

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MEASURED STRATIGRAPHIC SECTIONS, SALT CROTON
AND CROTON CREEK VALLEYS, KENT AND STOREWELL
COUNTIES, TEXAS

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INTRODUCTION

This report contains the measurements and descriptions of thirteen stratigraphic sections in Salt Croton and Croton Creek Valleys in Kent and Stonewall Counties, Texas. Four sections of Permian rocks were measured in Salt Croton Creek Valley and six sections were measured in Croton Creek Valley during November and December 1906. Three sections are included from U.S. Geological Survey Water Supply Paper 100-CC (Baker, Hughes, and Yost, 1904).

Figure 1 shows the geology, geologic section A-A', and the locations of the measured sections in Salt Croton Creek Valley. Figure 2 shows the geology, geologic section B-B', and the locations of the measured sections in Croton Creek Valley.

Figures 1 and 2 (Captions on next page) belong near here.

STRATIGRAPHIC SECTIONS

Section 1

Section on south bank of Dove Creek about half a mile north of Dove Creek Salt Flat, measured by McMillan (1906, section 5, p. 30) on bluff, south side of Dove Creek, near center of section 197, block F, H and T C RR Survey, Stonewall County." Section 3 in Baker, Hughes, and Yost (1904), Water-Supply Paper 100-CC.

Figure 1. Geologic map of a part of Salt Croton Creek and geologic section A-A'.

Figure 2. Geologic map of a part of Salt Croton Creek and geologic section B-B'.

	<u>Feet</u>	<u>Inches</u>
Lower Dakota Gypsum, massive, white; some residual dolomitic layers. Marker bed D ₀ of composite electric log on plate 2 of Water-Supply Paper 100, CC-----	19	0
Sand, red, very fine, unconsolidated-----	42	0
Dolomite, gray, dense-----		6
Sand, red, very fine, unconsolidated-----	50	0
Gypsum, white, anhydritic and dolomitic-----	4	0
Sand, red, fine, unconsolidated-----	20	0
Clay, red and green, gypsiferous, hard-----	3	0
Top of Childress Gypsum in creek bed. Top marker bed D ₀ of composite electric log on plate 2 of Water-Supply Paper 100, CC.		
Level of Dove Creek estimated altitude of 1,713 ft.		
Total of section	149	0

Section 2

Section on north bank of Salt Croton Creek about 1.2 miles northeast of Dove Creek Salt Flat, Stonewall County.

Poorly exposed and slumped, not measured-----

Dolomite, gray, weathered----- 2

Gypsum, gray, forms bench, marker bed D₀ of composite electric log on plate 2 of Water-Supply Paper 100, CC----- 0

Silt, reddish-brown, partly consolidated; weathers into silty fragments, some slumping----- 15

Poorly exposed and partly slumped, probably reddish-brown silt----- 1

	<u>Feet</u>	<u>Inches</u>
Scale, gray, some red; poorly exposed-----	1	2
Gypsum, gray nodular, continuous layer-----		1
Silt, reddish-brown and gray, interbedded with thin layers of gypsum-----	2	
Gypsum, gray-----		1
Dolomite, gray, blocky fracture-----		2
Silt, reddish-brown some gray streaks with a few eighth- inch selenite layers-----	1	4
Gypsum, gray, nodular, not a continuous layer, and reddish- brown silt-----		2
Silt, reddish-brown, poorly consolidated, weathers into nodular fragments-----	4	0
Gypsum, gray, continuous layer-----		2
Silt, reddish-brown, poorly consolidated, weathers into nodular fragments-----	3	0
Gypsum, nodular, gray, continuous layer-----		2
Silt, gray partly consolidated-----		2
Dolomite, gray-----		2
Silt, reddish-brown, partly consolidated, blocky fracture----	1	0
Gypsum, red and gray banded in lower part, in layers 1 to 2 inches thick. Forms bench, marker bed Dd on plate F of Water-Supply Paper 100, CC-----	4	4
Silt, gray, poorly resistant, weathers into 6-inch nodules---	2	0

	<u>Feet</u>	<u>Inches</u>
Silt, gray, with gray gypsum nodules; poorly exposed-----	5	0
Level of Salt Croton Creek, estimated altitude 1,675 ft.-----		
Total of section-----	04	5

Section 3

Section on south bank of Salt Croton Creek about half a mile south-southeast of the mouth of Baystack Creek, Stonewall County.

