BW - ___006____

INTERNAL POLICY

New Mexico Energy, Minerals
& Natural Resources Department
Oil Conservation Division

Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy for:

I & W Inc. Eugenie Brine Extraction Facility (BW-006)
SW/4 SW/4 Sec. 17, T 22 S, R 27 E
Eddy County

January 30, 2009

OCD District 2 (Artesia)
OCD Environmental Bureau (Santa Fe)

Introduction:

The Oil Conservation Division hereby establishes a ½ mile Area of Review (AOR) for all APDs surrounding the existing brine wells at the I & W, Inc. facility (BW-006). The facility consists of two brine wells, the Eugenie Well No. 1 & 2. The brine wells are located on I & W Inc. property in Carlsbad just south of the intersection of U.S. Hwy. 285 and the Pecos Highway south (see Figure 1).

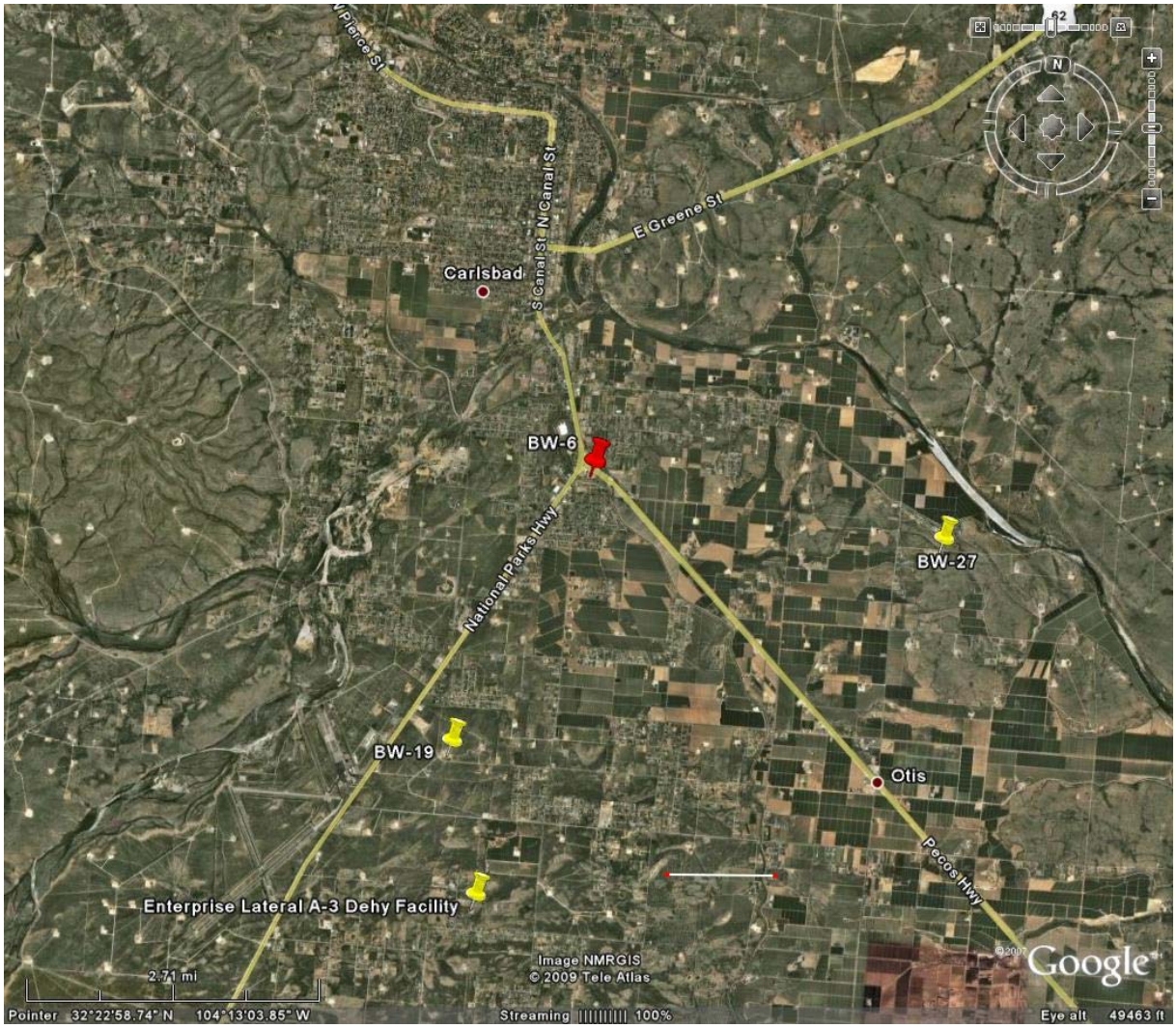


Figure 1

Brine Operation:
There was a two-brine well extraction system in operation, until Well No. 2 was plugged and abandoned in 1999. Well No. 1 was plugged and abandoned on 10/31/2008 (see Table 1 below).

