Please identify what the future use of the site will be upon completion both in the reclamation plan and in the letter of intent.

Proof of Commercial Mineral Deposit

"(4) Operation to Result in Efficient Use of Resource

The operation shall result in an efficient use of the mineral deposit."

According to the Natural Resources Conservation Service soil survey for the proposed mining operation, the sand resource is considered "**Fair**". Excerpts from the soil survey, "Description – Sand Sources" describe the proposed minable sand as follows:

> "Sand is a natural aggregate (0.05 millimeter to 2 millimeters in diameter) suitable for commercial uses with a minimum of processing. (emphasis added) It is used in many kinds of construction."
>
> "The properties used to evaluate the soil as a source of sand are gradation of grain size (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments."
>
> The soils are rated "good," "fair," or "poor" as potential sources of sand. A rating of "good" or "fair" means that sand is likely to be in or below the soil."

The available drill logs further confirm the site has a sand resource of considerable depth. The following water well, well logs illustrate the extent of the sand and gravel resource on the proposed mine site. Based on the three well logs taken across the property, the sand and gravel resource vary in extent from 56 feet to 88 feet of actual depth of sand and gravel. (The depth of the of the in-place resource varies in depth from 77 feet to 100 feet and includes interbedding of clay, shale and sandstone.) The "contaminates" (clay, shale and sandstone) will be removed at the on-site processing facility.

WR-26-72

THIS FORM MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION OF THE WORK DESCRIBED HEREON. TYPE OR PRINT IN BLACK INK.

COLORADO DIVISION OF WATER RESOURCES

101 Columbine Bldg., 1845 Sherman St.
Denver, Colorado 80203

WELL COMPLETION AND PUMP INSTALLATION REPORT

PERMIT NUMBER 6969-F

RECEIVED JUN 1973 WATER RESOURCES STATE ENGINEER COLO.

WELL OWNER Schubert Ranches Inc S-W ¼ of the S-E ¼ of Sec. 20

ADDRESS RT-2 Calhan, Colo. T. 14 S, R. 62 W, 6TH P.M.

DATE COMPLETED May, 1973

HOLE DIAMETER

36" in. from 0 to 102 ft.

_____ in. from _____ to _____ ft.

_____ in. from _____ to _____ ft.

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	2	top Soil	
2	8	sand gravel	
8	12	Clay	
12	26	Sand gravel	
26	32	Clay	
32	82	Sand + gravel	
82	100	Sand + gravel (Cerrio)	
100	102	Clay & Shale	

TOTAL DEPTH 102

Use additional pages necessary to complete log.

CASING RECORD: Plain Casing

Size 16" & kind Steel from 0 to 59 ft

Size _____ & kind _____ from _____ to _____ ft

Size _____ & kind _____ from _____ to _____ ft

Perforated Casing

Size 16 & kind Steel from 59 to 102 ft

Size _____ & kind _____ from _____ to _____ ft

Size _____ & kind _____ from _____ to _____ ft

GROUTING RECORD

Material Clay

Intervals 0 - 25

Placement Method poured

GRAVEL PACK: Size 9/16

Interval _____

TEST DATA

Date Tested May, 197

Static Water Level Prior to Test 34 ft

Type of Test Pump Turbine

Length of Test 24 hrs.

Sustained Yield (Metered) 840

Final Pumping Water Level Bottom

WELL LOG 6971-FP

From	To	Type of Material	Water Loc.
0	2	top soil	
2	8	Clay	
8	25	sand & gravel R+J	
25	33	sand gravel J	
33	37	sand gravel & clay	
37	45	sand gravel	
45	53	Clay	
53	77	sand gravel	
77	78½	shale	

Use additional paper if necessary to complete log.

WELL DATA

Type Drilling Reverse Rotary

HOLE DIAMETER:

32 in. from 0 ft. to 78½

____ in. from ____ ft. to ____

____ in. from ____ ft. to ____

CASING RECORD

Plain Casing

Size 16, kind Steel from 0 ft. to 38½

Size __, kind ____ from ____ ft. to ____

Size __, kind ____ from ____ ft. to ____

Perforated Casing

Size 16 kind Steel from 38½ ft. to 78½

Size __, kind ____ from ____ ft. to ____

Size __, kind ____ from ____ ft. to ____

GROUTING RECORD

Material ____

Intervals ____

Placement Method ____

GRAVEL PACK RECORD

Size 9/16 to 3/4 Interval ____

TEST DATA

Date Tested May 69

Type of Pump Turbine

Length of Test 24 hrs

Constant Yield 600

Drawdown 40

WELL DRILLER'S STATEMENT

The undersigned, being duly sworn, deposes an says: he is the driller of the well hereon described; he has read the statement made here knows the content thereof, and the same is true of his own knowledge.