Gypsum, massive, lower part gray and pink banded. Forms

upper bench, marker bed D. of composite electrical log on plate 2 of Water-Supply Paper 1800CC-----	17	0
Silt, reddish-brown, some layers gray silt, hackly fracture, several 1-inch layers of gray gypsum, poorly exposed----	35	0
Gypsum, gray, and gray dolomite-----		3
Silt, reddish brown, some gray layers, hackly fracture, some 2-inch layers of nodular gray gypsum-----		4
Gypsum, gray, nodular-----		2
Silt, gray-----		2
Shale, reddish-brown, hackly fracture-----		2
Gypsum, gray, crystalline, nodular, breaks into 1-inch fragments. Forms bench. Marker bed Dd on composite electric log on plate 2 of Water-Supply Paper 1800CC----	3	0
Silt, gray, partly consolidated, breaks into hackly fragments and grades into next lower unit-----	1	0
Silt, reddish-brown, contains some 1-inch nodular gray gypsum layers and some half-inch selenite bands. Grades into next lower unit-----	2	0

	<u>Feet</u>	<u>Inches</u>
Silt, gray, with a 1½-inch gray gypsum layer and a 1-inch gray gypsum layer at base-----	1	6
Silt, reddish-brown, contains numerous half-inch gray gypsum layers and eighth-inch selenite bands. Upper third and lower third more resistant than middle part-----	3	0
Silt, gray, middle part resistant, shows exfoliated weathering-----	1	0
Silt, reddish-brown, numerous eighth-inch selenite bands, resistant-----	1	0
Silt, reddish-brown, nonresistant and poorly exposed-----	5	0
Gypsum, gray, and gray dolomite and gray shale-----		8
Silt, reddish-brown, numerous eighth-inch selenite bands particularly in lower part-----	2	0
Silt, gray 1-inch resistant gray gypsum layer in middle-----	1	0
Silt, reddish-brown, breaks into half-inch nodules. Numerous eighth-inch selenite layers-----	0	0
Silt, gray, fairly resistant-----	1	0
Level of Salt Croton Creek, estimated altitude 1,005 ft.-----		
Total of section-----	52	6

Section 4

Section on northwest bank of Salt Croton Creek about 1.5 miles southeast of the mouth of Haystack Creek, Stonewall County.

Gypsum, gray, weathered, full thickness not present.

Marker bed D. of composite electric log on plate 1 of

Water-Supply Paper 1000 CC----- 3 0

	<u>Feet</u>	<u>Inches</u>
Silt, reddish-brown, with 10 to 15 gray 1-inch layers of gypsum. Material is slumped and poorly exposed-----	50	0
Gypsum, gray, banded in lower part, weathered. Marker bed Dd of composite electric log on plate 2 of Water- Supply Paper 100, CC-----	0	0
Silt, reddish-brown, some thin selenite layers-----	1	0
Gypsum, gray, in several nodular layers with gray silt-----	1	0
Silt, gray, with some eighth-inch selenite layers-----	1	0
Silt, reddish-brown, several 1-inch layers of nodular gray gypsum and numerous eighth-inch selenite layers. Inaccessible for close examination-----	35	0
Silt, gray, in upper part some nodules of gypsum or dolomite as much as 1 foot wide and 6 inches thick-----	2	0
Silt, reddish-brown, conchoidal fracture, some eighth-inch selenite layers-----	5	0
Gypsum, gray, continuous layer-----		0
Silt, reddish-brown-----	2	0
Dolomite, gray, nodular, continuous bed-----		0
Silt reddish-brown, resistant, many eighth-inch selenite beds-----		0
Silt, reddish-brown, few eighth-inch selenite layers-----	5	0
Silt gray, slightly indurated-----		0
Gypsum, gray, nodular, not continuous, and gray silt-----		0
Silt reddish-brown, conchoidal fracture few half-inch gray gypsum lenses-----		0
Silt, reddish-brown, and numerous eighth-inch selenite layers--	2	0

