
3. If the primary liner is compromised below the fluid's surface, the operator will remove all fluid above the damage or leak within 48 hours of discovery, notify the division district office and repair the damage or replace the primary liner.
4. If any penetration of the containment liner is confirmed by sampling of fluid in the leak detection system (see Monitoring, Inspection, and Reporting Plan; below), the operator will:

   a. Begin and maintain fluid removal from the leak detection/pump-back system,
   b. Notify the district office within 48 hours (phone or email) of the discovery,
   c. Identify the location of the leak, and
   d. Repair the damage or, if necessary, replace the containment liner.
5. The operator will install, or maintain on site, an oil absorbent boom or other device to contain an unanticipated release and the operator will remove any visible layer of oil from the surface of the recycling containment.
6. The operator will report releases of fluid in a manner consistent with NMAC 19.15.29
7. The containment will be operated to prevent the collection of surface water run-on.
8. The operator will maintain the containment free of miscellaneous solid waste or debris.
9. The operator will maintain at least three feet of freeboard for the containment and will use a free-standing staff gauge to allow easy determination of the required 3-foot of freeboard.
10. As described in the design/construction plan, the injection or withdrawal of fluids from the containment is accomplished through hardware that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.
11. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
12. The operator will maintain the fences in good repair.

Monitoring, Inspection, and Reporting Plan

The operator will inspect the recycling containment and associated leak detection systems weekly while it contains fluids. The operator shall maintain a current log of such inspections and make the log available for review by the division upon request.

Weekly inspections consist of:

- reading and recording the fluid height of staff gauges,
- recording any evidence that the pond surface shows visible oil,
- visually inspecting the containment's exposed liners, and
- checking the leak detection system for any evidence of a loss of integrity of the primary liner.

As stated above, if a liner's integrity is compromised, or if any penetration of the liner occurs above the water surface, then the operator will notify the District office within 48 hours (phone or email).

Monthly, the operator will:

A. Inspect diversion ditches and berms around the containment to check for erosion and collection of surface water run-on.
B. Inspect the leak detection system for evidence of damage or malfunction and monitor for leakage.
C. Inspect the containment for dead migratory birds and other wildlife. Within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring.
D. Report to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use on form C-148.
E. Record sources and disposition of all recycled water .

The operator will maintain a log of all inspections and make the log available for the appropriate Division district office's review upon request. An example of the log is attached to this section of the permit application.

Freeboard and Overtopping Prevention Plan

The method of operation of the containment allows for maintaining freeboard with very few potential problems. When the capacity of the containment is reached (3-feet of freeboard), the discharge of produced water ceases and the produced water generated by nearby oil and gas wells is managed by an injection well(s).

If rising water levels suggest that 3-feet of freeboard will not be maintained, the operator will implement one or more of the following options:

I. Cease discharging produced water to the containment.
II. Accelerate re-use of the produced water for purposes approved by the Division.
III. Transfer produced water from the containment to injection wells.

The reading of the staff gauge typically occurs daily when treatment operations are ongoing and weekly when discharge to the containment is not occurring.

Protocol for Leak Detection Monitoring, Fluid Removal and Reporting

As shown in Appendix A, the leak detection system includes a monitoring system. Any fluid released from the primary liner will flow to the collection sump where fluid level monitoring is possible at the monitoring riser pipe associated with the leak detection system.

Staff may employ a portable electronic water level meter to determine if fluid exists in the monitoring riser pipe. Obtaining accurate readings of water levels in a sloped pipe beneath a containment can be a challenge. An electrician's wire snake may be required to push the probe to the bottom of the port and the probe may be fixed in a 2-inch pipe "dry housing" to avoid false readings due to water condensation on the pipe. There are many techniques to determine the existence of water in the sumps – including low flow pumps and a simple small bailer affixed to an electrician's snake. The operator will use the method that works best for this containment.

If seepage from the containment into the leak detection system is suspected by a positive fluid level measurement, the operator will:

1. Re-measure fluid levels in the monitoring riser pipe on a daily basis for one week to determine the rate of seepage.
2. Collect a water sample from the monitoring riser pipe to confirm the seepage is produced water from the containment via electrical conductivity and chloride measurements.
3. Notify NMOCD of a confirmed positive detection in the system within 48 hours of sampling (initial notification).
4. Install a pump into the monitoring riser pipe sump to continually (manually on a daily basis or via automatic timers) remove fluids from the leak detection system into the containment until the liner is repaired or replaced.
5. Dispatch a liner professional to inspect the portion of the containment

suspected of leakage during a “low water” monitoring event.

6. Provide NMOCD a second report describing the inspection and/or repair within 20 days of the initial notification.

If the point of release is obvious from a low water inspection, the liner professional will repair the loss of integrity. If the point of release cannot be determined by the inspection, the liner professional will develop a more robust plan to identify the point(s) of release. The inspection plan and schedule will be submitted to OCD with the second report. The operator will implement the plan upon OCD approval.

