

**TABLE 2.6-4
RESERVOIRS AND STOCK PONDS
SOUTH HEART LIGNITE MINE**

| Reservoir/ Pond | Twp | Rng | Sec | Water Quality Samples Collected? | Type | Land Owner | Use | Developed Water Resource Surface Area in June 2006 (acres) | Volume (acre-ft) | Comment | Probable Impacts from Mining and Year | Year of Disturbance or Closest Distance to Mine Open Mine Pit | Probable Hydrologic Reclamation Action |
|--------------------|-----|-----|-----|--|-------------|--------------------------------------|------------|--|---------------------|---|--|---|---|
| SHRES-14 | 139 | 98 | 14 | No | Impoundment | Perdaems, James D. and Rosella J. | Stock | na | na | Dry | None | na | None |
| SHRES-15 | 139 | 98 | 15 | No | Impoundment | Mary Peters, et al | Stock | na | na | Dry | Mined through in 2023 | 2023 | Water replacement consistent with post-mining land use |
| SHRES-16A | 139 | 98 | 16 | Yes | Impoundment | Mary Peters, et al | Stock | 0.05 | 0.006 | | Mined through in 2035 | 2035 | Water replacement consistent with post-mining land use |
| SHRES-16B | 139 | 98 | 16 | Yes | Impoundment | Mary Peters, et al | Stock | 0.36 | 0.017 | | Mined through in 2032 | 2032 | Water replacement consistent with post-mining land use |
| SHRES-16C | 139 | 98 | 16 | Yes | Impoundment | Mary Peters, et al | Stock | 0.46 | 0.019 | | Mined through in 2033 | 2033 | Water replacement consistent with post-mining land use |
| SHRES-16D | 139 | 98 | 16 | Yes | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | 0.46 | 0.019 | | Mined through in 2036 | 2036 | Water replacement consistent with post-mining land use |
| SHRES-17 | 139 | 98 | 17 | Yes | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | 0.35 | 0.017 | | Mined through in 2037 | 2037 | Water replacement consistent with post-mining land use |
| SHRES-17A | 139 | 98 | 17 | Yes | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | 0.23 | 0.014 | | None | | None |
| SHRES-17B | 139 | 98 | 17 | No | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | na | na | Dry | Within less than 1000 ft of pit boundary 2043 | 2043 | Possible water replacement consistent with post-mining land use |
| SHRES-17C | 139 | 98 | 17 | No | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | na | na | Dry | Within less than 1000 ft of pit boundary 2043 | 2043 | Possible water replacement consistent with post-mining land use |
| SHRES-17D | 139 | 98 | 17 | No | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | na | na | Dry | Within less than 1000 ft of pit boundary 2043 | 2043 | Possible water replacement consistent with post-mining land use |
| SHRES-20A | 139 | 98 | 20 | No | Excavation | Western Area Power Authority | Stormwater | 0.68 | 0.023 | Stormwater retention pond; not sampled due to access | None | na | None |
| SHRES-20B | 139 | 98 | 20 | No | Excavation | Western Area Power Authority | Stormwater | 0.74 | 0.024 | Stormwater retention pond; not sampled due to access | None | na | None |

Notes:

Reservoir use is based on observations, discussions with land owners, and land use

All potential reservoirs were initially identified from aerial photographs taken in June 2006; supplemental ground surveys occurred in September and October 2006 and May 2007 to identify reservoirs that actively hold water

Water quality results are presented in Appendix 2.6-4

Developed water resource areas were estimated from aerial photographs taken in June 2006 when reservoirs are assumed to contain nearly maximum volume due to precipitation and runoff

Volumes of reservoirs observed to hold water were estimated by assuming the shape of the reservoir is approximated by one half an oblate spheroid with an equatorial radius estimated from the area and a polar radius of 5 ft. The polar radius is estimated from field observations of livestock in the pools and likely represents a maximum depth.

Years of probable impacts and disturbance assume mining begins in 2014

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|--------------------|-----|-----|-----|--|-------------|---------------------------------------|-------|--|---------------------|----------------|---|---|---|
| SHRES-21A | 139 | 98 | 21 | No | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | na | na | Dry | Mined through in 2020 | 2020 | Water replacement consistent with post-mining land use |
| SHRES-21B | 139 | 98 | 21 | No | Impoundment | Kuylen, Robert F. and Brenda K. | Stock | 0.35 | 0.017 | | Mined through in 2035 | 2035 | Water replacement consistent with post-mining land use |
| SHRES-22 | 139 | 98 | 22 | Yes | Excavation | Perdaems, James D. and Rosella J. | Stock | 0.59 | 0.022 | | Within less than 1000 ft of pit boundary 2021 | 2021 | Possible water replacement consistent with post-mining land use |
| SHRES-22A | 139 | 98 | 22 | No | Impoundment | Perdaems, Jerry F. and Sandra M. | Stock | na | na | Dry | Within less than 1000 ft of pit boundary 2015 | 2015 | Possible water replacement consistent with post-mining land use |
| SHRES-22B | 139 | 98 | 22 | No | Excavation | Perdaems, James D. and Rosella J. | Stock | 0.21 | 0.013 | Active feedlot | Within less than 1000 ft of pit boundary 2022 | 2022 | Possible water replacement consistent with post-mining land use |
| SHRES-23 | 139 | 98 | 23 | Yes | Impoundment | Perdaems, James D. and Rosella J. | Stock | 0.32 | 0.016 | | None | na | None |
| SHRES-23A | 139 | 98 | 23 | Yes | Excavation | Perdaems, James D. and Rosella J. | Stock | 0.23 | 0.014 | | None | na | None |
| SHRES-27 | 139 | 98 | 27 | Yes | Impoundment | Kuylen, Patrick; Kuylen, Katherine R. | Stock | 0.10 | 0.009 | | Mined through in 2040 | 2040 | Water replacement consistent with post-mining land use |
| SHRES-27A | 139 | 98 | 27 | No | Impoundment | Kuylen, Patrick; Kuylen, Katherine R. | Stock | na | na | Dry | Mined through in 2039 | 2039 | Water replacement consistent with post-mining land use |
| SHRES-28 | 139 | 98 | 28 | Yes | Excavation | Kuylen, Patrick; Kuylen, Katherine R. | Stock | 0.32 | 0.016 | | Within less than 1000 ft of pit boundary 2017 | 2017 | Possible water replacement consistent with post-mining land use |
| SHRES-3 | 138 | 98 | 3 | No | Impoundment | Luptak, Raymond and Vivian | Stock | 0.39 | 0.018 | | None | na | None |
| SHRES-34 | 139 | 98 | 34 | Yes | Excavation | Emmil, Leocadia Family Trust | Stock | 0.32 | 0.016 | | None | na | None |

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