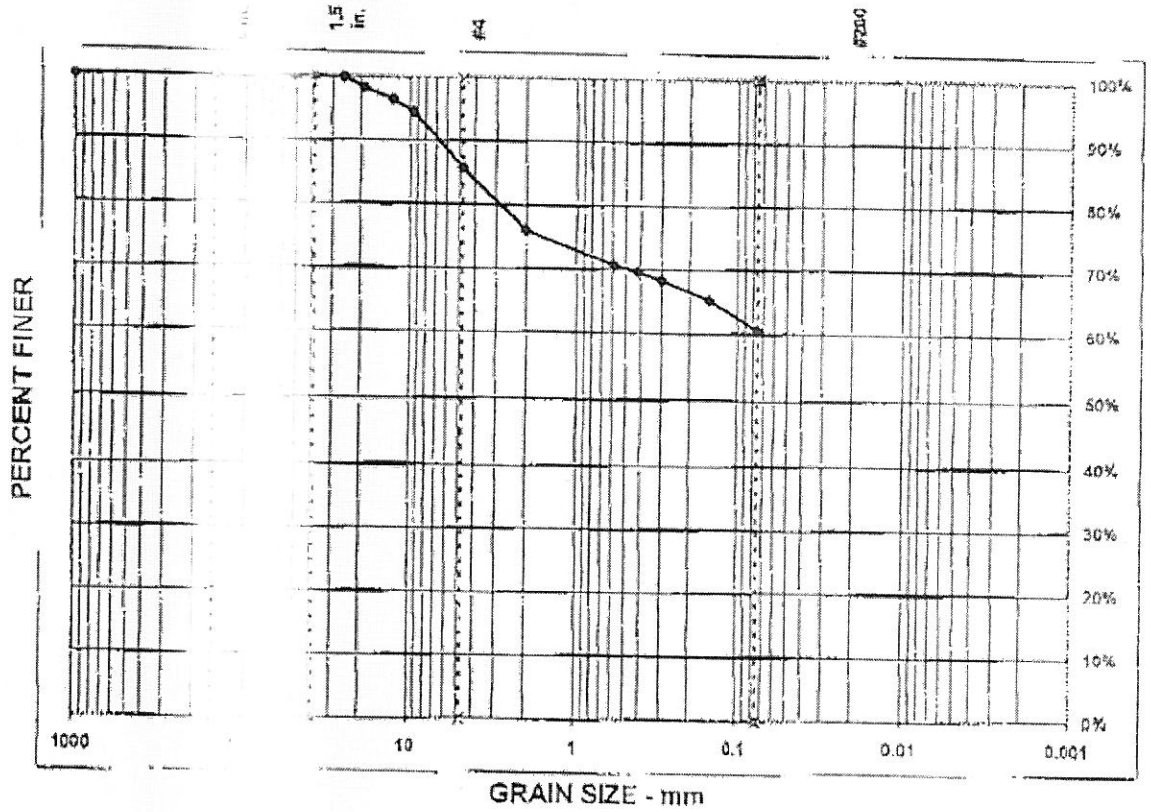
TB-246

March 16, 2005	Well No. 4 (T-4661-Expl) City of Alamogordo -- Lithologic Log
	0-40' augered and logged dry, 40-1110' cuttings logged wet, from sample port, reverse mud
depth, ft	description
0-20	silt and vf sand: 95% eolian silt and vf sand, calcareous. 5% vc sand, lithic fragments
20-40	very fine sand: 90% vf sand calcareous. 10% c-vc lithic fragments
40-50	very fine to fine sand: 95% vf-f sand slightly calcareous. 5% gravel 2-3 mm up to 10 mm mostly black ls
50-60	fine to coarse sand: 40% f. sand rounded, 40% c. sand subrounded-rounded. 20% 3-12 mm lithic fragments, subrounded to subangular, grey and black ls, dolomite, black mudstone.
60-70	no sample
70-80	no sample
80-100	very fine- fine sand: 80% vf-f sand subrounded to rounded mostly qtz and feldspar. 20% clay
100-110	very fine to medium sand: 70% vf-m sand subangular to rounded. 20% clay. 10% gravel 4-28 mm subangular-subrounded, volcanics mudstone, ls, and dolomite.
110-120	sandy gravel: 80% gravel up to 22 mm, subrounded-angular, volcanics mudstone, ls, and dolomite. 20% slightly clayey vf-f sand, subrounded-rounded
120-130	sandy clay: 100% vf-f sand rounded
130-140	sandy clay: 95% f-m sand rounded to subrounded. 5% gravel subangular1-3 mm, dolomite, volcanic, mudstone.
140-150	gravel: 100% gravel up to 10 mm, subrounded to angular, volcanic, mudstone, ss, qtz, minor dolomite
150-160	gravel: 90% gravel up to 10 mm, subrounded to angular, volcanic, mudstone, ss, qtz, minor dolomite. 10% clayey vf-m sand, rounded-subrounded
160-170	sandy clay: 90% sandy clay with vf-f sand, rounded to subrounded. 10% gravel up to 14 mm, subangular, volcanics, mudstone, sandstone, minor dolomite
170-190	no sample
190-200	sandy clay: 95% sandy clay with vf-f sand, well-rounded to subrounded, qtz, feldspar. 5% gravel 1-4 mm subangular to subrounded, balck and green volcanics, ss, and mudstone.