API WellNo	Comments	Well Name (Ongard)	Well#	Legal (Ongard)	N/S	E/W	Well Name (Non Ongard)	WellNo	S-T-R	County	Well Status
30-015-22574	[N 32.38813 W 104.21817]	EUGENIE	001	M 17 22S 27E	995 S	641 W	Eugenie	001	17-22S-27E	Eddy	10/31/2008
30-015-23031		EUGENIE	002	M 17 22S 27E	1288 S	497 W	Eugenie	002	17-22S-27E	Eddy	1999

Table 1

Well Construction:
Well No. 1 was constructed with 9 5/8" casing set to 350 ft. bgl. The well was drilled to 663 ft. (see Table 2) and 7" casing was set at 456 ft. bgl. Tubing was set at a depth of about 601 ft. bgl before plug and abandonment.

Well No. 2 was constructed with 5 ½" casing set at 285 ft. bgl. Tubing consisted of 2 7/8" tubing, which was perfed at 335 ft. bgl.

P.S.I.& S.
BOX 1591
ODESSA,TEXAS 79760

JUNE 30, 1975

SALT & I

0 to 46 ----------	TOP SOIL WITH GRAVEL
46 to 58 ----------	SAND & GRAVEL
58 to 62 ----------	LIME
62 to 65 ----------	RED BED
65 to 76 ----------	RED SAND
76 to 107 ----------	GRAVEL
107 to 163 ----------	BROWN CLAY W/GRAVEL & SAND
163 to 170 ----------	RED BED
170 to 178 ----------	LIME VERY HARD
178 to 225 ----------	RED BED
225 to 237 ----------	ANHYDRITE & RED BED
237 to 252 ----------	LIME & ANHYDRITE W/SOME GYP.
252 to 268 ----------	RED BED
268 to 285 ----------	LIME W/GYP. STRINGERS
285 to 305 ----------	GYP. W/SOME RED BED
305 to 320 ----------	GYP. & ANHYDRITE
320 to 328 ----------	RED BED
328 to 360 ----------	ANHYDRITE W/LIME & SAND
360 to 410 ----------	RED TOP & ANHYDRITE
410 to 430 ----------	ANHYDRITE W/SOME LIME
430 to 437 ----------	GRAY LIME (HARD) & ANHYDRITE
437 to 445 ----------	ANHYDRITE
445 to 496 ----------	ANHYDRITE & GRAY LIME
496 to 555 ----------	SALT
555 to 567 ----------	SALT & SOME LIME
567 to 576 ----------	SALT & BLUE SHALE VERY LITTLE
576 to 592 ----------	SALT
592 to 663 ----------	ANHYDRITE