	<u>Feet</u>	<u>Inches</u>
Silt, gray, hackly fracture-----		2
Covered, probably gray or reddish-gray silt-----	2	0
Level of Salt Croton Creek, approximate altitude 1,055 ft----		
Total of section-----	113	0

Section 5

Section 4 to 5 miles east-southeast of Dove Creek Salt Flat, measured by Roth (1937, p. 439-444) from near the center of sec. 13, T. 11N., R. 10E., Houston and Texas Central RR Co. Survey to the top of the promontory in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, Stonewall County, Sec. 1, p. 14-15, Water-Supply Paper 166 CC.

	<u>Feet</u>	<u>Inches</u>
<u>'Triassic'</u>		
<u>Custer:</u>		
Sandstone, orange, polished, eolian; interval not measured. Childress dolomite horizon		
Gypsum and anhydrite, white, with pink laminations-----	1	0
Sandstone, orange, polished, eolian; silt and grits-----	20	0
<u>Unconformity</u>		
<u>Persian</u>		
<u>'Blaine of Texas':</u>		
Shale, reddish-brown, soft; ordinarily absent. Wagon Yard		
Gypsum or Royston Gypsum-----		2
Gypsum, white and gray dolomitic gypsum; this is maximum thickness observed; bed is very prominent bench-former containing man. holes; locally removed due to uniformity above. Marker bed Bt of composite electric		

	<u>Feet</u>	<u>Inches</u>
log on plate 2 of Water-Supply Paper No. 60-----	15	0
Shale, reddish-brown, soft; locally there are a few beds of gypsum 1 to 3 inches in thickness; interval ordinarily forms very steep slope-----	60	10
Dolomite, light gray, blocky, and gypsum; very local-----		4
Shale, reddish-brown, soft, with some thin beds of gypsum about 2 feet below top-----	5	0
As below (material) with gypsum and selenite dikes-----	10	0
Interval consists of about 6 benches, each capped with gray dolomite and gray gypsum or shale, or both; benches separated by reddish-brown shale-----	31	0
Shale, reddish-brown-----	5	2
Shale gray-green and reddish-brown, with 1 to 2 inches gypsum layers-----	5	2
Shale, reddish-brown with reddish-orange or salmon gypsum and selenite-----	5	2
Dolomite, gray to buff, silty; much greenish-gray shale conglomerate associated with this dolomite; bed forms minor benches and contains many pebbles, <u>Pseudosuccinea</u> sp.-----		10
Shale, reddish-brown; upper few feet of gray-green shale and selenite-----	13	0
Gypsum, gray-green, white and salmon; bed very massive and blisters well developed on its surface-----	10	0
Shale reddish-brown-----	1	0

	<u>Feet</u>	<u>Inches</u>
Gypsum, white, massive, nodular-----	6	10
Dolomite, light gray, blocky, very thin-bedded-----		10
Shale, greenish-gray and oolite-----		10
Shale, reddish-brown and selenite-----	2	0
Gypsum, greenish, reddish-brown and white, with some reddish-brown shale shells; greenish gypsum locally very persistent and about 1 1/2 feet thick; on average about 2 feet above the dolomite-----	3-4	0
Aspermont or Guthrie Dolomite-----		
Dolomite, gray, slabby; upper one-third is coquina; fossils forming this coquina occur in beds about 3 inches thick; main part of dolomite must have been deposited in rather shallow water; plentiful ripple marks and 2 to 3 inch beds of greenish shale conglomerates in dolomite matrix; great abundance of cephalopods and ammonites probably due to marine current moving fast enough to carry animals into environment alien to their existence, causing extinction; <u>Perrinites hill</u> and <u>Euxedileotta</u> sp. This bed has been mapped as Aspermont or Guthrie Dolomite. It is doubtful if this correlation can be established as it is extremely local in mode of oc- currence. Marker bed D1 of composite electric log on plate 2 of Water-Supply Paper 100-CC-----	0	0

	<u>Feet</u>	<u>Inches</u>
Dolomite, salined to reddish, granular, blocky to slabby; some dolomite has greenish cast-----	1	0
Gypsum conglomerate in greenish matrix; some of this material has reddish cast-----	1-2	0
Shale, greenish-gray, blocky, gritty; brown and other colors near top-----	3	0
Mostly covered; some reddish-brown shales exposed-----	2	0

Section C

Section on the north bank of Salt Croton Creek about nine-tenths
of a mile south-southeast of its confluence with Salt Fork Brazos
River, Stonewall County.