X J. R. Hamaker

License No. 71

State of Colorado, County of Elbert) ss

Subscribed and sworn to before me this 15 day of February, 19 70

My Commission expires Dec 6, 19 70. Bonnie Delores Hamaker
Notary Public

WRJ-25-72

THIS FORM MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION OF THE WORK DESCRIBED HEREON. TYPE OR PRINT IN BLACK INK.

COLORADO DIVISION OF WATER RESOURCES
101 Columbine Bldg., 1845 Sherman St.
Denver, Colorado 80203

RECEIVED
JUL 11 '72
WATER RESOURCES STATE ENGINEER COLO.

WELL COMPLETION AND PUMP INSTALLATION REPORT

PERMIT NUMBER 9642-FP

WELL OWNER Buddy B. Babcock NE ¼ of the NW ¼ of Sec. 32

ADDRESS R. #2 Colhan, Colo. T. 14 S, R. 62 W, 6th P.M.

DATE COMPLETED 2-18, 1972

HOLE DIAMETER

30 in. from 0 to 96 ft.

_____ in. from _____ to _____ ft.

_____ in. from _____ to _____ ft.

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	2	top Soil	
2	9	Sand & gravel	
9	11	Clay	
11	15	Sand & Gravel	
15	23	Sand Stone	
23	39	Sand med. fine	
39	45	Clay	
45	60	Sand & gravel & Rock	
60	71	Sand & Gravel	
71	74	Sand gravel Rock	
74	94	Sand gravel Corris	
94	96	Shale	

TOTAL DEPTH 96

Use additional pages necessary to complete log.

CASING RECORD: Plain Casing

Size 16" & kind Tested from 0 to 56 ft

Size _____ & kind _____ from _____ to _____ ft

Size _____ & kind _____ from _____ to _____ ft

Perforated Casing

Size 16" & kind Steel from 56 to 96 ft

Size _____ & kind _____ from _____ to _____ ft

Size _____ & kind _____ from _____ to _____ ft

GROUTING RECORD

Material 0

Intervals _____

Placement Method _____

GRAVEL PACK: Size 9/16

Interval _____

TEST DATA

Date Tested 2-19, 1972

Static Water Level Prior to Test 29 ft

Type of Test Pump Turbine 24

Length of Test 24

Sustained Yield (Metered) 480

Final Pumping Water Level Bottom

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Bijou loamy sand, 1 to 8 percent slopes	26.5	3.6%
6 Sand	Bijou sandy loam, 0 to 3 percent slopes	52.9	7.3%
28 Fair	Ellicott loamy coarse sand, 0 to 5 percent slopes	406.4	55.7%
78 Fair	Sampson loam, 0 to 3 percent slopes	96.2	13.2%
95	Truckton loamy sand, 1 to 9 percent slopes	31.7	4.3%
97	Truckton sandy loam, 3 to 9 percent slopes	12.4	1.7%
101 Fair	Ustic Torrifluvents, loamy	101.3	13.9%
106	Wigton loamy sand, 1 to 8 percent slopes	2.0	0.3%
Totals for Area of Interest		**729.4**	**100.0%**

