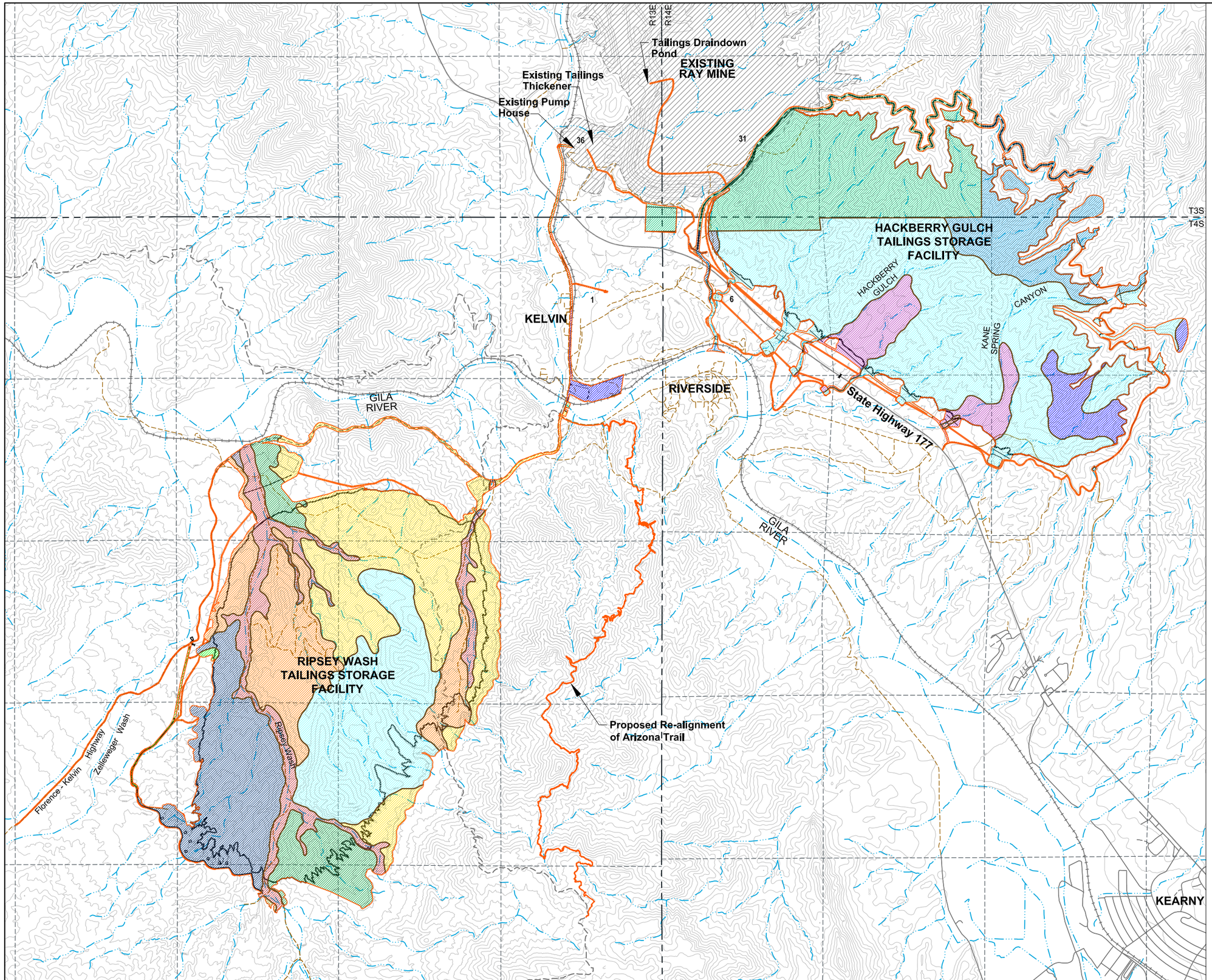


LEGEND:

