Appendix A: Selected core photos (captions follow photos).

Figure A1-selected core photos and photomicrographs (continued next 2 pages).
Photo captions:

A: Core 3 (265’): core slab; coarse skeletal (rudist) limestone in fine grained matrix, multiple microstylolites, scattered moldic porosity and crystalline calcite cement (Kgrl)

B: Core 3 (265’-photo micrograph-10X zoom): reef debris, rudist fragments filled with very fine to fine grainstone matrix, minor moldic porosity, some plugged.

C: Core 4 (270-272’): core slab; skeletal grainstone, fine to medium grained with scattered coarse skeletal clasts, fine moldic porosity, and large stylolite.

D: Core 4 (272.5’): (photo micrograph) stylolite, 3-5 cm amplitude, dolomitic limestone, fine to medium grained with minor coarse skeletal fragments.

E: Core 4 (275’): core slab; at top, small fragmented colony of Scleractinian hexacorals ; and fine grained skeletal grainstone, dolomitic with multiple stylolites.

F: (275’-photo through 10X hand lens); Lower Glen Rose; small colony of Scleractinian hexacorals, very fine to microcrystalline calcite replacement.

G: Core 5 (281-282’): transitional contact between Lower Glen Rose and Hensel; skeletal limestone, fine to medium grained with Orbitolina texana, tite; over burrowed dolomitic limestone, fine wispy laminae, intraclasts (core slab).

H: Core 5 (287-288’): Hensel; dolomitic limestone, wackestone, micritic-skeletal; “flood” Orbitolina texana and scattered skeletal clasts, stylolite, sorting along wavy laminae, parts burrowed, dolomitic mudstone.

I: Core 6 (290-291’): Hensel: siltstone, calcareous; mudstone, dolomitic with fine detrital grains; top brecciated with multiple stylolites; gastropods at base, possible storm channels (core slab).

J: Core 6 (297’): Hensel: very coarse mollusks packed with fine to micro-crystalline dolomite with fine detrital grains; microstylolites, disrupted wispy laminations (core slab).
K: Core 6 (297’-photo micrograph- 10X zoom): Hensel; very coarse mollusk in matrix of fine to micro- crystalline dolomite with detrital grains (photo micrograph).

L: Core 7 (302-303’: Hensel; broken oysters in fine crystalline dolomite wackestone matrix with skeletal fragments (core slab).

M: Core 7 (304-305’): contact Hensel- Cow Creek paleosol, burrowed fine crystalline dolomitic wackestone with oysters; over breccia, sub angular to sub rounded coarse intraclasts in crystalline dolomitic matrix.

N: Core 7 (307.5’) 10X: calcrite intraclast with detrital grains; angular gray dolomite clast in very fine crystalline dolomite matrix, rounded clasts possibly algal (photo micrograph).

O: Core 7 (307-308’): paleosol: dolomite, fine crystalline with off white caliche/calcrete and dark gray crystalline dolomite intraclasts, brecciated; microstylolites, disrupted-churned, unsorted lithoclasts.

P: Core 8 (310’): core slab; base of paleosol with Cow Creek; dolomite, very fine to micro-crystalline cream colored matrix with fine to medium grained, rounded, elongated, black-dark gray pellets, irregular laminae, alternate light and dark gray green; microstylolites, possible channel & hard ground at base.

Q: Core 8 (319’-photo micrograph-10X zoom): large crystalline calcite vug, coral fragment, lined with small, blunt calcite crystals.

R: Core 8 (319’): Cow Creek; at top a large vug fill of crystalline calcite replaces coral fragment; coarse skeletal limestone with fine-medium coated grain-calcarenite matrix, with moldic porosity.

S: Core 10 (334’): stylolite (pressure induced zone of chemical dissolution) separates coarse skeletal hash with excellent moldic and vuggy porosity (above) from very fine grain skeletal grainstone (below), tite.

T: Core 10 (336’): Cow Creek; coarse skeletal clasts in fine-medium grained skeletal limestone, scattered moldic porosity (core slab).

U: Core 11/10 (339.5-340.5’): coarse skeletal limestone, coquina hash, mollusks with moldic & vuggy porosity; black laminar zone (calcite crystals and black organic material), scour at base of laminae, burrows; and limestone, pelloid, medium crystalline, with fine pyrite crystals (core slab).