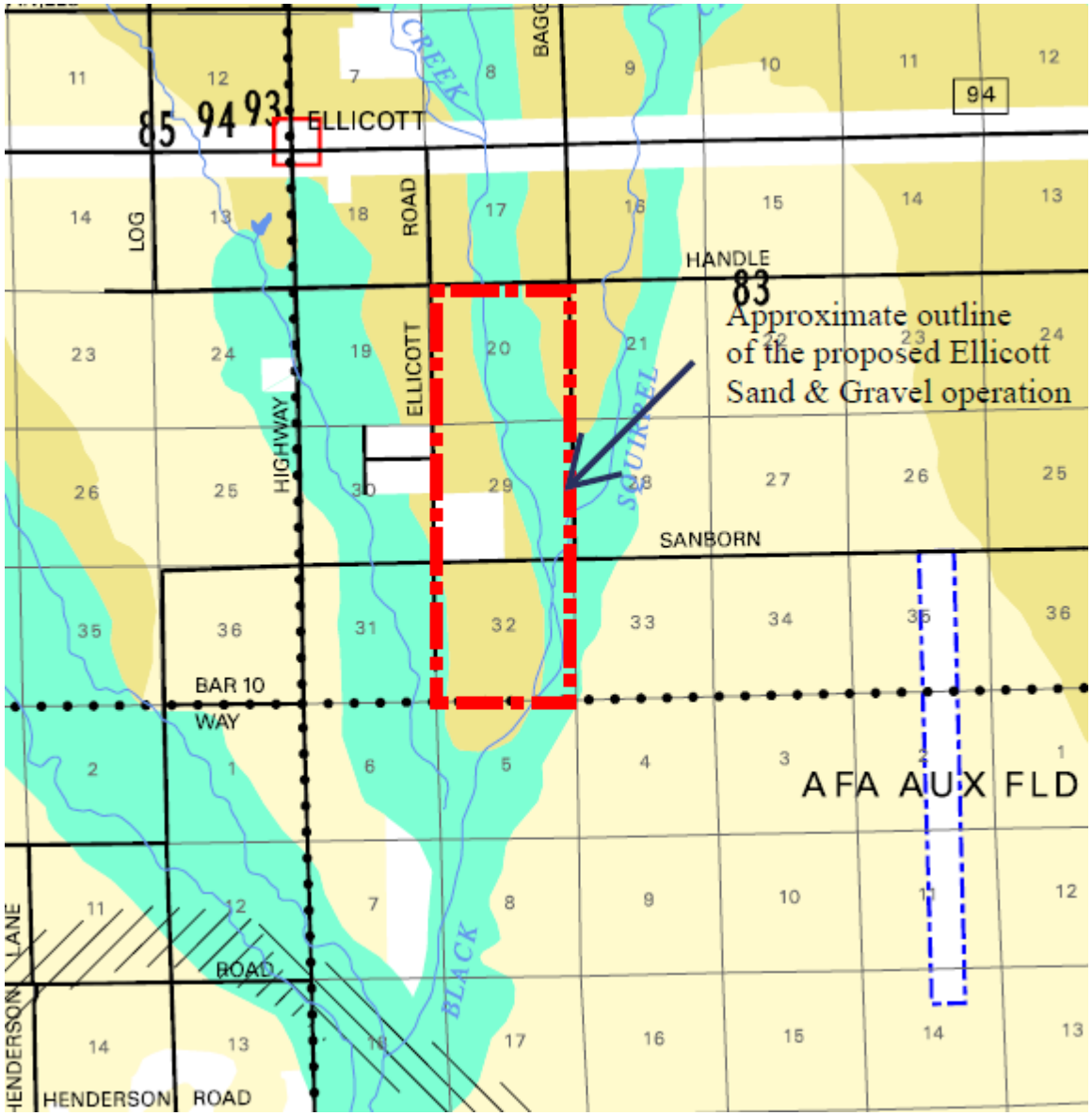
"(10) Commercial Mineral Deposit Required

A commercial mineral deposit as defined by State Statute shall exist on the land on which the operation will be located."

- C.R.S. 34-1-302(1) "'Commercial mineral deposit' means a natural deposit of … sand, gravel…for which extraction by an extractor is or will be commercially feasible and regarding which it can be demonstrated by geologic, mineralogic, or other scientific data that such deposit has significant economic or strategic value to the area, state ..."
- Based on the following from the Ellicott Valley Comprehensive Plan, The proposed sand and gravel operation should fit nicely within the Ellicott Valley Comprehensive Plan Position Statement, "The Valley is ultimately capable of providing many of the elements necessary to support residential, commercial and industrial development. It is the intention of the plan to promote the Valley as the location for one or more *self-sustaining* (emphasis added) satellite communities which will be complementary to the existing metropolitan area."
- The following information from the USGS Geologic Map of Colorado illustrates the potential of the deposit as a commercial sand and gravel deposit. Also shown is the El Paso County Resource Evaluation, Map 3:

El Paso County Aggregate Resource Evaluation

Map 3



(Residual Version)

FLOODPLAIN DEPOSIT: Sand and gravel with minor amounts of silt and clay deposited by water along present stream courses.