Table 2

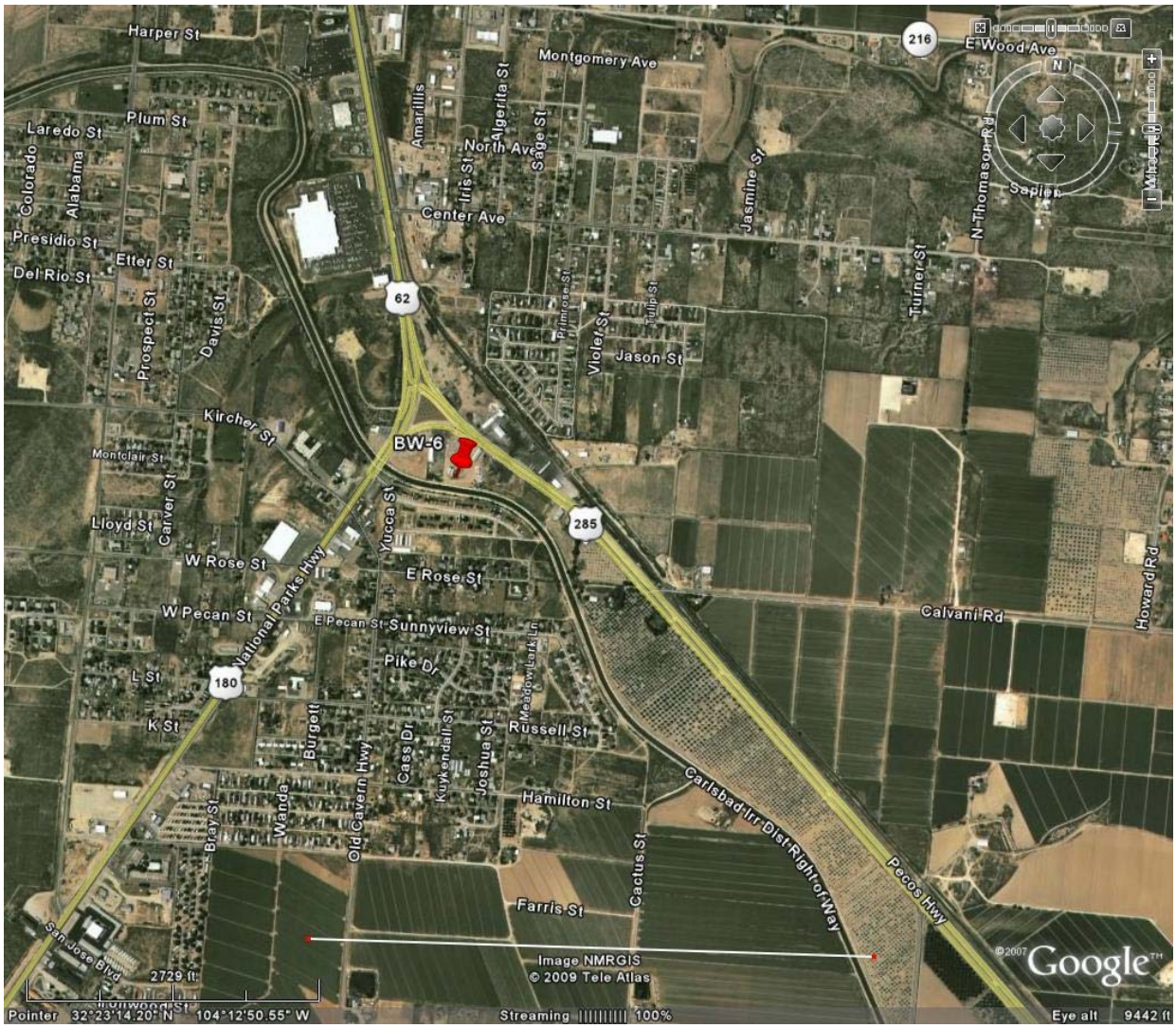


Figure 2

Owner/Operator Actions:

I & W Inc. voluntarily and permanently shut-in the brine well on July 22, 2008. The well was later plugged and abandoned on October 31, 2008. These actions were undertaken after the Jims Water Service (BW-005) brine well collapse on July 16, 2008 as a precautionary measure by the owner/operator. Due to its shallow depth and location in the City of Carlsbad, the brine well cavern is in close proximity to many infrastructure features, e.g., roads, railroads; irrigation canal, etc. (see Figures 2 & 3).