- EXISTING GROUND SURFACE CONTOUR EL, FEET (3750)
- EXISTING DRAINAGES
- EXISTING RAILROAD
- EXISTING ROAD
- EXISTING TRAIL/UNIMPROVED ROAD
- PROPOSED DIVERSION CHANNEL
- SOILS DISTURBED BY PROJECT

DISTURBED AREA RIPSEY WASH TSF SOILS

MAP UNIT	AREA
9	226 Acres
15	447 Acres
16	2 Acres
17	12 Acres
28	5 Acres
40	796 Acres
43	3 Acres
48	596 Acres
52	4 Acres
78	274 Acres
79	2 Acres
92	30 Acres
96	175 Acres
101	2 Acres

DISTURBED AREA HACKBERRY GULCH TSF SOILS

MAP UNIT	AREA
15	28 Acres
27	253 Acres
28	779 Acres
48	772 Acres
55	319 Acres
78	3 Acres
92	132 Acres
101	4 Acres

N

0 750 1500 3000
APPROXIMATE SCALE (FEET)

Figure 21
Soils Map

LEGEND:

- PROPOSED RIPSEY WASH TSF FOOTPRINT
- EXISTING DRAINAGES
- EXISTING RAILROAD
- FAULT / FRACTURES
- PROPOSED DIVERSION CHANNEL
- PROPOSED RECLAIM PIPELINE
- PROPOSED ELECTRICAL LINE
- PROPOSED ACCESS ROADS
- ARIZONA TOWNSHIP AND RANGE LINES
- ARIZONA SECTION LINES
- EXPLORATION PIEZOMETER

EXPLANATION

Quaternary	Qal	ALLUVIAL DEPOSITIS IN WASHES
Quaternary	Qog	OLDER GRAVELS
Miocene	Truc	UPPER COBBLE CONGLOMERATE (UPPER MEMBER)
Miocene	Trt	MASSIVE TUFFACEOUS SANDSTONE (LOWER MEMBER)
Miocene	Ldp	DIKES OF LARAMIDE AGE; INCLUDE QUARTZ MONZONITE PROPHYRY DIKES AND SMALL MASSES; MONZONITE PORPHYRY DIKES; GRANODIORITE DIKES (63 M.Y.)
Miocene	Kt	TORTILLA QUARTS DIORITE (70.5 m.y.)
Miocene	Ydb	DIABASE SILLS AND DIKES INTRUDING Ygr
Miocene	Yrg	RUIN GRANITE; INCLUDES APLITE PORPHYRY AND APLITE DIKES INTRUDING Ygr

0 400 800 1600
APPROXIMATE SCALE (FEET)

References:
Geology: Provide by AMEC Foster Wheeler.

Note: Section A-A' shown on Figure 23 (Schematic Geologic Cross-Section)