	<u>Feet</u>	<u>Inches</u>
Dolomite, gray, sandy, platy, lower 1 foot massive, full thickness not present-----	10	0
Silt, brown, poorly exposed-----	15	0
Shale, greenish-gray, blocky, gritty -----	7	0
Silt brown, poorly exposed, also has 1 foot of platy white dolomite, slumped-----	8	0
Gypsum, gray, bedded-----	2	0
Dolomite, gray, sandy, fossiliferous, weathers to platy 1-inch fragments. Marker bed D1 of composite electric log on plate 2 of Water-Supply Paper 100 C3-----	2	0
Gypsum, purple, nodular, in uneven beds less than 1 inch thick-----	1	0

	<u>Feet</u>	<u>Inches</u>
Clay, gray-----		3
Dolomite, gray, nodular-----		3
Gypsum, gray-----		1
Gypsum, dark purple, weathers to light-gray, even bedded---		5
Shale, gray, massive, shows exfoliated weathering, few gypsum lenses and selenite beds-----	3	0
Silt, reddish-brown, about one-fourth is thin selenite beds-	1	0
Silt and clay, reddish-brown and gray, massive, exfoliated weathering; some gypsum-----	4	0
Silt, reddish-brown with many selenite layers and gray dolomite that forms resistant nodules-----	2	6
Gypsum, gray-----		2
Silt, gray, conchoidal fracture-----		1
Silt, reddish-brown, about one-fourth is thin selenite layers-----	2	0
Gypsum, gray-----		4
Dolomite, gray-----		2
Silt, reddish-brown, few thin selenite layers-----	1	0
Silt, gray, with some gray gypsum and gray dolomite. Evenly bedded, lower $1\frac{1}{2}$ feet below the level of Salt Croton Creek-----	2	0
Level of Salt Croton Creek at estimated altitude of 1,333 ft.-----		
Total of section-----	5	0

Section 7

Section on the west bank of Croton Creek about a mile upstream from the mouth of Short Croton Creek, Sec. 5, T. 10, Water-Supply Paper 100, CC, Kent County.

	<u>Feet</u>	<u>Inches</u>
Gypsum, white and brown-banded; caps hill-----	2	0
Sand, brown, fine-grained, poorly cemented-----	5	0
Gypsum, white-----		5
Sand, brown, fine-grained, poorly cemented-----	1	0
Gypsum, white-----	0	4
Sand, brown, fine-grained, poorly cemented-----	7	4
Sand, brown, medium- to fine-grained; partly cemented		
with gypsum. Some thin pink gypsum layers-----	4	10
Sand, brown, medium- to fine-grained, poorly cemented-----	2	0
Gypsum, white, massive; forms beach. Marker used C of composite electric log on plate 2 of Water-Supply Paper 100, CC-----	2	4
Sand, brown; has some gray lenses; medium- to fine-grained upper and lower parts poorly cemented, middle part slightly indurated-----	32	0
Sand, brown or gray, medium- to coarse-grained, some layers cemented with gypsum, alternating with white gypsum as much as 3 inches thick. Some layers stand out on steep slopes-----	0	0
Sand, reddish-brown, fine-grained, poorly cemented; some gray layers-----		

	<u>Feet</u>	<u>Inches</u>
Estimated interval to the top of marker bed Da of composite electric log on plate 2 of Water-Supply Paper 100, CC, 40 feet.		
Total of section-----	89	9

Section 6

Section on north bank of Croton Creek about six to eight-tenths of a mile east of the mouth of Short Croton Creek, Kent County.