In this plan, underlined text represents the language of the Rule.

After operations cease, the operator will remove all fluids within 60 days and close the containment within six months from the date the operator ceases operations from the containment for use.

The operator shall substantially restore the impacted surface area to

- the condition that existed prior to the construction of the recycling containment or
- to a condition imposed by federal, state trust land or tribal agencies on lands managed by those agencies as these provisions govern the obligations of any operator subject to those provisions,

The surface owner will impose a closure design that conforms to their needs for the site. The operator understands that a variance will be submitted to OCD to allow for any alternative closure protocol.

Excavation and Removal Closure Plan – Protocols and Procedures

The containment is expected to hold a small volume of solids, the majority of which will be windblown sand and dust with some mineral precipitates from the water

1. The operator will remove all liquids from the containment and either:
    a. Dispose of the liquids in a division-approved facility, or
    b. Recycle, reuse or reclaim the water for reuse in drilling and stimulation.
2. The operator will close the recycling containment by first removing all fluids, contents and synthetic liners and transferring these materials to a division approved facility.
3. After the removal of the containment contents and liners, soils beneath the containment will be tested by collection of a five-point (minimum) composite sample which includes stained or wet soils, if any, and that sample shall be analyzed for the constituents listed in Table I of 19.15.34.14.
4. After review of the laboratory results
    a. If any contaminant concentration is higher than the parameters listed in Table I, additional delineation may be required and the operator must receive approval before proceeding with closure.
    b. If all contaminant concentrations are less than or equal to the parameters listed in Table I, then the operator will proceed to
        i. backfill with non-waste containing, uncontaminated, earthen material. Or
        ii. undertake an alternative closure process pursuant to a variance request after approval by OCD.

Reclamation and Re-vegetation

a. The operator will reclaim the containment's location to a safe and stable condition that blends with the surrounding undisturbed area.
b. Topsoils and subsoils shall be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns.
c. The disturbed area shall then be reseeded in the first favorable growing season following closure of a recycling containment.

Closure Documentation

Within 60 days of closure completion, the operator shall submit a closure report on form C-147, including required attachments, to document all closure activities including sampling results and the details on any backfilling, capping or covering, where applicable. The closure report shall certify that all information in the report and attachments is correct and that the operator has complied with all applicable closure requirements and conditions specified in division rules or directives.

The operator shall notify the division when reclamation and re-vegetation are complete. Specifically the notice will document that all ground surface disturbing activities at the site have been completed, and a uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.

Previously Approved Variances

Provided upon request.

APPENDIX OSE WELL LOGS

STATE ENGINEER OFFICE

WELL RECORD

Revised June 1972

476275

Section 1. GENERAL INFORMATION

(A) Owner of well Glenn's Water Well Service Owner's Well No. _____

Street or Post Office Address P.O. Box 692

City and State Tatum, New Mexico 88267

Well was drilled under Permit No. CP-854 and is located in the:

a. ____ ¼ ____ ¼ NW ¼ NE ¼ of Section 33 Township 21-S. Range 33-E. N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in _____ County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Glenn's Water Well Service License No. WD -421

Address P.O. Box 692 Tatum, New Mexico 88267

Drilling Began 6-22-96 Completed 6-22-96 Type tools rotary Size of hole 7 7/8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 950 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 600 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
755	805	50	brown sand (coarse)	100 gpm
860	890	30	brown sand (coarse)	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
8 5/8	.188		1	16	16			
6 5/8	.188		1	950	950	none	760	950

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement

Section 5. PLUGGING RECORD

Plugging Contractor _____

Address _____

Plugging Method _____

Date Well Plugged _____

Plugging approved by:

_____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY 21.33.33.211413 #130944

Date Received 07-11-96

Quad _____ FWL _____ FSL _____

File No. CP-854 Use OWD Location No. 21.33.33.211413

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	6	6	sand
6	20	14	caleche
20	30	10	white clay
30	45	15	red clay
45	68	23	green sandrock
68	72	4	hard rock
72	105	33	red clay
105	128	23	brown shale
128	195	67	red clay
195	300	105	brown shale
300	520	220	brown and red clay
520	555	35	blue sandy shale
555	560	5	red and brown shale
560	630	70	brown shale
630	735	105	red clay
735	745	10	brown sandy shale
745	755	10	brown sand rock
755	805	50	brown sand (coarse-some gravel-water)
805	860	55	brown sandrock (with stringers of brown shale)
860	890	30	brown sand (coarse-water)
890	910	20	brown sandrock
910	930	20	brown shale
930	950	20	red clay

Section 7. REMARKS AND ADDITIONAL INFORMATION

well drilled with air and foam to 300'

well drilled (dusted) with air only to 735'

no water to 735'

went back to foam after getting water at 755'

