



BENZENE POLISHING USING ISOC TECHNOLOGY IN CLAY/SILT DEPOSITS

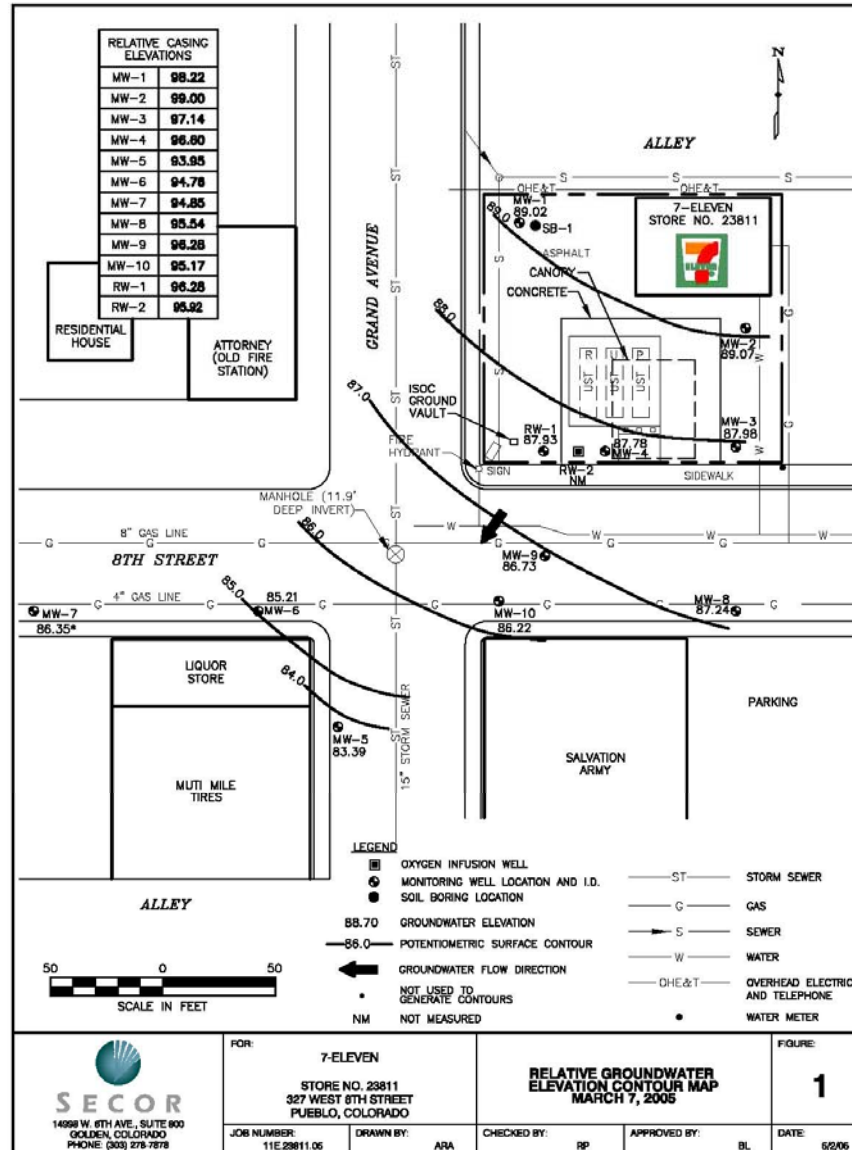
7-11 STORE # 23811

PUEBLO, COLORADO



SITE HISTORY

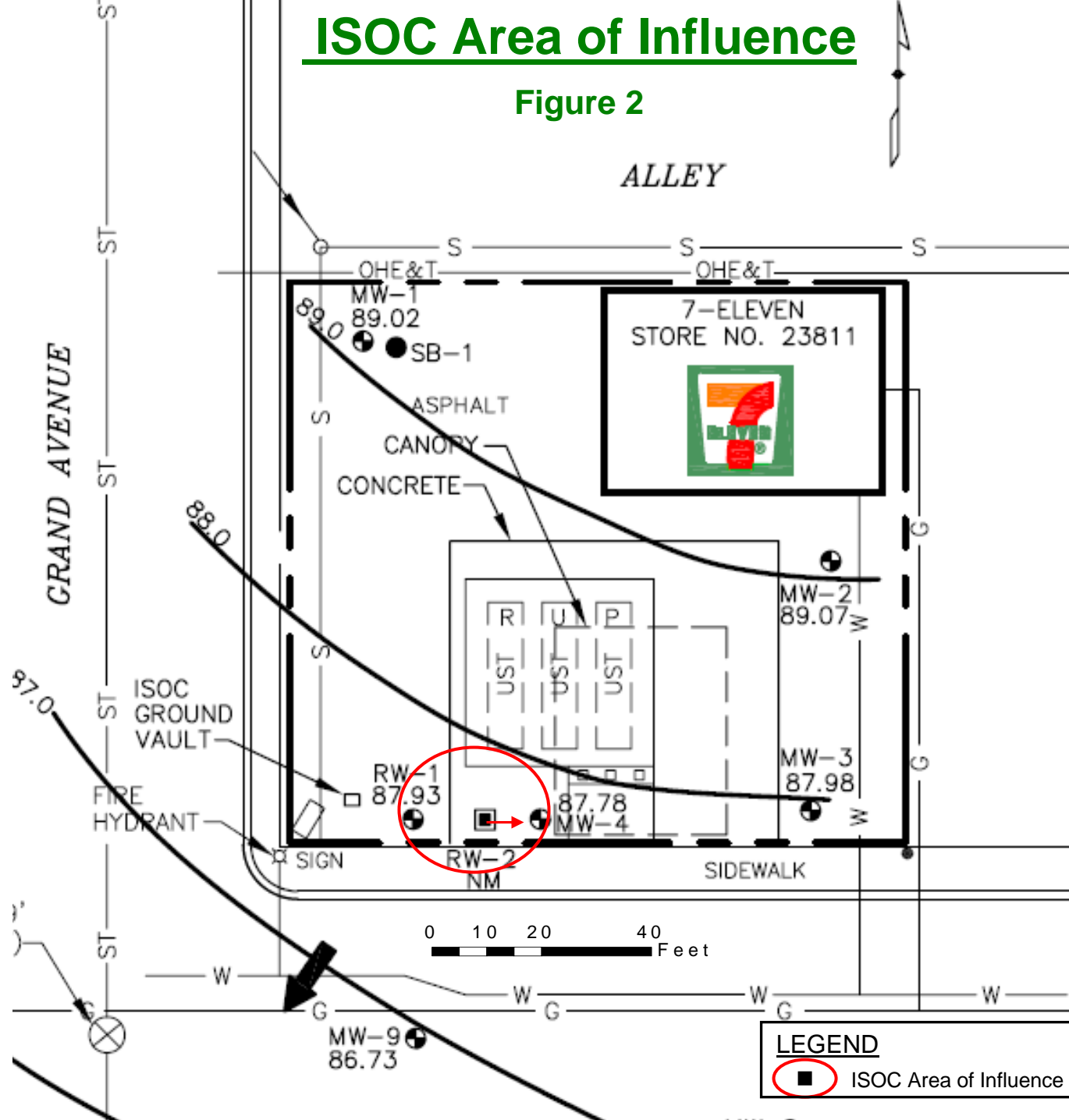
- Product line failure detected April, 1992
- Passive venting system installed September, 1995
- As of 2003, only MW-4 benzene concentrations remained above Colorado 5 ppb cleanup goal (Figure 1)
- One iSOC unit installed in RW-2 in June, 2003 --- increased DO to bioremediate MW-4 (approximately 20 ft away)
- Polishing of MW-4 for benzene successful --- iSOC unit removed April, 2005 (22 months)
- Site was in post-remediation monitoring phase for benzene. Will be reactivated for MTBE polishing.