	<u>Feet</u>	<u>Inches</u>
Gypsum, gray, weathered, banded, may not be total thickness. Marker bed Da of composite electric log on plate 2 of Water-Supply Paper 100, CC-----	8	0
Sand, reddish-brown, very fine-grained, partly cemented by gypsum, weathers into poorly cemented rounded boulders-----	6	0
Sand, reddish-brown, unconsolidated; few 1-inch gypsum layers-----	15	0
Gypsum, gray banded, bottom irregular; a block, as float, shows rill marks-----	2	6
Sand, very fine-grained and silt. mottled reddish-brown and gray; some irregular gypsum layers half an inch thick-----	5	0
Sand, very fine-grained and silt. mottled reddish-brown and gray; some beds fairly even, others cemented by gypsum and nodular. At places uniform and unconsolidated-----	1	0

	<u>Feet</u>	<u>Inches</u>
Covered, probably very fine-grained sand-----	2	6
Silt, mottled reddish-brown and gray, about a half cemented with gypsum; some gypsum crystals-----	4	0
Covered-----	1	6
Gypsum, gray, bottom not exposed. Marker bed D ₆ of composite electric log on plate 2 of Water-Supply Paper 100-CC-----	4	0
Level of Croton Creek, estimated altitude 1,745 ft-----		
Total of section-----	51	6

Section 2

Section on the north bank of Croton Creek about 1.5 to 2 miles east-northeast of the mouth of Short Croton Creek, Stanevall County.

	<u>Feet</u>	<u>Inches</u>
Silt, reddish-brown and gray, partly consolidated, only locally present-----	5	0
Gypsum, gray and white, finely banded, some bands wavy; some parts massive, may be thicker at places. Marker bed D ₂ on composite electric log on plate 2 of Water- Supply Paper 100-CC-----	5	0
Sand, reddish-brown, fine-grained; poorly exposed-----	2	0
Sand, reddish-brown, fine-grained, partly cemented by gypsum-----		0
Sand, reddish-brown and gray, fine-grained, poorly consolidated, partly cemented by thin layers of gypsum--	4	0
Sand, reddish-brown and gray mottled, unconsolidated-----		7
Gypsum, gray-----		5

	<u>Feet</u>	<u>Inches</u>
Sand, reddish-brown, very fine-grained, partly cemented by thin selenite layers-----	4	0
Sand, reddish-brown, medium- to fine-grained-----	1	3
Sand, reddish-brown, fine-grained, cemented by gypsum in massive, nodular, or laminated gray and white layers-----	1	3
Sand, reddish-brown on surface, but appears to be light gray on subsurface. Parts partly cemented by gypsum cement, some thin selenite layers-----	7	0
Dolomite, gray, thin-bedded; makes large slabs on slopes below outcrop area-----	1	3
Sand, very fine-grained, gray on subsurface, generally poorly consolidated by gypsum-----	8	6
Sand, dark reddish-brown, very fine-grained, partly consolidated with gypsum or thin selenite layers-----	9	0
Gypsum, pink and white, lower part banded, bandy wavy, upper part less banded. Marker bed D _b of composite electric log on plate 2 of Water-Supply Paper 1069CC-----	10	0
Sand, reddish-brown, mottled with gray, very fine- grained, fairly uniformly massive; in lower part some thin layers cemented by gypsum. Upper 6 inches partly consolidated with gypsum cement-----	5	6
Silt and clay, reddish-brown, partly consolidated, some layers cemented by gypsum-----	5	0

	<u>feet</u>	<u>Inches</u>
Gypsum, gray, nodular-----		2
Silt, red, unconsolidated-----	1	0
Covered to level of Croton Creek, probably very fine sand and silt-----	10	0
Level of Croton Creek at estimated altitude 1,735-----	<hr/>	
Total of Section-----		1

Near the center of the bluff on which section 2 was made, at and just below the level of marker bed D₀, the material at the surface consists of as much as 10 feet of generally poorly sorted sand and gravel containing water-worn invertebrate Cretaceous fossils overlain by as much as 1 foot of greenish- to light-gray fossiliferous silt. The material is an alluvial sequence, probably Wisconsinan in age.

