

**Happy Valley Interim Source Removal Action (ISRA).
Septic Tank Water Sampling for Radionuclides.
Waste Certification.**

This data package provides the laboratory results of a water sample taken from the Happy Valley Interim Source Removal Action (ISRA) area Septic Tank.

One sample was taken for waste disposal characterization and analyzed for strontium-90, tritium and gamma emitting radionuclides by gamma spectroscopy, using an off-site laboratory. The minimum detectable activity (MDA) for cesium-137 was 4.85 pCi/L which is less than the EPA drinking water supplier maximum contaminant level (MCL) of 200 pCi/L. The MDA for strontium-90 was 1.72 pCi/L which is less than the EPA drinking water supplier MCL of 8 pCi/L. The MDA for tritium was 81.8 pCi/L which is less than the EPA drinking water supplier MCL of 20,000 pCi/L. The gamma spectroscopy library also included the following contaminants-of-concern: Na-22, K-40, Mn-54, Co-60, Cs-134, Eu-152, Eu-154, Th-228, Th-232, U-235, U-238 and Am-241. The laboratory data package is available on request.

Conclusions

All radionuclides, including cesium-137, strontium-90 and tritium were non-detect. This water is certified to be "radiologically" acceptable for shipment and disposal off-site. There are no radiological controls or restrictions imposed on future disposition or use of this water.



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Appendix 1
Radionuclide Results

Happy Valley Septic Tank Water

Project Name	Project Area	Sampling Organization	Sampling Date	Sampling Location (Specific)	Sample Serial Number	Media Type	Isotope	Value	Error (+/-)	MDA	Non-Detect?	Units	Error Type	Analysis Protocol	Analysis Organization	Document	Status
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Americium-241	9.85	16.2	24.5	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Cesium-134	1.02	2.99	5.23	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Cobalt-60	-1.17	3.46	5.33	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Europium-152	2.15	7.04	12.4	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Europium-154	3.9	7.03	13.2	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Manganese-54	-0.792	2.67	4.22	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Potassium-40	-20.2	32.5	50.4	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Sodium-22	1.73	2.47	4.74	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Strontium-90	0.31	0.955	1.72	NDA	pCi/L	2 sigma	EPA 905.0 Modified	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Thorium-228	1.28	6.18	8.74	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Thorium-232	1880	19700	4760	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Tritium	57.8	49.5	81.8	NDA	pCi/L	2 sigma	EPA 906.0 Modified	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Uranium-235	-7.72	20.3	31.9	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste
2009 ISRA Waste Characterization	On-site	MWH	9/21/2009	HZCW0001	HZCW0001AS001	WATER	Uranium-238	152	207	245	NDA	pCi/L	2 sigma	EPA 901.1	GEL	237651	Waste