VALLEY FILL: Sand and gravel with silt and clay deposited by water in one or a series of stream valleys.

STREAM TERRACE DEPOSIT: Older stream deposits containing san gravel, silt, and clay preserved on benches or broad flat to sloping areas adjacent to streams.

MESA GRAVEL: Sand and gravel with silt and clay deposited by older streams and slope wash on upland mesas which slope gently from the mountains.

UPLAND DEPOSITS: Sand, gravel with silt and clay; remnants of older streams deposited on topographic highs or bench like features.

ALLUVIAL FAN DEPOSITS: Gently sloping fan shaped deposits of sand, gravel, silt, and clay. Deposited by a stream from a steep, narrow valley into a broad, relatively flat plain or valley.

EOLIAN DEPOSITS: Wind blown sands.

GRANITE: Granite and granitic type rocks such as Quartz, monzonite, and Grandiorite underlying mountainous areas.

FINE GRAINED GRANITE: Granite and granitic type rocks with small crystal structure generally dense and requiring blasting for excavation.

DECOMPOSED GRANITE: Weathered granite and granitic type roc generally easily excavated.

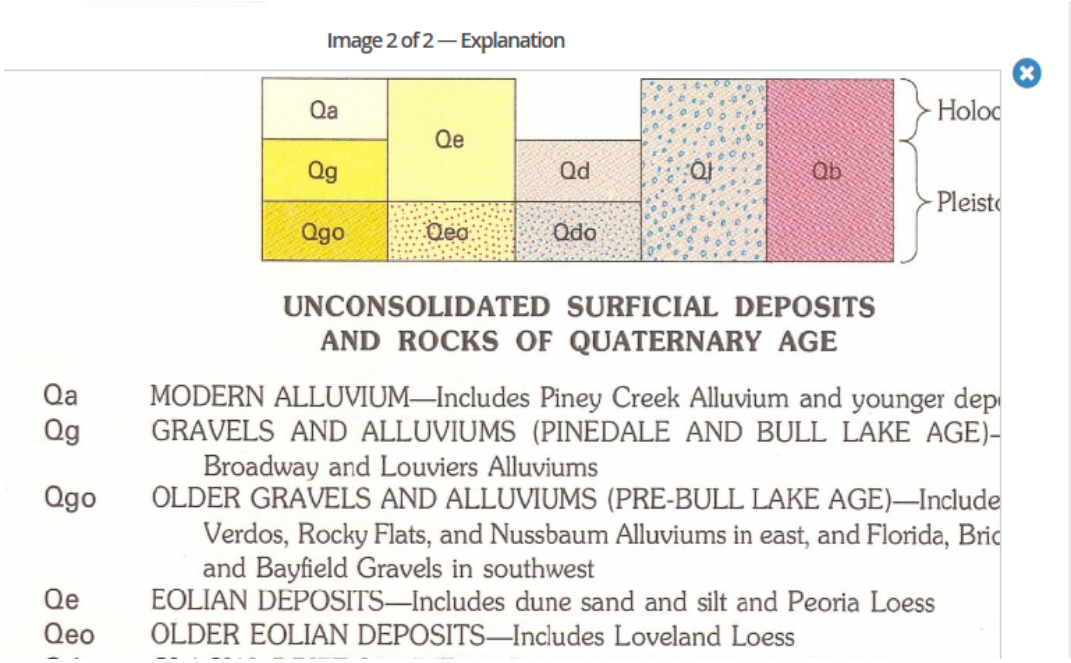
LIMESTONE: Sedimentary rock consisting mainly of calcium carbonate, generally dense and quarried for use as aggregate.

CONGLOMERATE: Course grained sedimentary rock containing Arkosic sand, pebbles and cobble. Commonly forms a cap over underlying rocks.

COAL: 0-150 feet of overburden, minimum coal thickness 4 feet. Includes Dawson and Laramie.