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
'96 JUL 11 AM 10 25

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Corky Glenn
Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
POD 2 CP-1411	
WELL OWNER NAME(S)	PHONE (OPTIONAL)
BC Operating	432-684-9696
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
4000 Big Spring St. STE 310	Midland / TX / 79705

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	26	31.6	N
LONGITUDE	103	33	29.5	W

* ACCURACY REQUIRED ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1723	Randal P Stewart	Stewart Brothers Drilling Company

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/1/14	10/7/14	10/8/14	1125	840

COMPLETED WELL IS: (•) ARTESIAN ( ) DRY HOLE ( ) SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DRILLING FLUID: ( ) AIR (•) MUD ADDITIVES - SPECIFY:

DRILLING METHOD: (•) ROTARY ( ) HAMMER ( ) CABLE TOOL ( ) OTHER - SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	40	20	A 53 Grade B	Welded	15.5	.250	
+2	756	14 3/4	A 53 Grade B	Threaded	10.02	.365	
744	1125	~~14 3/4~~ 9 7/8	A 53 Grade B	Welded	8	.322	.125

2014 DEC 29 STATE ENGINEER OFFICE ROSWELL, NM

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	40	20	Neat Cement	31	Pressure via Tremi
0	756	14 3/4	Class C (Chief Services)	545 Sks	Chief Services

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1411	POD NUMBER	2	TRN NUMBER	554668
LOCATION	Exp1	21S.33E.34.21			PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	40	40	Brown Fine Sand and Clavs. some caliche	○ Y ◉ N	
40	100	60	Reddish Brown clavs and Sands	○ Y ◉ N	
100	200	100	Clavs and Sands	○ Y ◉ N	
200	300	100	Red and Brown clav with some sand	○ Y ◉ N	
300	400	100	Red Clav	○ Y ◉ N	
400	500	100	Clav and Sand	○ Y ◉ N	
500	700	200	Reddish and orav clav	○ Y ◉ N	
700	765	65	Red Clav and harder sands and oravels	○ Y ◉ N	
765	770	5	Fine sand	○ Y ◉ N	
770	810	40	Grav Shale	○ Y ◉ N	
810	820	10	Grav Brown Sandstone	○ Y ◉ N	
820	830	10	Grav and Brown SS	○ Y ◉ N	
830	840	10	Grav Brown SS	○ Y ◉ N	
840	1125	285	Santa Rosa Sand	◉ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◉ PUMP ○ AIR LIFT ○ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 50

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

2014 DEC 26 PM 2

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Danny White, Don Ward, Davis Gaddy

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Randy Stewart — Randy Stewart — 10/30/14

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	CP-1411	POD NUMBER	2	TRN NUMBER	564668
LOCATION	Exp	21S.33E.34.21			PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
CP-1701-POD1		

WELL OWNER NAME(S)	PHONE (OPTIONAL)
The Jimmy Mills GST and 2005 GST Trusts	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
c/o Stacey Mills PO Box 1359	Loving	NM	88256-1358

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	26	0.5	N
	LONGITUDE	103	39	10.1	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD1706	Bryce Wallace	Elite Drillers Corporation

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/15/18	11/29/18	840	880	560

COMPLETED WELL IS: [x] ARTESIAN [ ] DRY HOLE [ ] SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 457

DRILLING FLUID: [x] AIR [ ] MUD ADDITIVES – SPECIFY:

DRILLING METHOD: [x] ROTARY [ ] HAMMER [ ] CABLE TOOL [ ] OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	20	12.75	ASTM53 Grade B Steel	N/A	12.57	.188	
+2	460	12.25	ASTM53 Grade B steel	Welded	6.065	.28	
460	840	12.25	SDR17 PVC	Spline	6	SDR17	.032

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	20	12.75	Portland I/II Cement	17	Pour
0	453	12.25	Baroid Benseal Grout	247	Trimmie
453	860	12.25	8/16 Silica Sand	285	Pour

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO.	CP-1701	POD NO.	1	TRN NO.	619305
LOCATION	Exp1	21S.32E.35.31		WELL TAG ID NO.	—

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	5	5	Topsoil	Y N	
5	8	3	Caliche	Y N	
8	80	72	Tan/Red sandy caliche	Y N	
80	190	110	Red clay	Y N	
190	400	210	Tan/Red sandstone	Y N	
400	560	160	Red siltstone	Y N	
560	575	15	Red siltstone/Gyp	✓ Y N	5.00
575	750	175	Red siltstone	Y N	
750	770	20	Red siltstone/Gyp	✓ Y N	25.00
770	840	70	Red siltstone	Y N	
840	880	40	Red Shale	Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☑ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 30.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Bryce Wallace — 12/10/2018

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. CP-1701	POD NO. 1	TRN NO. 619305
LOCATION Exp1 215.32E.35.31	WELL TAG ID NO. —	PAGE 2 OF 2