V: Core 11 (341’): core slab; overview of laminar zone.

W: Core 11 (341’-photo micrograph-25X): detail of laminar zone.

X: Core 12 (358’): Cow Creek; dolomite, fine crystalline, burrowed, silty, wispy black laminations.
Appendix B-Core and cuttings photos taken using Ziess Stemi 305 digital microscope camera

Figure B1-Photomicrographs taken with Stemi 305 microscope digital camera (continued next page).
Microscope photo captions:

A: Core 2 (251’ X40): Kgrl; micrite, very fine grained dolomitic mudstone, tite

B: Core 2 (256.5’ X10 002): crystalline rudist fragment; poorly sorted fine to coarse broken skeletal fragments fill solution cavity, fine skeletal-grain matrix, very good moldic, vuggy and intergranular porosity, drusy cement; top basal Kgrl “reef/mound” facies

C: Core 2 (257’ X10 001): moldic void partially filled with two phases of calcite cement, recrystalline mollusk shell, fine grain matrix with moldic porosity and drusy cement

D: Core 2 (257’ X10 002): coarse skeletal fragments partially fill moldic porosity, coral- caprinid rudist “reef/mound” facies, drusy cement

E: Core 2 (258.5’ X10 001): Kgrl; fine to medium grained skeletal-pellet grainstone matrix, dolomitic, drusy cement with coarse mollusk shell coated with very fine calcite crystals, moldic, vuggy & intergranular porosity

F: Core 2 (258.5 X20 001): Kgrl; Orbitolina fragment

G: Core 3 (261.3’ X10): Kgrl; stylolite, black insoluble material, pressure solution, breaks very coarse rudist shell in fine grained skeletal grainstone matrix with moldic, vuggy & intergranular porosity, calcite crystals fill & line voids

H: Core 3 (261.5’ X20 001): Kgrl; fine skeletal grainstone with vugs & intergranular porosity, drusy cement

I: Core 3 (262’ X10 001): Kgrl; caprinid rudist in fine to medium grained skeletal grainstone matrix, calcite crystals fill and line vugs & molds, transverse cut through caprinid shell wall

J: Core 3 (263’ X10 001): Kgrl; rudist shells dissolved & filled with fine grained skeletal grainstone matrix, moldic & very fine vuggy porosity, drusy cement

K: Core 3 (267’ X10 001): Kgrl; “reef” debris, fine to coarse skeletal clasts fill solution-void & partly fill moldic porosity, fine grained matrix

L: Core 3 (268’ X10 001): Kgrl; coarse caprinid rudist fragment, transverse cut through shell wall, in fine grained matrix, crystals fill and line cavities, drusy cement

M: Core 3 (270’ X10 001): Lower Glen Rose; very fine crystalline, large gastropod (Nerinea) at bottom in fine to medium skeletal grainstone matrix with moldic and intergranular porosity, calcite crystals and drusy cement

N: Core 3 (270’ X20 001): Kgrl; fine to coarse grained skeletal-coated grain grainstone with very good intergranular & vug porosity, fine calcite crystals & drusy cement fill some voids; coarse rudist fragment
O: Core 9 (321’ X10 001): Cow Creek; very fine to fine crystalline skeletal hash with coated grains, dissolved shell fragments (molds), very good moldic porosity, drusy cement

P: Core 10 (335’ X10 001): Cow Creek; very coarse mollusk with moldic porosity in fine recrystalline skeletal grainstone

Q: Core 10 (337’ X30 001): Cow Creek; relic skeletal texture, very fine to microcrystalline calcite with moldic and intercrystalline porosity

R: Core 10 (339.5’ X10 001): Cow Creek; top, stylolite with black insoluble material and very fine chalcopyrite crystals; coarse mollusk fragment; moldic porosity in fine to medium grained recrystalline skeletal grainstone, partly filled by scleractinian coral fragment – tubular corallite, microcrystalline calcite

S: Core 10 (339.5’X10 003): Cow Creek; stylolite with black insoluble material and very fine chalcopyrite crystals; coarse mollusk fragment in fine to medium grained skeletal-coated grain grainstone, recrystalline matrix with moldic and vuggy porosity

Cuttings photomicrographs:

T: 310-320’ 001: Cow Creek; fine grained skeletal grainstone matrix, crystalline with moldic porosity, drusy cement

U: 310-320’ 005: Cow Creek; fine to medium grained skeletal-coated grain-pellet grainstone with good intergranular porosity, calcite cement

V: 310-320’ 006: Cow Creek; black mollusk fragment in fine to medium grained, rounded, grainstone, drusy cement
Appendix C-DSISD No. 1 geophysical log- annotated by Alex S Broun
Appendix D: Selected screen captures from No. 1 downhole video

Figure D1- Selected screen captures from Well No. 1 downhole video.
Downhole video screenshot captions:

A - 71.3 feet: Upper Glen Rose; base of 10’ solution cavity interval developed along bedding plane partings; small flow of water running over loose rock debris and cascading down borehole.