COAL: 0-200 feet of overburden,thickness unknown. Laramie coal

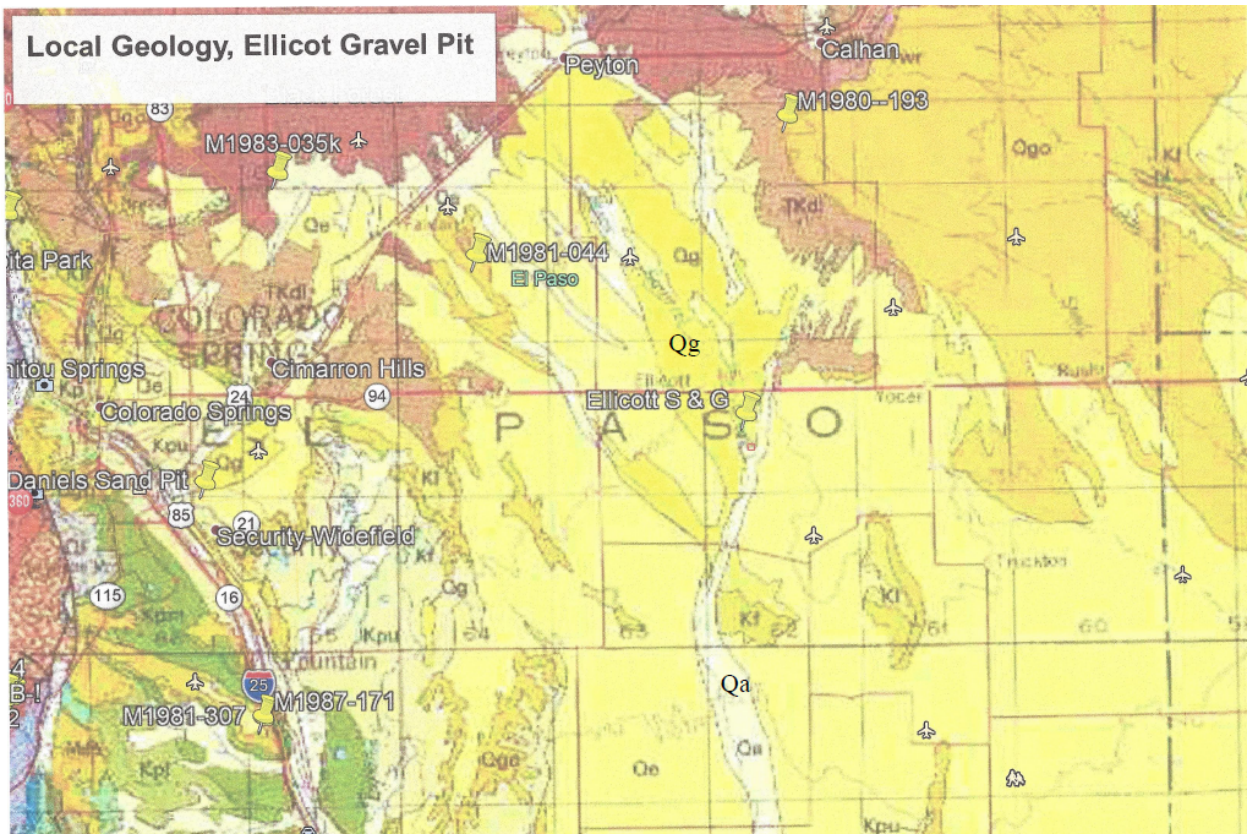
Geological Survey Map



Geology of the Area Based on the USGS Survey Map:

