

TABLE 3
PREVIOUS INVESTIGATIONS, PROPOSED FRIs
 Leviathan Mine Site
 Alpine County, California

Year	Previous Investigation	Well Location FRI	Mapping FRI	On-property FRI	Off-property FRI	Reference FRI
1952	Letter to the RWQCB: Regarding Water Samples Collected from Aspen and Leviathan Creeks, Pre-Open Pit Mining (White, 1952)	x		x		
1955	Nevada Division of Wildlife Stream Survey - Bryant Creek (NDCNR, 1955)				x	x
1958	Report Leviathan Creek Bioassay (Coli, 1958)				x	
1958	Leviathan Creek Water Quality Sample Results (Reinke, 1958)			x	x	
1968	Report on Pollution of Leviathan Creek Caused by Leviathan Mine (RWQCB, 1968)		x	x		
1969	Letter: Transmit RWQCB Meeting Minutes; Fish and Game Report (Leggett, 1969)			x		
1969	Investigation of Soil and Irrigation Water Conditions on the Brooks Park - River Ranch (Nelson Laboratories, 1969)				x	
1970	An Appraisal of the Effects of Contaminants in Irrigation Water Derived from Bryant Creek on the Agricultural Potential of River Ranch (Young, 1970)				x	
1975	Report on Pollution of Leviathan Creek, Bryant Creek, and the East Fork Carson River caused by the Leviathan Sulfur Mine (RWQCB, 1975)				x	
1977	The Revegetation Potential of the Leviathan Mine Spoils, MS Thesis University Nevada Reno (Butterfield, 1977)			x		
1983	Leviathan Mine Pollution Abatement Project, Design Report and Draft Environmental Impact Report, April 1983 (Brown and Caldwell, 1983)	x	x	x	x	x
1984	Shallow Groundwater Flow in the Vicinity of the Open Pit at the Leviathan Mine (Prudic and Hammermeister, 1984)	x		x	x	x
1985	Hydrologic Data for Leviathan Mine and Vicinity Alpine County, California, 1981-83 (Hammermeister and Waimsley, 1985)	x		x	x	x
1989	Final Revised Analyses of Major and Trace Elements from Acid Mine Waters in the Leviathan Mine Drainage Basin, California and Nevada, October 1981 to October 1982 (Ball and Nordstrom, 1989)	x		x	x	
1991	A History of the Leviathan Mine Pollution Abatement Project, Alpine County, California (Taxer, et. al, 1991)	x	x	x		x
1995	Leviathan Mine 5-Year Work Plan, Lahontan Regional Water Quality Control Board (RWQCB, 1995a)	x	x	x		x
1996	Mercury Levels in Surface Waters of the Carson River - Lahontan Reservoir System, Nevada: Influence of Historic Mining Activities (Bozong et. al., 1996)				x	x
1997	Partial Soil Remediation and Re-vegetation of the Leviathan Mine (Claassen, 1997)		x	x		
1998	Trace-Element Enrichment in Streambed Sediment and Crayfish, Carson and Truckee Rivers, Nevada and California, September 1992 (Lawrence, 1998)				x	x
1998	Leviathan Mine, Spring 1998 Spring Monitoring Program (SRK, 1998)		x	x	x	
1998	Data on Stream-Water and Bed-Sediment Quality in the Vicinity of Leviathan Mine, Alpine County, California, and Douglas County, Nevada; September 1998 (Thomas and Lico, 1998)		x		x	
1999	1998-1999 Summary Report, Administrative Order on Consent, Leviathan Mine, Alpine County, California (SRK, 1999)	x		x		
1999	Data Report for the Leviathan Mine Study Area Water and Sediment Toxicity Testing and Benthic Community Data, September 1998 Assessment (ENSR, 1999)			x	x	
1999	Assessments of Injuries to Aquatic Natural Resources near the Leviathan Mine, Alpine County, California. Phase 1 Data Report: Concentrations of Metals and Trace Elements in Aquatic Insects and Fish (Thompson and Welsh, 1999)				x	
2000	Methyl-mercury in Water and Bottom Sediment along the Carson River System, Nevada and California, September 1998 (Hoffman and Thomas, 2000)				x	
2000	Leviathan Mine Natural Resources Damage Assessment Phase I Fisheries Assessment (Lehr, 2000)				x	
2001	Operation and Monitoring of Bioreactors at the Leviathan Mine (Miller, 2001)			x		
2002	Geotechnical Investigation Report, Phase I Preliminary Slope Stability Evaluation, Leviathan Mine Delta Area Waste Pile, Alpine County, California (Kleinfelder, 2002)		x	x		
2002	Leviathan Mine 2001 Early Response Action, Channel Underdrain Treatment Completion Report (Brown and Caldwell, 2002)			x		

