

Table 5.7-1 Marsland Expansion Area Operational Effluent and Environmental Monitoring Plan

Type of Sample	Sample Collection		Method	Sample Analysis		
	Number	Location		Frequency	Frequency	Type of Analysis
AIR	3	On MEA southern boundary	Continuous	Weekly filter change or more frequently as required by dust loading	Quarterly composites of weekly samples	Nat-Uranium, Ra-226, Th-230, Pb-210
	1	In the sector having the highest predicted concentration of airborne particulate	Continuous	Weekly filter change or more frequently as required by dust loading	Quarterly composites of weekly samples	Nat-Uranium, Ra-226, Th-230, Pb-210
	1	At or close to nearest residence(s) ^a	Continuous	Weekly filter change or more frequently as required by dust loading	Quarterly composites of weekly samples	Nat-Uranium, Ra-226, Th-230, Pb-210
	1	Control or background location West of MEA License Boundary ^a	Continuous	Weekly filter change or more frequently as required by dust loading	Quarterly composites of weekly samples	Nat-Uranium, Ra-226, Th-230, Pb-210
Radon Gas	6	Same locations as air particulates ^a	Continuous using RadTrak type DRNF	Continuous	Continuous	Rn-222
WATER						
Groundwater	One each	Wells (within license boundary and 2 km radius ^c <ul style="list-style-type: none"> • Private wells • MEA Brule wells • MEA Ore Zone wells 	Grab	Quarterly	Quarterly	Dissolved and suspended Nat-Uranium, Ra-226, Th-230, Pb-210, Po-210
Surface Water	7 sampling points along the two ephemeral drainages	Surface waters passing through license area (subject to available flow) ^{b, d}	Grab	Quarterly	Quarterly	Suspended and dissolved Nat-Uranium, Ra-226, Th-230, Pb-210, Po-210

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Type of Sample	Sample Collection			Sample Analysis		
	Number	Location	Method	Frequency	Frequency	Type of Analysis
VEGETATION	None <u>TDB</u> ^c	<u>N/A Gardens</u>	<u>N/A Grab</u>	<u>N/A Annually</u>	<u>N/A Annually</u>	<u>Nat-Uranium, Ra-226, Th-230, Pb-210, Po-210 N/A</u>
FOOD	None	N/A	N/A	N/A	N/A	N/A
FISH	1	Box Butte Reservoir	Grab	Semi-Annually	Twice	Ra-226, Pb-210
SOIL AND SEDIMENT						
Soil	6	At same locations used for collection of air particulate samples ^a	Grab (0 to 5 cm)	Annually	Annually	Nat-Uranium, Ra-226, Pb-210
Sediment	7 sampling points along each of two ephemeral drainages (total of 7 samples)	Same as surface water sample locations ^{b, d}	Grab (minimum of 3 samples for each sample composite)	Annually	Annually	Nat-Uranium, Ra-226, Th-230, Pb-210
DIRECT RADIATION						
Continuous	One each	Air monitoring stations ^a	Dosimeter	Continuous	Quarterly	Gamma exposure rate, using Sodium Iodide scintillometer

^a Figure 2.9-2

^b Figure 2.7-4

^c Figures 2.2-4 and 2.9-3

^d upstream and downstream

^e The number of gardens planted within a 3 km area around the license boundary

N/A = not applicable

MEA = Marsland Expansion Area