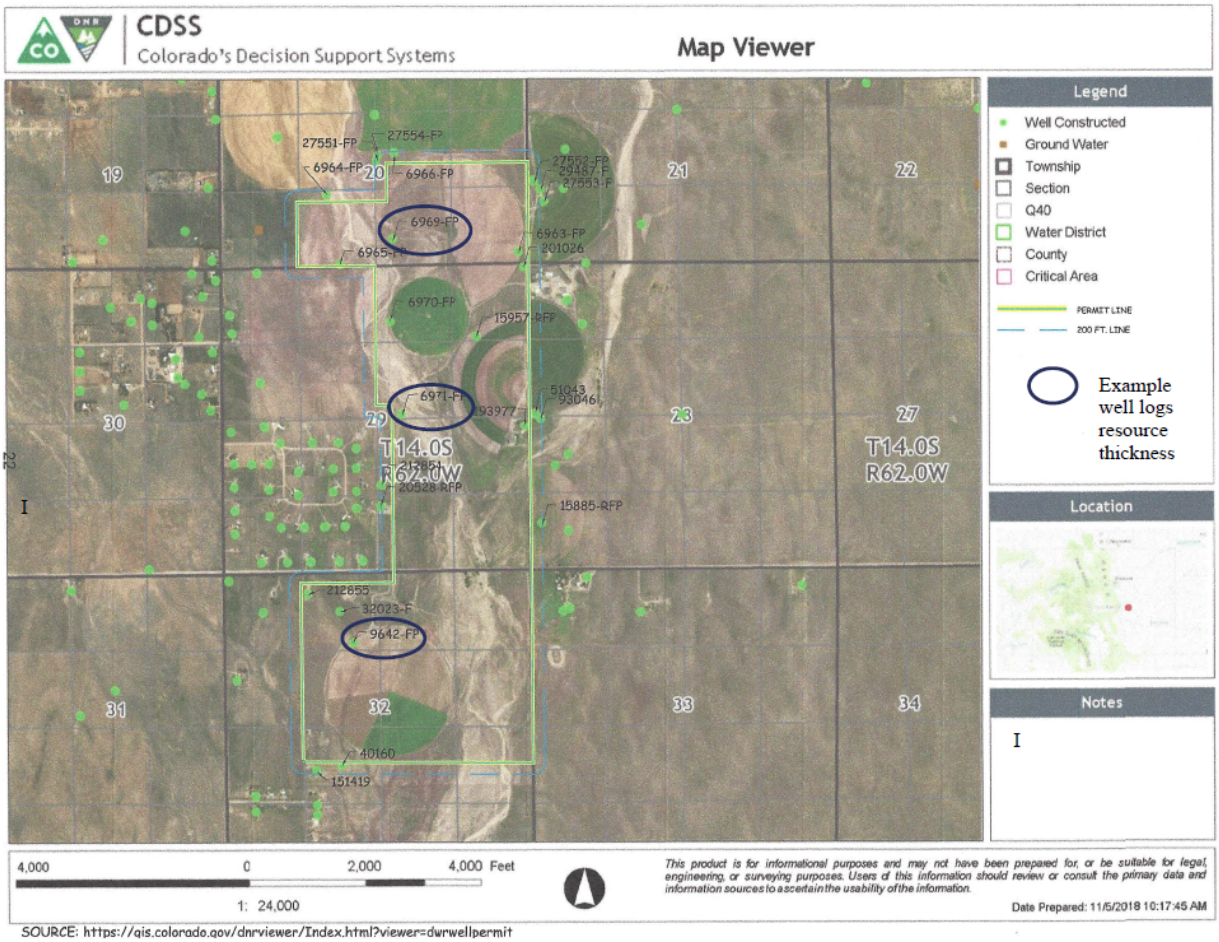
The following geogolic map illustates the extent of the Qg and Qa deposits:

- Qg is Gravels and Alluviums
- Qa is Modern Alluvium



- "Commercial mineral deposit' means a natural deposit of … sand, gravel…for which extraction by an extractor is or will be commercially feasible…"
  Based on the above statutory definition and the depth of resource available, we believe the deposit is a commercial deposit.
- The second part of the definition requires, "…and regarding which it can be demonstrated by geologic, mineralogic, or other scientific data that such deposit has <u>significant economic</u> or strategic <u>value to the area</u>, state ..."
  - We have underlined the portion of the statute to which the resource's significance applies. It is understand that a significant source of sand and gravel is becoming less available (see below) as the current doposits are nearing either the limits of the resource, limited by surrounding development, or polotical resistance to the permitting of new sources of construction aggregate.
  - According to the Colorado Division of Reclamation, Mining and Safety website, El Paso County has 16 permitted sand and gravel operations. Of that number, six are of less than 10 acres in size and may not be a significant source of sand. One operation is essentially a clay operation for providing other than sand and gravel. The Daniels Sand Pit #2 is responsible for 75% of the sand sold locally. (Page 49, El Paso County Master Plan for Mineral Extraction, Feb 8, 1996) However, it appears the Daniels Sand Pit #2 is nearing completion of mining given it has almost reached the limits of lands

available for mining "land locked". (*The Schubert Ranch sand resource has the potential to replace a significant portion of the sand resource, upon closure of the Daniels Sand Pit #2.*) Another site is also "land locked. Two sites are greater than 34 miles from Colorado Springs. One site is in final reclamation.



SOURCE: https://gis.colorado.gov/dnrviewer/Index.html?viewer=dwrwellpermit