At the eastern end of the bluff, marker bed D₀ is missing, and the material exposed at the level of D₀ consists of fairly well sorted coarse-grained sandstone and pebble conglomerate. At some places, the material is irregularly bedded and at other places is more regularly bedded and dips to the east-northeast about 15 degrees. The material appears to be Ogalala or possibly Triassic, locally filling a mine mine. Similar sandstone and conglomerate crop out at the top of marker bed D₀ along the top of the valley wall north of Croton Creek for a distance of about half a mile east of section 2.

Near the eastern end of the bluff on which section 9 was measured on the east side of the valley of a small stream tributary to Croton Creek, marker bed Da is present and has numerous caves and sinkholes making natural bridges.

Section 11

Section on the south bank of Croton Creek 2.1 miles east of the mouth of Short Croton Creek, Stonewall County.

	<u>Feet</u>	<u>Inches</u>
Gypsum, gray. Marker bed Da of composite electric log on plate 2 of Water-Supply Paper 1500 CC-----	5	0
Sand, reddish-brown, fine-grained, cemented with gypsum----	1	0
Covered-----	15	0
Dolomite, gray, thin-bedded; makes platy fragments on slopes below exposure-----	1	0
Sand, mottled red and gray, very fine-grained, appears to be gray on subsurface, in part covered-----	0	0
Gypsum, gray-----	1	0
Sand, mottled red and gray, very fine-grained, unconsolidated; appears to be gray on subsurface-----	5	0
Sand, mottled red and gray, very fine-grained, partly cemented with gypsum-----	2	0
Covered-----	3	0
Gypsum, pink and white banded; bands vary in lower part. Marker bed Db on composite electric log on plate 1 of Water-Supply Paper 1500 CC-----	10	0

	<u>Feet</u>	<u>Inches</u>
Sand, brown, spotted with gray, fine-grained, poorly consolidated-----	2	4
Sand, brown, mottled with gray in lower part, very fine-grained, slightly consolidated; some white gypsum nodules to 1 inch in lower part-----	7	0
Sand and silt, reddish-brown, some gray-----	5	4
Gypsum, gray-----		3
Sand and silt, reddish-brown, slightly mottled gray; some parts partly cemented by gypsum; in thin layers gives appearance of very irregular bedding-----	5	10
Sandstone, brown, partly consolidated, cemented by gypsum-----		3
Sand, brown, very fine-grained, partly consolidated-----	2	0
Covered to level of Croton Creek, approximate altitude of Croton Creek 1,713 ft-----	10	0
Total of section-----	65	0

Section 11

Section on the south bank of Croton Creek about 3.6 miles west-northwest of the mouth of Croton Creek, Stonewall County.

	<u>Feet</u>	<u>Inches</u>
Gypsum, gray, full thickness not present. Marker bed B _a of composite electric log on plate 2 of Water-Supply Paper 1007CC-----	2	6
Sandstone, reddish-brown, very fine-grained, cemented with gypsum-----	3	0
Sand, reddish-brown, very fine-grained, loose; poorly		

	<u>Feet</u>	<u>Inches</u>
cemented-----	2	0
Sandstone, reddish-brown, very fine-grained, cemented		
with gypsum-----	2	0
Covered and slumped-----	30	0
Gypsum, gray and pink banded. Marker bed No. of		
Composite electric log on plate 2 of Water-Supply		
Paper 156, CC-----	11	0
Sand, reddish-brown, very fine-grained, poorly exposed-----	20	0
Sand, reddish-brown, very fine-grained, few thin selenite		
layers-----	15	0
Sand, reddish-brown, nearly 50 percent consists of		
eighth-inch selenite layers-----	5	0
Gypsum, gray, variable in thickness, averages about-----	1	0
Sand, reddish-brown, fine-grained, few quarter-inch		
gray gypsum layers in central part-----	2	6
Gypsum, gray, nodular; not continuous on bluff-----	2	0
Sand, reddish-brown, mottled with gray, very fine-		
grained, poorly resistant-----	1	6
Gypsum, gray, nodular-----		6
Sand, reddish-brown, mottled with gray, very fine-grained.		
Several 1-inch gypsum layers in upper 2 feet-----	5	0
Gypsum, gray, irregular thickness averages-----	1	0
Sand, reddish-brown-----	2	0
Level of Cotton Creek estimated altitude 1,710 ft-----		
Total of section-----	150	0

Section 12

Section on south bank of Croton Creek about 2 miles west of its
confluence with Salt Fork Brazos River, Stonewall County.