B - 91.9 feet: Lower Glen Rose; burrows (dark gray) in wackestone – packstone.

C - 118.9 feet: Kgrl; fine fracture w/minor breccia in calcareous mudstone.

D - 134.3 feet: Kgrl; thin parting of black wavy laminae in wackestone.

E - 136.0 feet: Kgrl; coarse mollusks in micritic-skeletal limestone.

F - 172.7 feet: Kgrl; stylolite separating buff limestone from gray-blue limestone.

G - 206.7 feet: Kgrl; wavy black laminae in very fine grained wackestone.

H - 248.6 feet: Kgrl; small bedding plane cavity with flow feature.

I - 268.9 feet: Kgrl; “reef/mound” facies, coarse mollusks, vf grainstone matrix.

J - 273.1 feet: Kgrl; caprinid rudist, coarse mollusk fragments in fine to medium grained matrix, dolomitic limestone.

K - 310 feet: Cow Creek; grainstone, scattered coarse mollusk shells in fine-medium grained skeletal-calcarenite matrix.

L - 359.4 feet: Kcc; small bedding plane cavity with flow feature, dolomite
Appendix E: Aqtesolv™ curve fits used for Transmissivity estimates from DSISD well pump test data.

Figure E1-Early time and late time curve fitting for Well No. 1 24-hour pump test data using the Cooper-Jacob straight line fitting method. The early time transmissivity estimate was 2,336 gpd/ft and the late time estimate was 11,340 gpd/ft. Aqtesolv pro aquifer test analysis software was used for curve fitting.
Figure E2-Theis curve fitting for Well No. 2 performance test. A transmissivity of 29.6 gpd/ft was estimated from curve fitting. Aqtesolv pro aquifer test analysis software was used for curve fitting.
INTERLOCAL AGREEMENT

DRIPPING SPRINGS INDEPENDENT SCHOOL DISTRICT
AND
THE HAYS TRINITY GROUNDWATER CONSERVATION DISTRICT

DEDICATED MONITORING WELLS – REAL PROPERTY LICENSE AGREEMENT

This Interlocal Agreement ("Agreement") is entered into by and between the Dripping Springs Independent School District ("Dripping Springs ISD") and the Hays Trinity Groundwater Conservation District ("HTGCD"), collectively referred to as the "Parties," subject to the following terms and conditions herein.

1. RECITALS

WHEREAS, the Parties are political subdivisions organized under the constitution and laws of the State of Texas;

WHEREAS, the Parties have identified certain common, legitimate public purposes in entering into this Agreement;

WHEREAS, Dripping Springs ISD exists to have the primary responsibility for implementing the State’s system of public education and ensuring student performance in accordance with the Texas Education Code;

WHEREAS, HTGCD exists as the State’s preferred method of groundwater management in order to protect property rights, balance the conservation and development of groundwater to meet the needs of this state, and use the best available science in the conservation and development of groundwater;

WHEREAS, in keeping with its legal mandate, HTGCD seeks to construct, operate and maintain up to two dedicated monitoring wells to measure water levels and analyze collected water samples or real property owned by Dripping Springs ISD;

WHEREAS, in keeping with its mandate, Dripping Springs ISD seeks to expand its educational programming to students and provide curricular and extracurricular learning experiences related to the installation and operation of a dedicated monitoring well system and resulting water analysis in Hays County;
WHEREAS, Dripping Springs ISD and the HTGCD desire to contract with each other to efficiently perform their governmental functions as authorized under the Texas Intergovernmental Cooperation Act (Texas Government Code Chapter 731).