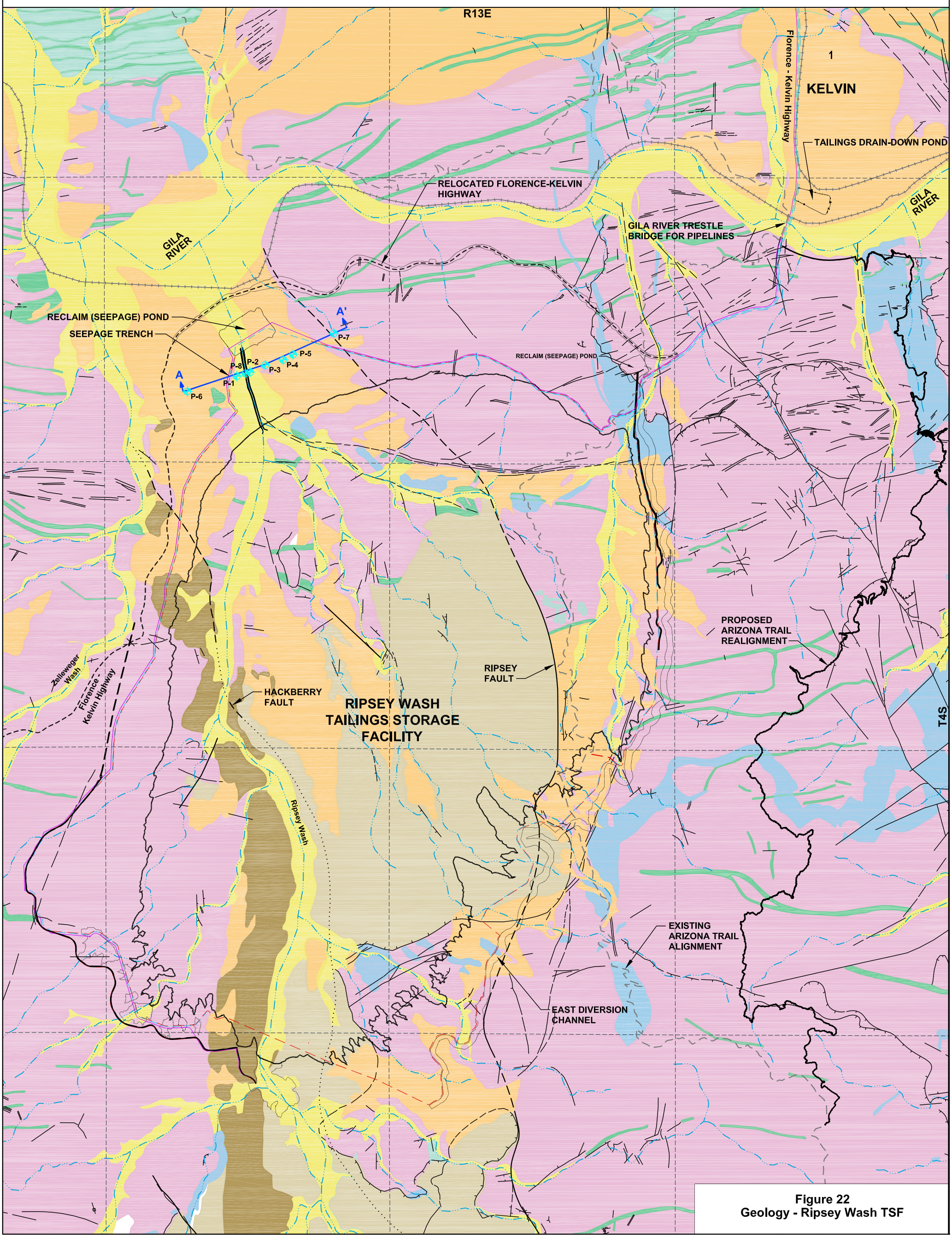