	<u>Feet</u>	<u>Inches</u>
Gypsum, gray, not full thickness. Marker Bed Ba of composite electric log on plate 2 of Water-Supply Paper 165 CC-----	5	0
Not studied-----	5	0
Gypsum, gray, thin-bedded-----	2	0
Not studied-----	10	0
Bolomite, gray, thin-bedded; some gray gypsum-----	2	0
Not studied-----	15	0
Gypsum, gray, weathered. Marker bed Bb of composite electric log on plate 2 of Water-Supply Paper 165 CC----	12	0
Not studied-----	15	0
Gypsum, gray, silty-----	2	0
Not studied-----	20	0
Sand, reddish-brown, very fine-grained; about five layers of nodular gray gypsum and gray silt, each about 4-inch thick but some not continuous; some thin selenite layers-----	15	0
Gypsum, gray and red, nodular, nearly continuous bed ranges from 4 inches to 2 feet thick, average-----	1	3
Sand, reddish-brown, very fine-grained, little selenite----	6	0
Sand, reddish-brown, fine-grained; many thin selenite layers-----	2	

	<u>Feet</u>	<u>Inches</u>
Sand, reddish-brown, fine-grained, little selenite-----	2	0
Gypsum, gray, nodular, and gray silt-----		4
Sand, reddish-brown, very fine-grained; some thin selenite layers-----	5	0
Interval to level of Croton Creek estimated; from another exposure appears to be largely reddish-brown, fine- grained sand with about three nodular gypsum layers 2 inches thick-----	6	0
Level of Croton Creek estimated altitude of 1,709 ft-----		
Total of section-----	131	4

Section 13

Section on the south side of Croton Creek about 1.5 miles west-
southwest of the confluence of Croton Creek and Salt Fork Brazos River,
Boswell County.

	<u>Feet</u>	<u>Inches</u>
Gypsum, gray, massive. Marker bed B ₅ of the composite electric log on plate 2 of Water-Supply Paper 100-CC, estimated-----	10	0
Not studied; very poorly accessible; estimated-----	12	0
Gypsum, gray-----		4
Sand, reddish-brown, very fine-grained; poor access-----	21	6
Sand, reddish-brown, very fine-grained; some thin selenite layers-----	5	0

	<u>Feet</u>	<u>Inches</u>
Sand, reddish-brown; numerous thin selenite layers-----	1	0
Sand, reddish-brown and gray, very fine-grained. Several 2-inch layers of gray gypsum; numerous thin selenite layers in the upper 4 feet-----	16	0
Gypsum, gray, continuous layer-----	1	0
Sand, reddish-brown, very fine-grained, may be silt-----	22	0
Silt, gray-----	1	0
Sand, reddish-brown, very fine-grained; few 4-inch gypsum layers-----	13	0
Silt, gray and reddish-brown; numerous thin selenite layers. Several 1-inch layers of gray gypsum, nodular; layers not continuous-----	1	6
Silt, gray and reddish-brown, thin-bedded, mottled. Four layers of nodular white gypsum, maximum 1-inch thick----	6	0
Level of Croton Creek, estimated altitude 1,785 ft-----		
Total of section-----	105	4

At section 13, estimated depth from level of Croton Creek to top of earlier bed B₂ of composite electric log on plate 2 of Water-Supply Paper 1669CC about 45 ft.

REFERENCES CITED

- Baker, H.C., Hughes, L.S., and Tost, I.D., 1964, Natural Sources of Salinity in the Brazos River, Texas, with particular reference to the Croton and Salt Croton Creek basins: U.S. Geol. Survey Water-Supply Paper 1669-CC, 61 p.
- M. Millon, L.G., 1958. Ground-water geology in the vicinity of Dove and Croton Creeks, Stonewall, Kent, Dickens, and King Counties, Texas, with special reference to salt-water seepage: Texas Board Water Engineers Bull 5801, 53 p.,
- Roth, Robert, 1937, Custer Formation of Texas: Geol. Soc. America Bull., vol. 21 no. 4. p. 421-474.