March 16, 2005	Well No. 4 (T-4661-Expl) City of Alamogordo -- Lithologic Log
	0-40' augered and logged dry, 40-1110' cuttings logged wet, from sample port, reverse mud
depth, ft	description
200-220	sandy clay: 95% sandy clay with vf-f sand, well-rounded to subrounded, qtz, feldspar. 5% gravel 1-4 mm subangular to subrounded, balck and green volcanics, ss, and mudstone. Also, minor gypsum in clay
220-230	clayey sand: 85% clayey sand, with vf-f sand rounded to subangular mostly qtz and feldspar. 15% gravel 2-6 mm subrounded to rounded dolomite, mudstone, volcanics.
230-250	clayey sand: 85% clayey sand, with vf-f sand rounded to subangular mostly qtz and feldspar. 15% gravel 2-22 mm rounded to angular ss, ls, mudstone, volcanics.
250-260	sandy clay: 95% sandy clay, vf sand mostly qtz and feldspar. 5% gravel 1-4 mm subangular mixed lithology.
260-360	sandy clay: 95% vf sand, mostly qtz and feldspar. 5% cobbles, pebbles, and coarse sand.
360-380	gravels: 70%gravels basalt, sandstone, limestone. 20% coarse sands, basalt, sandstone, limestone. 10% m-f sandy clay
380-400	sandy clays: 85% sandy clays with vf sand mostly qtz and feldspar. 15% gravel 1-15 mm subrounded to subangular
400-420	sandy gravel; 60% gravel mix of basalt, ss, ls. 30% coarse sands. 10% m-f sands
420-460	clay: 100% tan to gray clay
460-510	sandy clay: 90% tan-reddish sandy clay with vf sand. 10% mix of cobble and pebble gravel.
510-560	clay: 100% reddish tan clay
560-570	clayey gravel: 100% clayey gravelly cobbles
570-580	sandy clay: 90% reddish-tan sandy clay w/ vf-f sand. 10% gravel
580-600	interbedded gravel and clays: 50% red clay. 50% gravel
600-680	sandy silty clay: 90% sandy silty clay reddish tan w/ vf-f sand. 10% c. sand and gravel
680-720	sandy silty clay: 100% sandy silty clay reddish tan w/ vf-f sand
720-770	silty clay: 90% white and grey clay. 10% silt and sand
770-780	clay: 100% tan clay
780-790	clay: 100% black clay

March 16, 2005	Well No. 4 (T-4661-Expl) City of Alamogordo -- Lithologic Log
	0-40' augered and logged dry, 40-1110' cuttings logged wet, from sample port, reverse mud
depth, ft	description
790-800	gravelly clay: ~70% tan clay, ~30% gravel angular to rounded up to 3 cm, siltstone, ss, shale.
800-850	clay: 100% tan clay with a few minor gravel interbeds from 800-820
850-860	gravelly clay: ~70% tan clay, ~30% gravel angular to rounded up to 3 cm, siltstone, ss, shale.
860-870	silty clay: 100% tan clay and silt
870-880	sandy clay: tan clay with tan silt and sand.
880-910	gravelly clay: ~70% tan clay, ~30% gravel angular to rounded up to 3 cm, siltstone, ss, shale.
910-920	sandy clay: 90% tan clay. 10% c. sand mixed lithology subrounded
920-930	clay: 100% clay w/ very few chips
930-990	clayey gravel: tan clay. gravel up to 4 cm, white, grey, black, brown, subrounded
990-1020	gravelly clay: ~70% tan clay, ~30% gravel angular to rounded up to 3 cm, siltstone, ss, shale.
1020-1030	gravelly sandy clayey silt: 40% brown silt, 30% tan clay, 20% f-c sand subrounded, 10% gravel up to 1 cm
1030-1050	sandy silt: 85% tan silt. 15%f-c sand mixed lithology rounded
1050-1110	gravelly clay: 65% tan clay, 25% gravel up to 4 cm, black, grey, subrounded. 10% sand