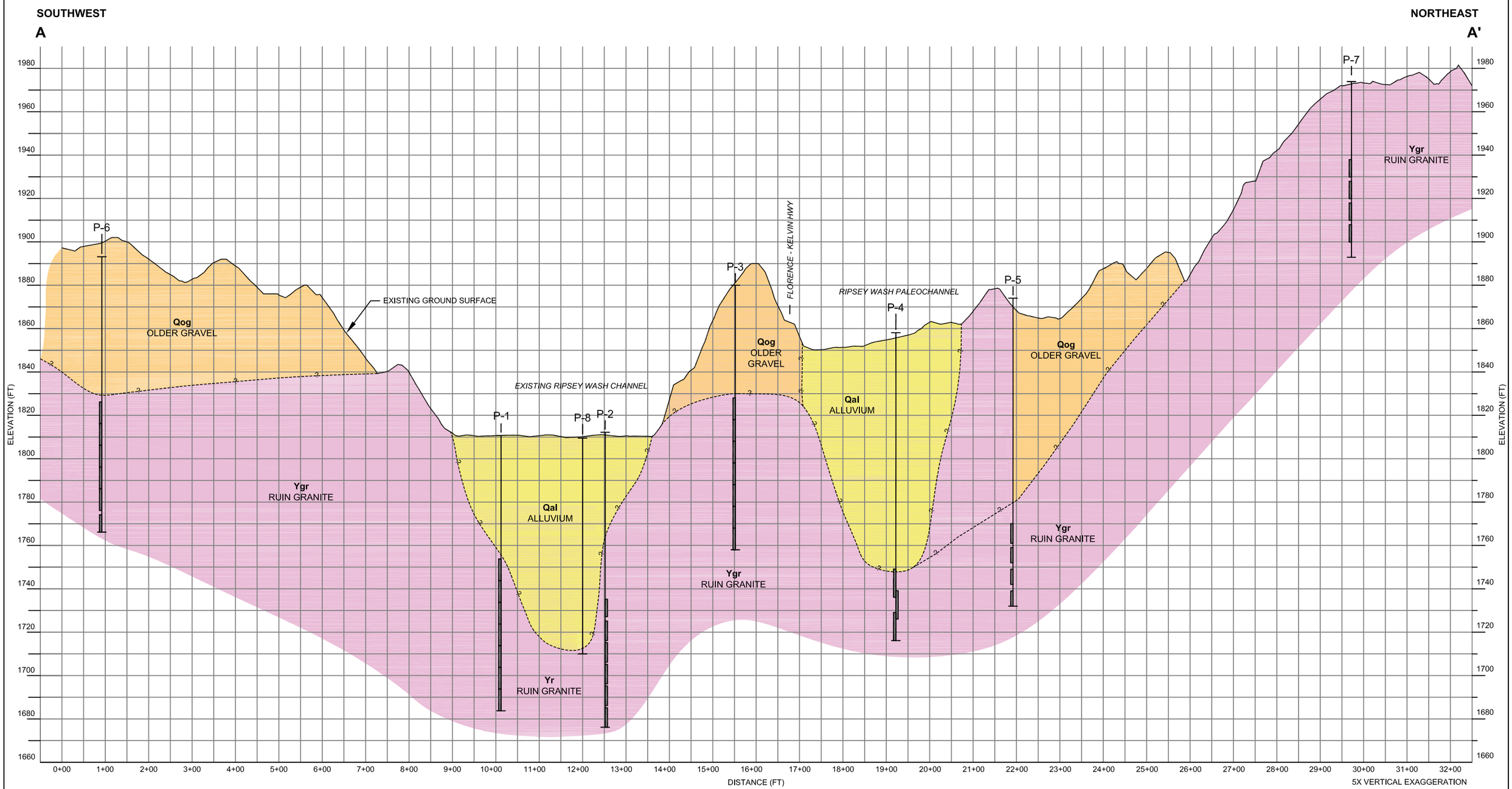


