Amos Valley Groundwater Basin

- Groundwater Basin Number: 7-34
- County: Imperial
- Surface Area: 130,000 acres (203 square miles)

**Basin Boundaries and Hydrology**
The Amos Valley Groundwater Basin underlies a southeast trending valley in southeastern Imperial County. Elevation of the valley floor ranges from about 250 to 800 feet above sea level. The basin is bounded by nonwater-bearing rocks of the Chocolate Mountains on the north and northeast and by the San Andreas fault zone on the south and southeast. Low-lying alluvial drainage divides define the eastern and western boundaries. Elevations in the Chocolate Mountains average about 2,700 feet. Much of the northern portion of the basin lies within the Chocolate Mountains Gunnery Range (Strand 1962).

Annual average precipitation ranges from about 1 to 4 inches. Surface drainage is towards the west and southwest (Strand 1962).

**Hydrogeologic Information**

**Water Bearing Formations**
The water-bearing material within the basin is alluvium, which includes unconsolidated younger Quaternary deposits and the underlying unconsolidated to semi-consolidated older Tertiary to Quaternary deposits. Maximum depth of the valley fill is estimated at about 550 feet (DWR 1954).

**Restrictive Structures**
The San Andreas fault zone may act as a barrier to the movement of groundwater.

**Recharge and Discharge Areas**
Recharge to the basin is derived primarily from the infiltration of surface runoff through alluvial deposits at the base of the Chocolate Mountains. DWR (1954) reports the movement of groundwater is towards the southeast, however, more recent investigations indicate the movement of groundwater is towards the northwest into the East Salton Sea Groundwater Basin (Moyle 1974, Tetra Tech 1999).

**Groundwater Level Trends**
Records of historic groundwater levels are sparse and encompass 1979 through 2000. In the northwest portion of the basin, records show that from 1979 through 2000, water levels declined by about 19 feet, with a depth to water ranging from about 126 to 145 feet below the surface. Similarly, in the south-central part of the basin, water levels declined by about 29 feet over the same period. Depth to water fluctuated between 193 and 228 feet below the surface. Water levels rose by about 6 feet during 1986 through 1988 in the southeast part of the basin, but declined by about 4 feet at another nearby

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location from 1986 through 1998. Water levels ranged between 465 to 480 feet below the surface.

**Groundwater Storage**

**Groundwater Storage Capacity.** Total storage capacity is estimated to be about 2,900,000 af (DWR 1975).

**Groundwater in Storage.** Unknown.

**Groundwater Budget (Type C)**

Natural recharge is estimated to be about 250 af/yr (DWR 1975)

**Groundwater Quality**

**Characterization.** The character of the groundwater in general varies between sodium chloride and sodium sulfate.

**Impairments.** The quality of the groundwater is marginal to poor for domestic use because of elevated concentrations of fluoride, chloride, sulfate, and TDS. Fluoride content ranges from 1.0 to 3.9 mg/L and averages about 2.5 mg/L. TDS content ranges from about 750 to 3,100 mg/L, with an average of about 1,500 mg/L. In addition, the groundwater may be marginal to poor for irrigation because of boron, which in one well was reported to contain 4.3 mg/L.

**Well Characteristics**

<table>
<thead>
<tr>
<th>Well yields (gal/min)</th>
<th>Municipal/Irrigation</th>
<th>Range: 50 – 100</th>
<th>Average: 50 (DWR 1975)</th>
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</thead>
<tbody>
<tr>
<td>Total depths (ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>Range:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Municipal/Irrigation</td>
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**Active Monitoring Data**

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<th>Agency</th>
<th>Parameter</th>
<th>Number of wells/measurement frequency</th>
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<tr>
<td></td>
<td>Miscellaneous water quality</td>
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<tr>
<td>Department of Health Services and cooperators</td>
<td>Title 22 water quality</td>
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</tr>
</tbody>
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**Basin Management**

Groundwater management:

Water agencies

- Public
- Private
References Cited

Errata
Changes made to the basin description will be noted here.