GRAIN SIZE DISTRIBUTION GRAPH



TEST SUMMARY

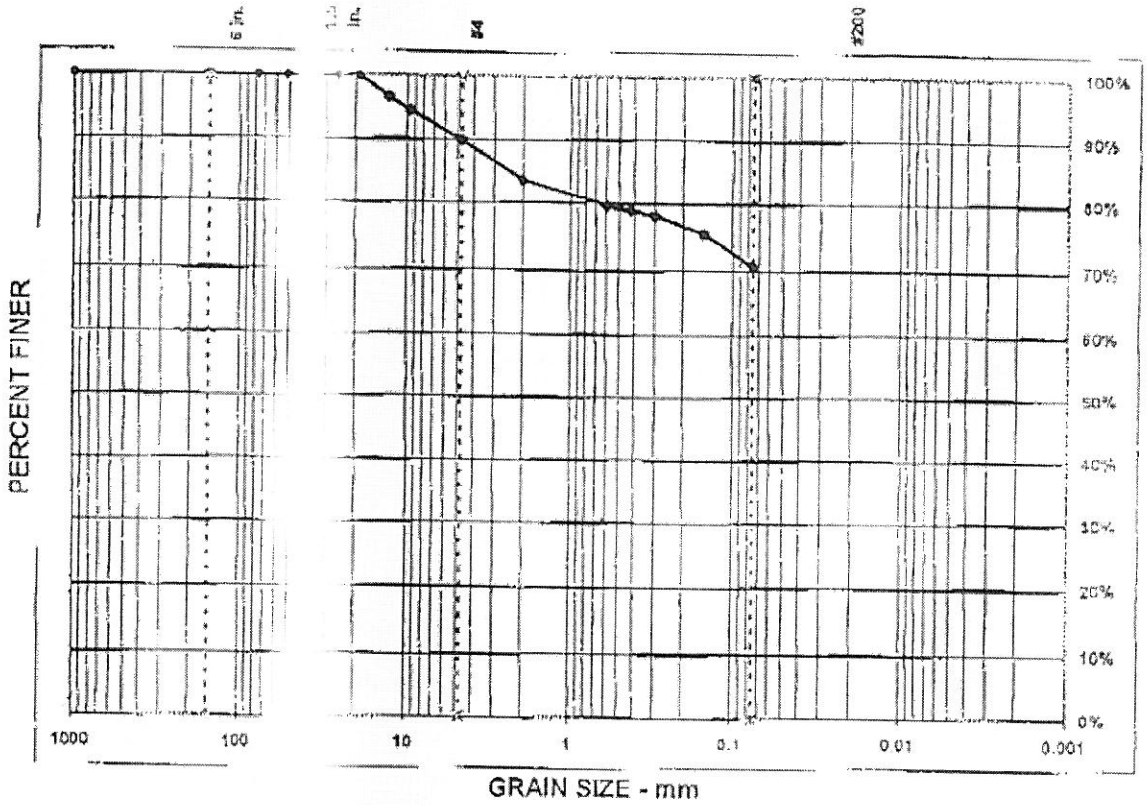
	1 1/2"	3/4"	3/8"	#4	#10	#40	#100	#200
% Passing (C	100%	98%	95%	86%	76%	70%	65%	80.5%
S								

%	= 14%	D_{60} = 4.5	D_{15} =
	= 25%	D_{30} =	D_{10} =
% Sil	= 61%	D_{50} =	C_U =
		D_{30} =	C_C =

Sa : 4/4/05
P o.: 68051030.0001
Pro : Snake Tank Test Wells
R : 4/6/05
Sampl : Well 4, Composite at 200-400'
Li : Plasticity Index:
USCS Cla :
Material D :
Re By: Nancy Reid
Nancy Reid