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2002	Geotechnical Investigation Report: Phase II Preliminary Slope Stability Evaluation, Leviathan Mine Delta Area Waste Pile, Alpine County, California. Report (Kleinfelder, 2002)		x	x		
2002	Influence of Natural Sources on Mercury in Water, Sediment, and Aquatic Biota in Seven Tributary Streams of the East Fork of the Upper Carson River, California (Fischer and Gustin, 2002)				x	x
2002	Leviathan Mine Site, Phase I Remedial Investigation/Feasibility Study Work Plan Draft, April 2002 (MWH, 2002)		x	x	x	x
2004	Bioassessment Monitoring of Acid Mine Drainage Impacts in Streams of the Leviathan Mine Watershed: An Update for 2003 Surveys (Herbst, 2004b)				x	
2004	Leviathan Soils and Vegetation Study (Evans and Associates, 2004)		x	x		
2004	Leviathan Road XRF Data, January 6 (Brooks, 2004)				x	
2006	Preliminary Assessment of Fish Community Dynamics and Trace-Element Exposures to Aquatic Invertebrates and Salmonids, Lower Bryant Creek and East Fork Carson River, Douglas County, Nevada, 2001 (Higgins, 2006)				x	
2006	Water Quality Study Report for the Natural Resource Damage Assessment of Surface Water Below the Leviathan Mine, Alpine County, California and Douglas County, Nevada (Markin and Yee, 2006)	x			x	
2006	Summary of Material Testing and Observation Services, Geotechnical Slope Stability, Leviathan Mine Delta Area Waste Pile, Alpine County, California (Kleinfelder, 2006)			x		
2006	Leviathan Mine Plant Study: Trace Metals and Mercury Results, May (Frontier GeoSciences, 2006)				x	
2008	Phase II Environmental Site Assessment: Soil, Sediment, and Plant Tissue Sampling River Ranch Property, Parcel #2, Douglas County, Nevada (Robison, 2008)		x		x	
2008	Precipitation Data contained in the Data Quality Objective Report: Remedial Investigation and Feasibility Study, Leviathan Mine, Alpine County (Atlantic Richfield, 2008c)			x	x	
	Electronic Surface Water Data obtained from other Sources			x	x	
	Project Database			x	x	x
1995-2003	Electronic Data Report (EDR) - Semi-annual Bioassessment Data (Herbst)			x	x	
1998-2002	EDR - Periodic Flow Measurements (USGS)			x	x	
2002-2005	Electronic Data Transfer (EDT) - Field Evaluation and Technical Support Data (EPA)			x		
2003-2005	EDT - Aspen Seep Bioreactor Data (University of Nevada Reno, for Atlantic Richfield)			x		
Ongoing	Oversight Summaries (U.S. Army Corps of Engineers)			x	x	
Ongoing	EDT - Surface water quality data (RWQCB)			x	x	x
Ongoing	EDT - Treatment monitoring data (Atlantic Richfield)			x		
Ongoing	EDT - Emergency Response Actions (ERA) Treatment Data (Atlantic Richfield)			x		
Ongoing	EDT - Surface Water Quality Data (Nevada Dept. of Environmental Protection)			x	x	
Ongoing	Published Flow Data (USGS)			x	x	
Ongoing	EDT - Surface Water Quality Data, ERA, Treatment, and Climate Data (RWQCB and Atlantic Richfield)	x		x	x	

Notes:
 PWP = Remedial Investigation/Feasibility Study Program Work Plan prepared by AMEC Geomatrix, dated July 2009
 PWP Section Reference = Refer to the listed section in Appendix B of the PWP for a summary of the previous investigation
 Refer to the PWP for details on the sources cited.