WHEREAS, the governing bodies of the Parties have each met in legally convened open meetings and authorized their respective representatives to enter into this Agreement and

NOW THEREFORE, in view of the foregoing and in consideration of the benefits and obligations set forth herein, the sufficiency of which is hereby expressed, the Parties agree as follows:

II. PROPERTY

A. The real property to this Agreement is generally described as, approximately one thousand (1000) square feet within Parcel 1-0.653 acres of 25.0 acres of land along East Mount Gaior Road and near Ranch Road 12 on the southwest corner of real property owned by Dripping Springs ISD as noted by the W.M. Cockburn Survey No. 32, A-97, Hays County, Texas and attached as Exhibit A.

B. The exact location of the dedicated monitoring well system site is further denoted as marked and highlighted on Exhibit A and is included and stated by representatives of each Party prior to submission for approval to each governing board.

C. The designated property may be referred to as the "dedicated monitoring well system site" or "licensed property" in this Agreement.

III. TERM

A. The term of this Agreement shall commence on the December 11, 2017 and will end on December 11, 2021, unless renewed or terminated before that time period, in accordance with this Agreement.

B. The Parties intend to participate in this Agreement for a period of five (5) years but agree and understand for four (4) year terms subject to renewal to allow future governing boards an opportunity to assess the need and desirability of this Agreement and to allow maximum flexibility with regard to the use of the land.

C. The Agreement shall automatically renew unless terminated by either party.

D. Either party may terminate this Agreement with sixty (60) days written notice to the other party.
IV. OBLIGATION OF THE PARTIES

A. Dripping Springs ISD shall be responsible for—

1. Granting HTGCD a revocable license for the sole purpose of constructing, operating and maintaining up to two (2) dedicated monitoring wells on real property owned by Dripping Springs ISD and described in Paragraph II and for the term set forth in Paragraph III;

2. Allowing HTGCD staff and authorized representatives access to the dedicated monitoring well system site during regular business hours or other hours are approved by Dripping Springs ISD in writing;

3. Scheduling, maintaining and coordinating its educational programming with HTGCD to include—

a. Two pre-presentation per school year by HTGCD staff to students at Dripping Springs ISD to describe the purpose of the dedicated monitoring well system along with the geology and hydrology of the site and an explanation of the core samples and data analysis used in monitoring the groundwater;

b. Student field trips for the purpose of exploring the area around the dedicated monitoring well system, viewing the wells in operation, and understanding the importance of monitoring the groundwater in Hays County;

c. Interactions with teachers in planning both curricular and field trip experiences to ensure students understand the necessity for the dedicated monitoring well system and the importance of water (both quantity and quality) for Hays County, and;

d. Interactions with students for consultation with HTGCD staff to assist students using data derived from the dedicated monitoring well system for in-depth school study or related projects;

e. Aligning the educational program with the District curriculum and state standards (TEKS);

B. HTGCD shall be responsible for—

1. Preparing the dedicated monitoring well system site to include cutting or trimming without any diversion to existing water flow;
2. Constructing, Installing, Operating, Maintaining or Repairing during the term of this Agreement and all at the sole cost of HTGCD;

a. Fencing to restrict access to the licensed property with gate(s) secured by combination lock to allow access exclusively to HTGCD representatives or its authorized agents, contractors and representatives during regular business hours or at other times preauthorized by Dripping Springs (SD) in writing;

b. Educational signs on fence;

c. Cement pads for well heads and loose stone material ground cover within the fenced area;

d. Up to (2) two dedicated monitoring wells within the fenced area; and

e. Telemetry transducer system, satellite dish and pumps with the assistance and all of the Texas Water Development Board;

3. Complying with all applicable federal, state and local laws, regulations, ordinances and rules including matters involving environmental protection, hazardous or solid waste disposal;

4. Ensuring —

a. No waste is created or disposed of on the licensed property;

b. No nuisance is created on the licensed property;

c. No access of the licensed property to anyone other than HTGCD staff and authorized agents and representatives;

d. All labor and materials used on or about the licensed property are fully paid; and

e. No mechanic’s or material man’s lien of any nature on the licensed property;

f. No utility services to the well area;

g. No groundwater pumping for any other purpose other than expressed herein;

5. Removing all installed equipment and returning the licensed property to its original state, including without limitation plugging and filling any wells, upon the end or termination of this Agreement, and at the sole cost of HTGCD;
6. Using the licensed property for any data collection and education;