TERRACON
1630 Hickory Loop, Suite H
Las Cruces, NM 88005
(505) 527-1700

RAIN SIZE DISTRIBUTION GRAPH



TEST SUMMARY

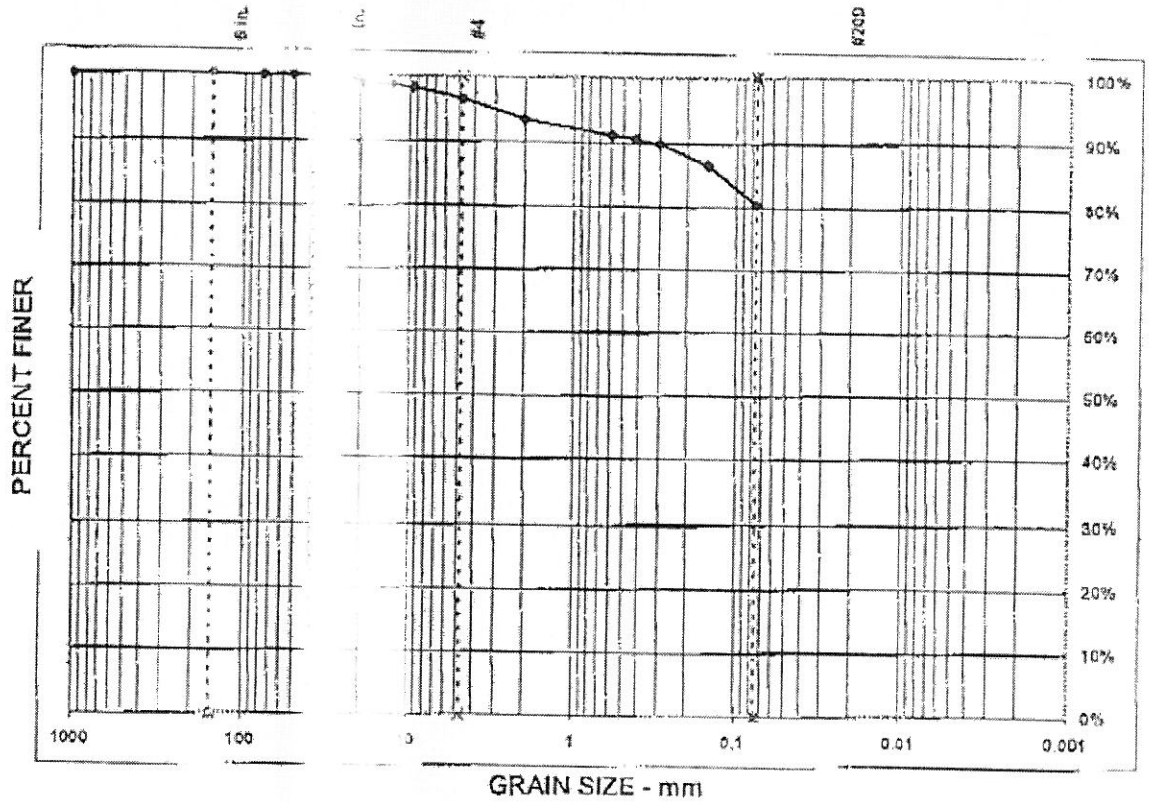
Sieve	1 1/2"	3/4"	3/8"	#4	#10	#40	#100	#200
% Passing (Cumula	100%	100%	95%	90%	84%	79%	75%	70.8%
Specifica								

% GRAVE	10%	D_{85} = 2.4	D_{15} =
% SA	19%	D_{60} =	D_{10} =
% SILT & CL	71%	D_{50} =	C_U =
		D_{30} =	C_C =

Sample D /4/05
Project 3051030.0001
Project Na nake Tank Test Wells
Report D /5/05
Sample Loca Well 4, Composite at 400-600'
Liquid Li Plasticity Index:
USCS Classifica
Material Descript
Reviewed Nancy Reid
ncy Reid

TERRACON
1630 Hickory Loop, Suite H
Las Cruces, NM 88005
(505) 527-1700

G AIN SIZE DISTRIBUTION GRAPH



TEST SUMMARY

Sieve Si	3/4"	3/8"	#4	#10	#40	#100	#200
% Passing (Cumulativ	99%	98%	97%	93%	91%	87%	80.5%
Specificatio							

% GRAVEL

% SAND

% SILT & CLAY

D_{85} = 0.1 D_{15} =

D_{60} = D_{10} =

D_{50} = C_U =

D_{30} = C_C =

Sample Dat

Project No 030.0001

Project Nam Tank Test Wells

Report Dat

Sample Locatio , Composite at 600-750'

