K-Ar Dates on Permian potash minerals from southeastern New Mexico

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K-AR DATES ON PERMIAN POTASH MINERALS FROM SOUTHEASTERN NEW MEXICO

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The 5 age dates reported here were run at the Exploration and Production Research Center of the Shell Development Co. Analytical methods, and constants used in age calculations, were given in Isochron/West, no. 3 (Jan. 1972), p. 1. The locations of the core holes from which the samples were taken are not available; the data are thus mainly useful in indicating which potash minerals give meaningful K-Ar ages.

Only langbeinite gave a K-Ar age consistent with the known Permian age of the potash beds. Sylvite gave much younger ages; langbeinite-sylvite mixtures gave intermediate ages.

1. S-EPR2132A K-Ar (langbeinite) 245±10 m.y.

Permian evaporite (Core Hole No. 2, 1663 ft.; Eddy Co., NM) consisting of langbeinite and halite with a small amount of sylvite. Analytical data: K = 17.99%; $\overset{*}{Ar}^{40}$ = 1.81 x 10^{-4} ml/g; $\overset{*}{Ar}^{40}/\Sigma Ar^{40}$ = 96.9%; analyzed separate contained minor halite.

2. S-EPR2132B K-Ar (sylvite) 74±8 m.y.

Permian evaporite (Core Hole No. 4, 1584 ft.; Eddy Co., NM) consisting of coarse-grained sylvite (70%), halite, and polyhalite. Analytical data: K = 18.73%; $\overset{*}{Ar}^{40}$ = 5.41 x 10^{-5} ml/g; $\overset{*}{Ar}^{40}/\Sigma Ar^{40}$ = 85%; analyzed separate contained some halite and a trace of polyhalite.

3. S-EPR2132C K-Ar (langbeinite & sylvite) 137±8 m.y.

Permian evaporite (Core Hole No. 5, 1536 ft.; Eddy Co., NM) consisting of langbeinite with 5% interstitial sylvite Analytical data: K = 27.52%; $\overset{*}{Ar}^{40}$ = 1.52 x 10^{-4} ml/g; $\overset{*}{Ar}^{40}/\Sigma Ar^{40}$ = 94.8%. Comment: Compare with S-EPR2132D (below) which is from same core hole.

4. S-EPR2132D K-Ar (langbeinite & sylvite) 147±10 m.y.

Permian evaporite (Core Hole No. 5, 1541 ft.; Eddy Co., NM) consisting of halite, sylvite, and langbeinite. Analytical data: K = 10.58%; $\overset{*}{Ar}^{40}$ = 6.25 x 10^{-5} ml/g; $\overset{*}{Ar}^{40}/\Sigma Ar^{40}$ = 51%; analyzed separate contained considerable halite.

5. S-EPR2132E K-Ar (sylvite) 18±8 m.y.

Permian evaporite (from First Ore Zone, Potash Company of America Mine, Eddy Co., NM) consisting of halite, sylvite, and light blue mineral which was not identified. Analytical data: K = 49.84%; $\overset{*}{Ar}^{40}$ = 3.68 x 10^{-5} ml/g; $\overset{*}{Ar}^{40}/\Sigma Ar^{40}$ = 15%; analyzed separate contained some halite.

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