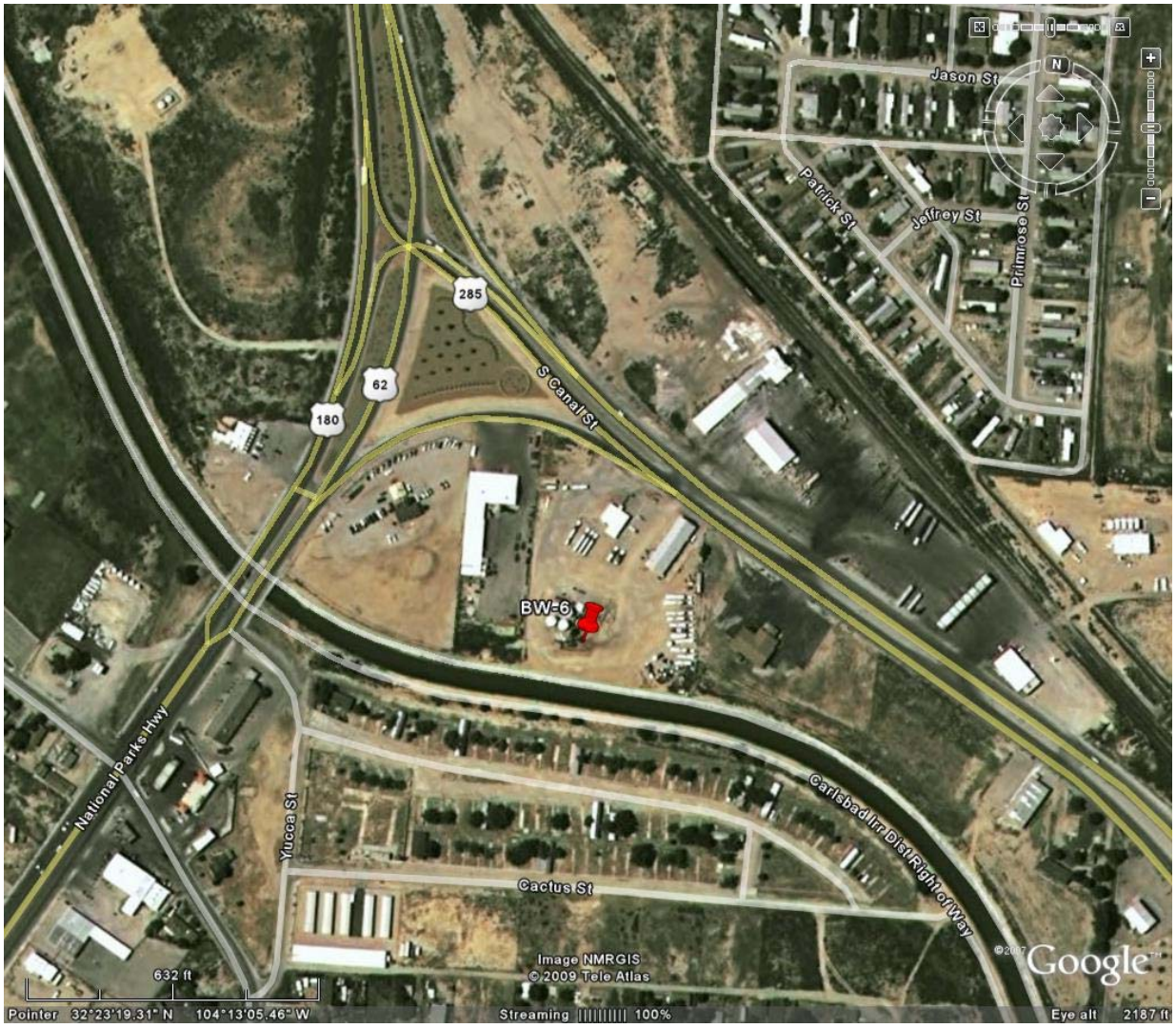


Figure 3

Internal APD AOR (1/2 mile) Policy:

More recently, the Loco Hills Brine Well No. 1 (BW-21) just north of Loco Hills, New Mexico collapsed in November of 2008. Brine Well No. 1 was plugged and abandoned on 7/7/2008. The collapse may have been caused by the drilling of a well that took on water at a similar depth interval and suspected by the OCD of being hydrogeologically connected with the salt cavern at Brine Well No. 1. Consequently, the collapse at Brine Well No. 1 may have been caused by the dewatering and/or loss of pressure in the cavern, which resulted in the destabilization of the ground around Brine Well No. 1. To avoid this in the future from occurring at this facility (BW-6), the OCD has developed an Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy (see Figure 4).

Map by: Jim Griswold, NMOCD

Figure 4

Eddy County Emergency Response Plan:

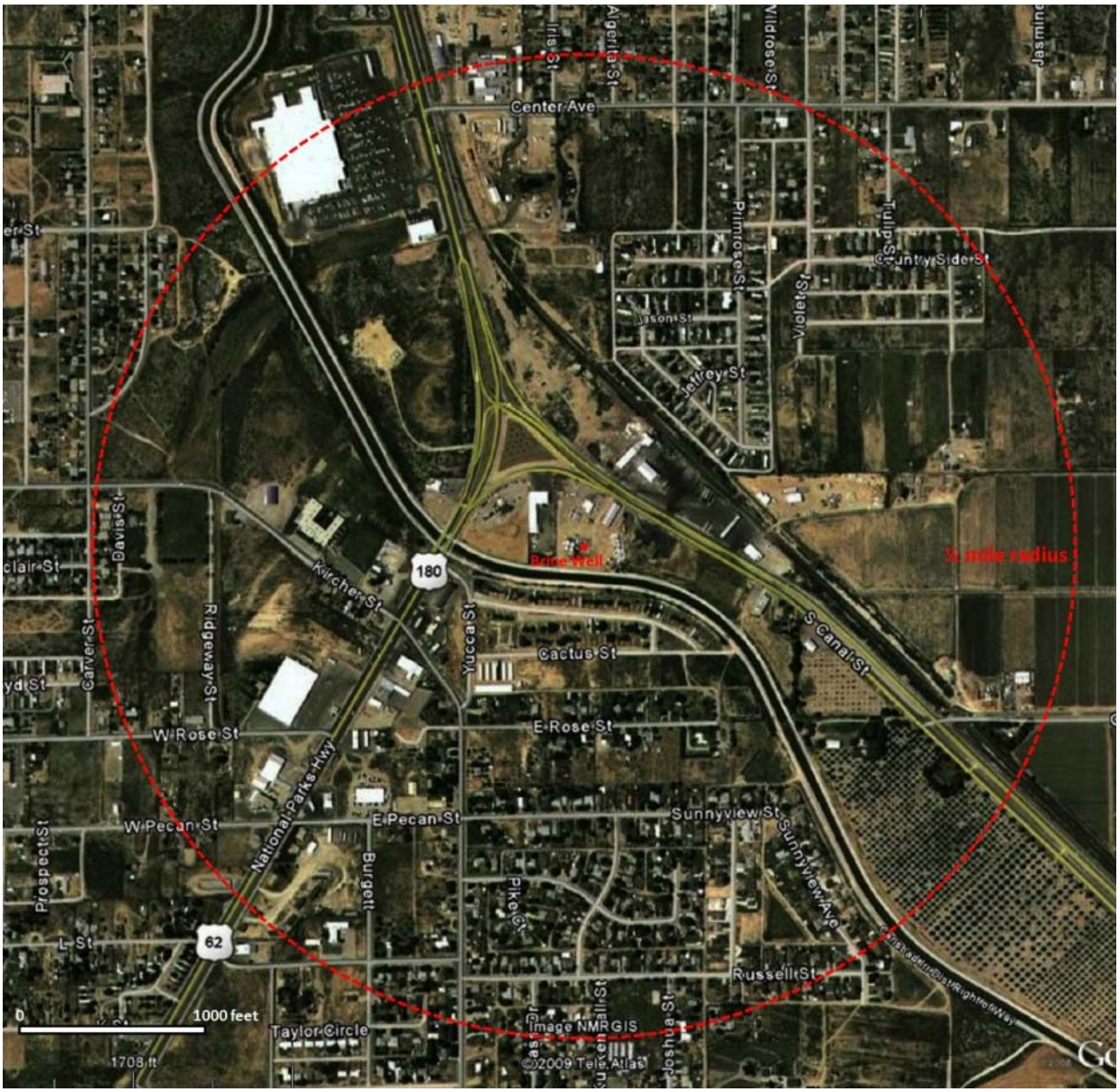
Ground water most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 45 feet with a TDS of approximately 200 mg/L. The brine well discharge permit addresses well construction, operation, monitoring of the well, associated surface facilities, and provides a contingency plan in the event of accidental spills, leaks and other accidental discharges in order to protect fresh water. However, the discharge permit does not address a catastrophic collapse scenario. The OCD is currently working with I & W Inc. to complete a Contingency Plan in addition to working with the Eddy County Hazmat, State Police and the Local Emergency Planning Committee (LEPC- Fire Marshal). OCD will require I & W, Inc. to submit a copy of its final Contingency Plan to the Eddy County Hazmat responders. In addition, the OCD will recommend to Eddy County that it's Emergency Plan include a scenario for a

potential brine well collapse scenario from this facility in the interest of public health and safety.

Map by: Jim Griswold, NMOCD

Figure 5

Internal Application Permit to Drill (APD) Area-of-Review (1/2 Mile) Staff Policy: OCD District 2 shall contact the Environmental Bureau whenever it receives any APDs located within a ½ mile Area-of-Review (AOR) from the brine wells at this facility (see Figures 4 - 6). District Office 2 staff and/or the District Supervisor shall make the preliminary determination and internally discuss the determination for approval and/or denial jointly with the Environmental Bureau Staff and/or Bureau Chief to reach consensus on a final determination.



Map by: Jim Griswold, NMOCD

Figure 6