Liquid Lim Plasticity Index:

USCS Classificatio

Material Descriptio

Reviewed B Reid

TERRACON
1830 Hickory Loop, Suite H
Las Cruces, NM 88005
(505) 527-1700

Received Time 1:04PM

T-4661
TRN-311230

File Number: T-4661

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

1. OWNER OF WELL

Name: City of Alamogordo — Work Phone: 505 439 4240
Contact: Mr. Pat McCourt — Home Phone: _____
Address: 1376 E Ninth
City: Alamogordo — State: NM Zip: 88310

2. LOCATION OF WELL (A, B, C, or D required, E or F if known)

A. SE 1/4 SW 1/4 SE 1/4 Section: 35 Township: 12 S Range: 9E N.M.P.M. in _____ County.

B. X = _____ feet, Y = _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.
U.S.G.S. Quad Map _____

C. Latitude: ____d ____m ____s Longitude: ____d ____m ____s

D. East _____ (m), North _____ (m), UTM Zone 13, NAD __ (27 or 83)

E. Tract No. ____, Map No. ____ of the _____ Hydrographic Survey

F. Lot No. ____, Block No. ____ of Unit/Tract _____ of the _____ Subdivision recorded in _____ County.

G. Other: _____

H. Give State Engineer File Number if existing well: _____

I. On land owned by (required): Bureau of Land Management

3. DRILLING CONTRACTOR

License Number: WD-331
Name: Stewart Brothers Drilling — Work Phone: 505-287-2986
Agent: Randy Stewart — Home Phone: _____
Mailing Address: P.O. Box 2067
306 Airport Rd.
City: Milan — State: NM Zip: 87021

4. DRILLING RECORD

Drilling began: 3/10/05 ; Completed: 3/30/05 ; Type tools: Mud Rotary
Size of hole: 12 1/4 in.; Total depth of well: 1010 ft.;
Completed well is: Shallow (shallow, artesian);
Depth to water upon completion of well: 350 ft.

File Number: T-4661 — Trn Number: 311200
Form: wr-20

July 12, 2005

35.12S.09E
T-4661

T-4661
TRN-311230

File Number: T-4661

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

5. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	To	Thickness in feet	Description of water-bearing formation	Estimated Yield (GPM)
690	1010	320	Clay with Sand and Gravel	120

6. RECORD OF CASING

Diameter (inches)	Pounds per ft.	Threads per in.	Depth in Feet Top	Bottom	Length (feet)	Type of Shoe	Perforations From	To
14	.375		0	20	20	None		
6.625	.280		0	470	470	Blank		
6.625	.432		470	480	10	Blank		
6.625			480	980	500	Screen		
6.625	.280		980	1000	20	Sump		

7. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	To	Hole Diameter	Sacks of mud	Cubic Feet of Cement	Method of Placement
0	20	17.5		10	Tremi

8. PLUGGING RECORD

Plugging Contractor: _____
Address: _____
Plugging Method: _____
Date Well Plugged: _____

Plugging approved by: _____
State Engineer Representative

No.	Depth in Feet Top	Bottom	Cubic Feetof Cement
1			
2			
3			
4			
5			

File Number: T-4661

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

9. LOG OF HOLE

Depth in Feet From	To	Thickness in feet	Color and Type of Material Encountered
0	210	210	Sandy, Gravels, Clay
210	280	70	Ashy clay, w/sand and gravels
280	320	40	Lithic Gravels
320	410	90	Clay w/sand Lithic Gravels
410	440	30	Cement
440	690	250	Clay w/ Sand lithic Gravels
690	1010	320	Limestone, Dolomite, Sandstone, Gravel Shale

T-4661
TRN-311230

File Number: T-4661

NEW MEXICO OFFICE OF THE STATE ENGINEER
WELL RECORD

10. ADDITIONAL STATEMENTS OR EXPLANATIONS:
Test Well drilled for the City of Alamogordo.

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.