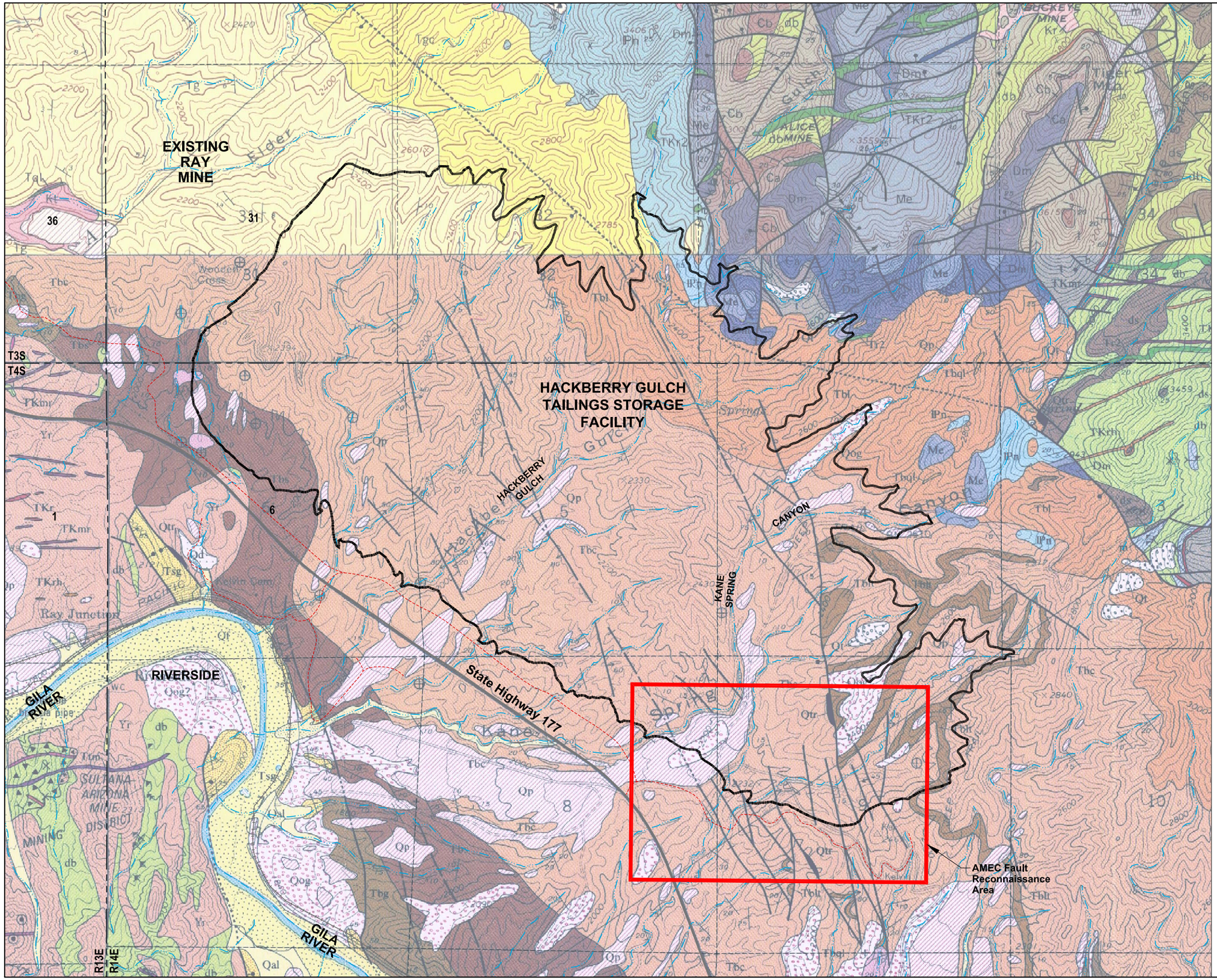
Figure 22
Geology - Ripsey Wash TSF



Source: AMEC 2014.

Note:
1. Vertical scale is exaggerated compared to the horizontal scale.
2. Cross-Section A-A' Location shown on Figure 22, Geology - Ripsey Wash TSF

Figure 23
Schematic Geologic Cross-Section - Ripsey Wash TSF



LEGEND:

- PROPOSED HACKBERRY GULCH TSF FOOTPRINT
- EXISTING DRAINAGES
- EXISTING RAILROAD
- INFERRED FAULT
- PROPOSED ACCESS ROADS
- ARIZONA TOWNSHIP AND RANGE LINES
- ARIZONA SECTION LINES