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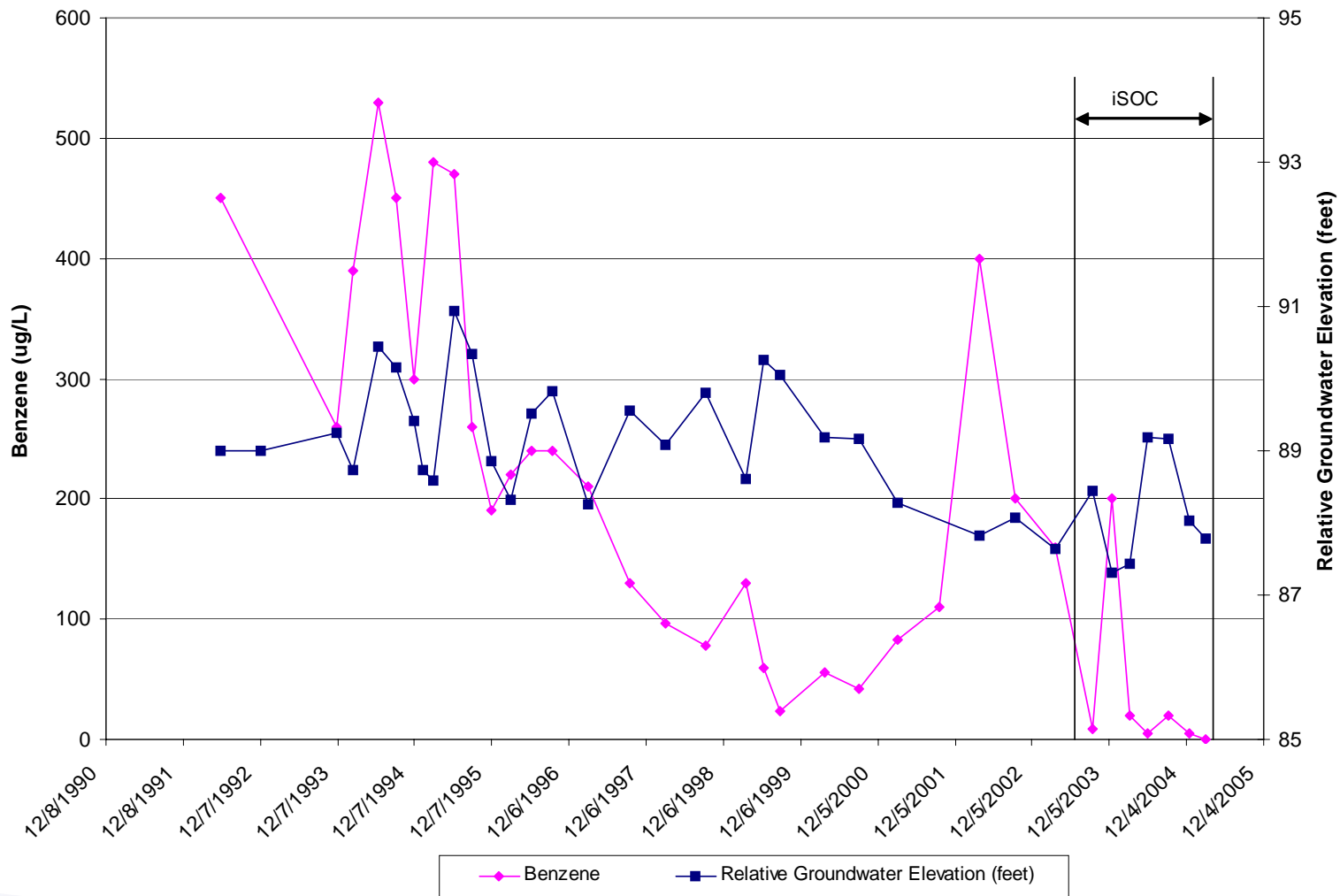
ISOC Area of Influence

Figure 2





MW-4 BENZENE CONCENTRATION vs. GROUNDWATER ELEVATION TRENDS





COST COMPARISON: POLISHING OF 1 MONITOR WELL (iSOC) vs. MONITORED NATURAL ATTENUATION

Monitored Natural Attenuation:

Annual cost* of monitoring, lab analysis, 4 quarters of reporting: \$10,000
– 15,000

Five years of costs of monitoring: \$50,000 – 75,000

Polishing of 1 Monitor Well with iSOC:

First year total iSOC costs: \$5,223
(? \$ - installation of new 2" well)

iSOC purchase – 1 unit	\$4,250.
Taxes, shipping	188.
Regulator-2 stage, low flow	250.
Polyurethane tubing	50.
Tank rental (\$10/month)	120.
125 cu.ft. oxygen cylinder fill (3 times)	90.
Traffic-rated well box	275.
Total	5,223.

* MNA monitoring costs based upon sites across US