APPENDIX 14

DIXIE VAELLEY WELLFIELD CROSS-SECTIONAL CORRELATIONS BETWEEN VARIOUS DATA SETS: SUMMARY TABLE

Correlation between Various Cross-Sectional Data-Sets in the Dixie Valley Wellfield, see Plate 1. Cells highlighted orange indicate a lack of a correlation.

Section	*Geology Correlation with*					*Gravity/Magnetic inferred Lithology Correlation with*				*Temperature Correlation with*	
	Magneto-tellurics (MT)	*Seismic Reflection Profile*	*Gravity/Magnetics Model*	*Temperature*	*Vp*	*MT*	*Seismic Reflection Profile*	*Temperature*	*Vp*	*MT*	*Vp*
Section C	Array S	Line 102 not available	Section C	Section C	Section C	Array S	Line 102 not available	Section C	Section C	Array S	Section C
	Major geologic structures coincide with resistivity breaks		Inferred gravity/magnetic structures bound Jurassic rocks (Jg)		No correlations found				No correlations found		No correlations found
	Range-front and piedmont fault tightly bound bodies of high resistivity in their footwall blocks		Inferred gravity/magnetic structures comprising the DVFZ closely resemble geologic structures	Upward bend in isotherms (convective flow) correlate with the range-front and piedmont fault				Gap in magnetic Jurassic rocks (Jg) coincide with major thermal-upwelling zones		Shallow, localized high resistivity anomaly found to correlate with an intra-range structure suggesting thermal alteration	
	Shallow resistivity below Stillwater Range coincides with fumarole activity and infers hydrothermal alteration at shallow depth		Absence of Jg coincides with Section 10 fumaroles and suggests demagnetization in the DVFZ			Shallow low resistivity below Stillwater Range coincides with discontinuity in Jg					
	Infers steeply dipping structures in the DVFZ (~75-80°)		Infers steeply dipping structures in the DVFZ(~85°)			Infers steeply dipping structures in the DVFZ(~85°)					
	Wide very low resistivity (in the valley) interpreted as an alteration zone lies within N-S trending structural block		Termination of magnetic Jz rocks (Jg) and associated bounded structure directly coincide with the occurrence of a major north-trending structure			Magnetic Jurassic rocks (Jg) do not extend through alteration zone identified by the vertical-trending low resistivity structure					
			Basin-fill deeper than expected from geologic section								
Section D	No associated MT Array	Line 9/104	Section D	Section D	Section D	No associated MT array	Line 9/104	Section D	Section D	No MT array	Section D
		Seismic inferred piedmont fault coincides with geologic section	Major structural offset occurs in same position as piedmont fault and intra-range structure correlates with surface fault	Upward bend in isotherms (convective flow) correlate with the range-front and piedmont fault	No correlations found		Major piedmont fault identified in the same location by both data-sets	Thicker magnetic section found in the main injection zone suggest a hydrothermal alteration component	No correlations found		No correlations found
		Interpreted reflectors for volcanics are thicker than expressed in geologic sections	Missing magnetic rocks (Jg) in the valley coincides with a North-trending geologic structure				Basalt reflector and associated volcanics section not found				
			Occurrence of magnetic rocks (Jg) in the vicinity of the main injection zone is much thicker than Jurassic rocks encountered in the wells								
			Major range-bounding structure occurs ~ 1km rangeward than expected range-front fault from geologic section								

Section	***Geology Correlation with***					***Gravity/Magnetic inferred Lithology Correlation with***				***Temperature Correlation with***	
	Magneto-tellurics (MT)	***Seismic Reflection Profile***	***Gravity/Magnetics Model***	***Temperature***	***Vp Seismic***	***Magneto-tellurics (MT)***	***Seismic Reflection Profile***	***Temperature***	***Vp Seismic***	***MT***	***Vp Seismic***
Section E	Array C	Line 6	Section E	Section E	Section E	Array C	Line 6	Section E	Section D	Array C	Section E
	Low resistivity structure dipping ~70°SE lying NW of DVF infers a previously active structure within range that coincides with surface geology	Occurrence of side reflector (steep structure break) coincides with piedmont fault	No major structural discontinuity occurs at range-front fault	Upward bend in isotherms (convective flow) correlate with the range-front and piedmont fault	No correlations found	Jg unit is not continuous through low resistivity zone in valley	Major piedmont fault identified in the same location by both data-sets	Missing magnetic rocks (Jg) in the DVFZ suggest alteration	No correlations found	Higher resistivity in the shallow subsurface near the range-front fault suggest thermal alteration	No correlations found
	Higher resistivity block coincides with producing zone (Section 7 production wells)	Basalt (Tmb) is truncated by piedmont fault and major intrabasin fault near 62-21	Implies a broad zone of intermittent step-faulting bounds the eastern edge of the valley coinciding with geologic interpretations and geophysical surverys	Thermal Isotherms "fall off" in the area of 62-21 away from the DVFZ		Higher resistivity block near section 7 wells correlates with thick fault-bounded Jg section		Missing magnetic rocks (Jg) in the valley near 62-21 coincide with a non-thermal bearing west-dipping fault			
	North-trending structure tightly bounds higher resistivity to NE		No major intra-range faults identified by the Gravity-Magnetic Model								
	Resistivity above ~50 ohm-m infers basement rocks and coincides with geology										
	Moderately dipping (~60-65°) zone of higher resistivity below Cottonwood Canyon (CC) infers a more shallow dip for range-front fault										
	Very high resistivity block (~5600 ohm-m) occurs beneath central Stillwater Range and doesn't coincide with granodiorite (Kgr) within footwall of piedmont fault										
Section F	Array N	Line 102	Section F	Section F	Section F	Array N	Line 102	Section F	Section F	Array N	Section F
	Higher Resistivity beneath Stillwater Range and within DVFZ corresponds to basement rocks		Thick occurrence of Jg beneath the Stillwater Range does not coincide with surface geology indicating Triassic meta-seds	Upward bend in isotherms (convective flow) correlate with the range-front and piedmont fault	No correlations found	Gap in Jg beneath valley directly coincides with low resistivity zone	Major piedmont fault identified in the same location by both data-sets	Missing magnetic rocks (Jg) in the DVFZ suggest alteration	No correlations found		
	Sharp resistivity change occurs across piedmont fault	Interpreted side reflection in agreement with occurrence of piedmont fault	Multiple faults (at least three) comprising the DVFZ agree with geologic section	Area of shallow high geothermal gradients and increased temperature occur in the Senator Fumaroles and 38-32 area as expected				Missing magnetic rocks in valley does not coincide with any major N-trending structures		Very low resistivity structure found at surface coincides with surface and alluvium alteration near Senator Fumaroles	
	Shallow low resistivity occurs at Senator Fumaroles										
	Very low resistivity in the upper 0.5km subsurface near 38-32 concides with a zone of alteration at the surface (Senator fan) and encountered in 38-32					Shallow very low resistivity zone near well 38-32 coincides with a discontinuous Jg unit within the DVFZ					
	Prominent fault within the zone of step-faulting that bounds the eastern edge of the valley coincides with a sharp resistivity break										