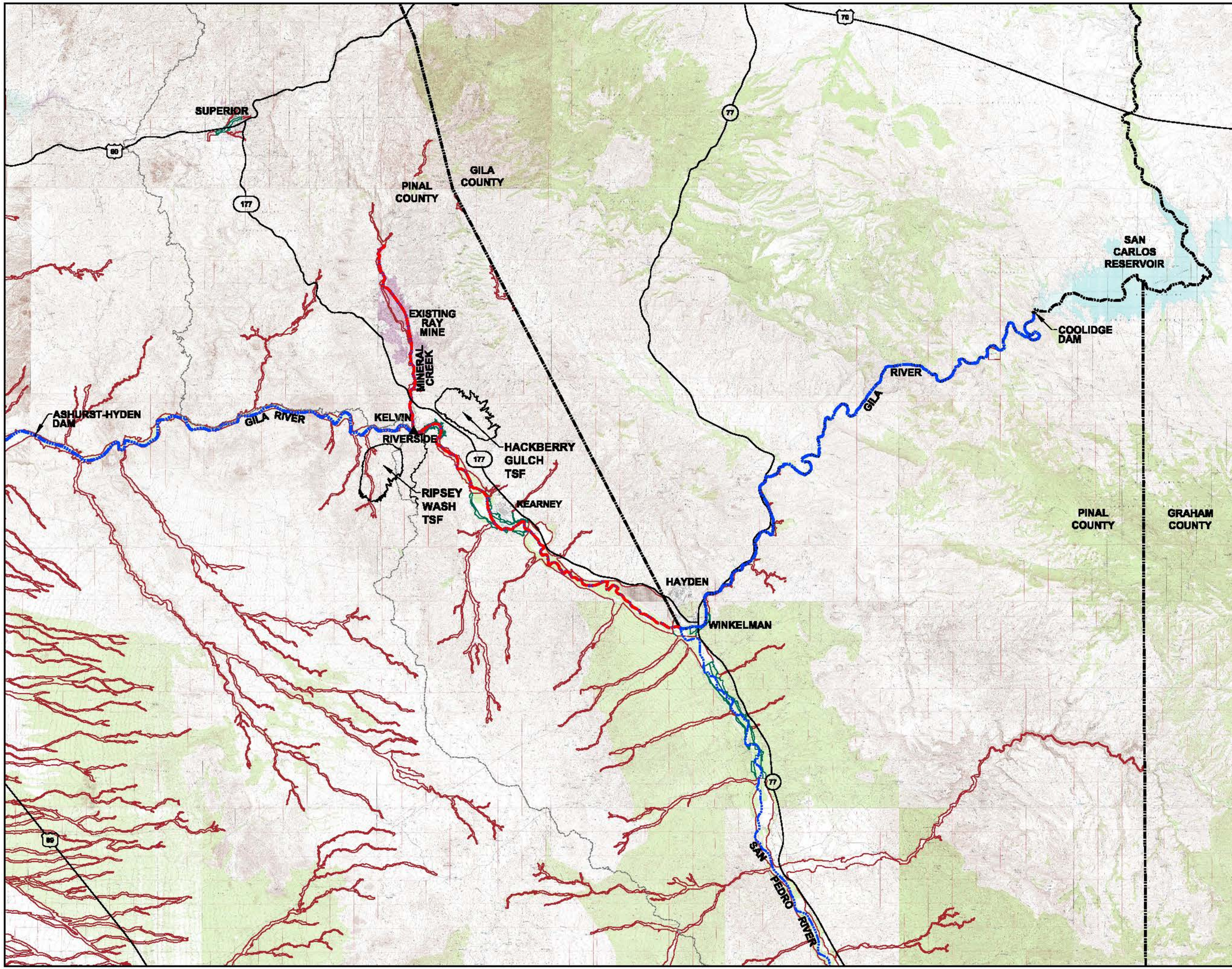
EXPLANATION

Qal	Alluvium	Tblt	Lapilli tuff
Qt	Talus	Tbs	Sandstone and conglomerate
Qtr	Travertine	Kt	Tortilla Quartz Diorite
Qp	Pediment gravels	IPn	Naco Limestone
Qog	Older gravels	Me	Escabrosa Limestone
Tbl	Limestone conglomerate	Dm	Martin Limestone
Tbc	Conglomerate		

References:
Geology: Kearny Quadrangle Map, Cornwall and Krieger, 1975, USGS.
Sonora Quadrangle Map, Cornwall et al, 1971, USGS.

0 400 800 1600
APPROXIMATE SCALE (FEET)

Figure 24
Geology - Hackberry Gulch TSF



LEGEND:

- RIVERS
- COUNTY LINES
- HIGHWAYS
- IMPARIED WATERS
- ▲ USGS STREAM GAGE 09474000, GILA RIVER AT KELVIN, AZ

FEMA ZONE DEFINITIONS:

ZONE A - The flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

ZONE AE - The flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

0 5,000 10,000 20,000
APPROXIMATE SCALE (FEET)

Figure 25
Regional Surface Water