Gandy Corporation
Proposed SWD Well – Albacore 25 COM #1

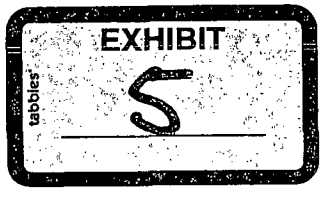
Hydrology
The Ogallala formation is the principal source of groundwater in the vicinity of this proposed SWD site. There are no useable quality drinking water zones below the Wolfcamp formation.

Information from the NM WAIDS website shows a number of samples from Section 25, T16S, R35E. The Ogallala is 42 to 84 deep in this area. The closest Ogallala water samples were taken from a well located in Section 26. Three samples taken in 1979, 1984 and 1990 show slightly increasing chloride concentrations of 50, 55 and 65 mg/l respectively during that 11-year time frame. A fresh water well on the Eidson Ranch, within ½ mile of the proposed disposal site, was sampled and analyzed on 12-15-2008. The chloride content was 104 mg/l and TDS 553 mg/l. There is no apparent contamination of the freshwater in the area.

Water samples/analysis from Devonian, Permo-Penn and Abo formation produced waters are included with this application. These are representative of the type waters that will be transported to this commercial facility for disposal. None of the waters exhibit scaling tendencies for any problematic minerals other than calcite ($CaCO_3$), which is acid soluble.

The NM WAIDS website was used to mix various representative water samples and determine the scaling tendencies using the Stiff-Davis method. Three mixes were evaluated: Devonian/Abo, Devonian/Permo-Penn and Permo-Penn/Abo; all at a volume ratio of 1:1. All of the water mixing calculations shows no problematic scaling tendencies from the injectant into the Albacore 25 SWD well. The slight scaling tendency for calcite can be eradicated with periodic acid treatments.

Based on the available geologic and engineering data we find no evidence of open faults or any other hydrologic connection between the intended disposal zone and any underground sources of drinking water.



New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 16S Range: 35E Sections: 25

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○ Non-Domestic ○ Domestic ◉ All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

* DEPTH TO FRESH WATER

AVERAGE DEPTH OF WATER REPORT 12/05/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
L	16S	35E	25				6	42	84	54

Record Count: 6

NM WAIDS

* OGALLALA QUALITY *

DATA MAPS HOME SCALE COR

Water Samples for Sect 26 Township 16 South Range 35 East Formation OGALLALA

Instructions:

The number represents the number of water samples of certain well. Click the number if you want to download the data.

3 records are available.

	# of samples	S	T	R	Formation	Date	Chlorides (mg/L)	Location (qtr/qtr)	DEPTH
☐	1 sample	26	16S	35E	OGALLALA	10/4/1979	50	16S.35E.26.21111	76 FT
☐	1 sample	26	16S	35E	OGALLALA	9/19/1984	55	16S.35E.26.21111	76
☐	1 sample	26	16S	35E	OGALLALA	7/17/1990	65	16S.35E.26.21111	76

☐ SELECT/DESELECT ALL

Submit

New Mexico Tech

FRESH WATER WELL SAMPLE

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
GANDY CORPORATION
ATTN: DONNY COLLINS
PO BOX 2140
LOVINGTON, NM 88260
FAX TO: (575) 396-0797

Receiving Date: 12/15/08
Reporting Date: 12/16/08
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: NOT GIVEN
Sample Type: WATER
Sample Condition: INTACT
Sample Received By: ML
Analyzed By: TR

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/15/08	12/15/08	12/16/08	12/16/08	12/15/08	12/15/08
H16516-1	BRINE WATER Wasserfrac	104,000	1,080	5,130	3,440	370,000	90
→ H16516-2	FRESH WATER	71	101	15.6	2.3	850	240
	Windmill - Close proximity to Hillcock well.						
Quality Control		NR	48.1	51.0	2.88	1,421	NR
True Value QC		NR	50.0	50.0	3.00	1,413	NR
% Recovery		NR	96.2	102	95.9	101	NR
Relative Percent Difference		NR	<0.1	<0.1	3.5	1.0	NR
METHODS:			SM3500-Ca-D	SM3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl (mg/L)	SO4 (mg/L)	CO3 (mg/L)	HCO3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/16/08	12/16/08	12/15/08	12/15/08	12/16/08	12/15/08
H16516-1	BRINE WATER	176,000	6,870	0	110	6.35	309,000
H16516-2	FRESH WATER	104	84.6	0	293	7.55	553
Quality Control		490	43.6	NR	1000	7.04	NR
True Value QC		500	40.0	NR	1000	7.00	NR
% Recovery		98.0	109	NR	100	101	NR
Relative Percent Difference		2.0	0.7	NR	<0.1	<0.1	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

12-17-08
Date