Driller

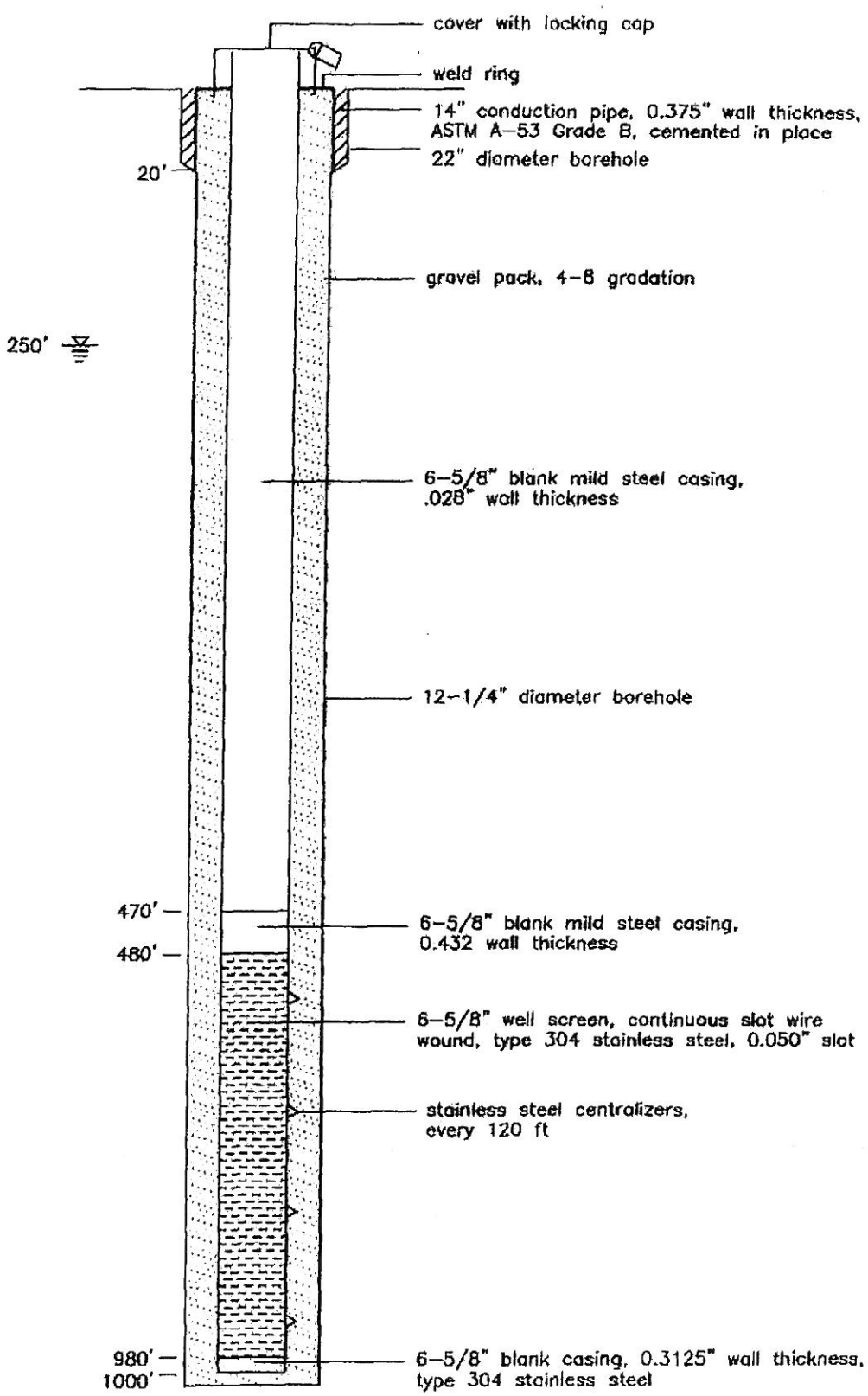
4/3/05
(mm/dd/year)

FOR STATE ENGINEER USE ONLY

Quad ____; FWL ____; FSL ____; Use _____; Location No. _____

July 12, 2005

35.12S.09E
T-4661



not to scale

Figure 2. Diagram showing recommended well construction, Small Diameter Test Wells

John R. D Antonio, Jr., P.E.
State Engineer

Las Cruces Office
1680 HICKORY LOOP,
SUITE J
LAS CRUCES, NM 88005

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER

Trn Nbr: 311230
File Nbr: T 04661
Well File Nbr: T 04661

Jul. 12, 2005

PAT MCCOURT
CITY OF ALAMOGORDO
1376 E. NINTH STREET
ALAMOGORDO, NM 88310

Greetings:

Enclosed is your copy of the well record for the above numbered permit, which has been accepted for filing.

Sincerely,

Sarah Rodriguez
(505)524-6161

Enclosure
cc: Santa Fe Office

wellrrcv