7. Delivering to Dripping Springs ISD —
   a. A video depicting installation of the dedicated monitoring well system;
   b. A drone video;
   c. Core samples for use and storage with the University of Texas and samples to
      Dripping Springs ISD for its purposes including education;
   d. Geotechnical data;
   e. Hosting telemetry data at the following URL: www.haysgroundwater.com;
   f. Participation in educational programs and related services as noted in Paragraph
      IV(A)(3); and
   g. Geochronological or Water Quality Analysis without cost unless more specific testing is
      requested;

8. Assuming full legal liability for all claims of unlawful water diversion, nuisance, or any
other claim related to or arising from HTGCD's acts or omissions under this Agreement including
defense costs and damages attributed to Dripping Springs ISD;

9. Inspecting the licensed property before and during its intended use to determine
suitability and to discover any harmful or dangerous condition; accept full liability for same and
responsibility for all remedial steps at its own cost; and

10. Producing insurance to address any claims related to the dedicated monitoring well
system as determined by Dripping Springs ISD, including designating Dripping Springs as a
beneficiary.

V. GENERAL TERMS AND CONDITIONS

A. This Agreement shall be governed by, and interpreted and enforced in accordance
   with, the laws of the State of Texas. This Agreement is performable in Hays County, Texas. Venue
   for any dispute or proceeding concerning the interpretation and/or enforcement of this
   Agreement shall be in the state and federal courts of Hays County, Texas.
B. This Agreement, together with any instruments or documents expressly incorporated herein by reference and any attachments hereto, contains the entire agreement between the Parties with respect to the subject matter hereof. No other agreement, statement, or promise made by or to any officer, employee, official, trustee, representative or agent of any party that is not contained herein shall be of any force and effect. Any modifications to the terms of this Agreement must be in writing and approved and signed by the Parties.

C. Neither Party may sell, assign, pledge, transfer or convey any interest in this Agreement nor delegate the performance of any duties hereunder by transfer, by subcontracting or by any other means, without the prior written consent of the other party. Failure to secure prior written consent of both Parties shall result in the termination of this Agreement.

D. If any provision, section, subsection, paragraph, sentence, cause or phrase of this Agreement, or the application of same to any person or set of circumstances, is for any reason held by a court of competent jurisdiction to be invalid, void, or otherwise unenforceable, or if a change in applicable law results in the same, the remaining provisions shall continue in full force and effect, unless a written amendment to this Agreement is approved by the Parties.

E. This Agreement shall be construed without regard to the identity of the person or persons who drafted the provisions contained herein. Each and every provision of this Agreement has been reviewed by both Parties. As a result, each and every provision of this Agreement shall be construed as each party hereto participated equally in the drafting thereof. Any rule of construction that the document is to be construed against the drafting parties shall not be applicable to this Agreement.

F. Notice of an asserted breach of this Agreement shall be served in writing on the other party and provide the other party with thirty (30) days to cure the alleged deficiency. If such efforts are unsuccessful, the Parties shall attempt to informally resolve any dispute regarding or related to this Agreement. If the dispute cannot be informally resolved, the Parties shall enter non-binding mediation provided over by a mediator mutually acceptable to the Parties with mediation costs to be borne equally by the Parties. Any legal proceeding by any party may not be commenced until all opportunities to resolve the dispute, including good faith mediation are unsuccessfully exhausted.

G. The Parties agree to mutual indemnification to the extent permitted by the Texas Constitution and laws of the State of Texas.
H. Unless otherwise specified in another section of this Agreement, any notice or communication required or permitted hereunder shall be given in writing, by:
- personal delivery,
- express delivery service with proof of delivery,
- United States mail, postage prepaid, registered or certified mail, or
- facsimile, or
- electronic mail, as follows:

Superintendent of Schools
Dripping Springs ISD
510 West Mercer Street
Dripping Springs, TX 78620

General Manager
HTGCD
P.O. Box 1618
Dripping Springs, TX 78620

I. The signatories to this Agreement for the Parties each represent, warrant, assure, and guarantee that they have full legal authority to execute this Agreement respectively, and to bind the Parties to all of the terms, conditions, provisions and obligations herein contained.

This Agreement is dated and effective as of the latest signature date below:

[Signature]
President, Board of Trustees
Dripping Springs Independent School District

12/15/17
Date

[Signature]
President, Board of Directors
Hays Trinity Groundwater Conservation District

Date

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