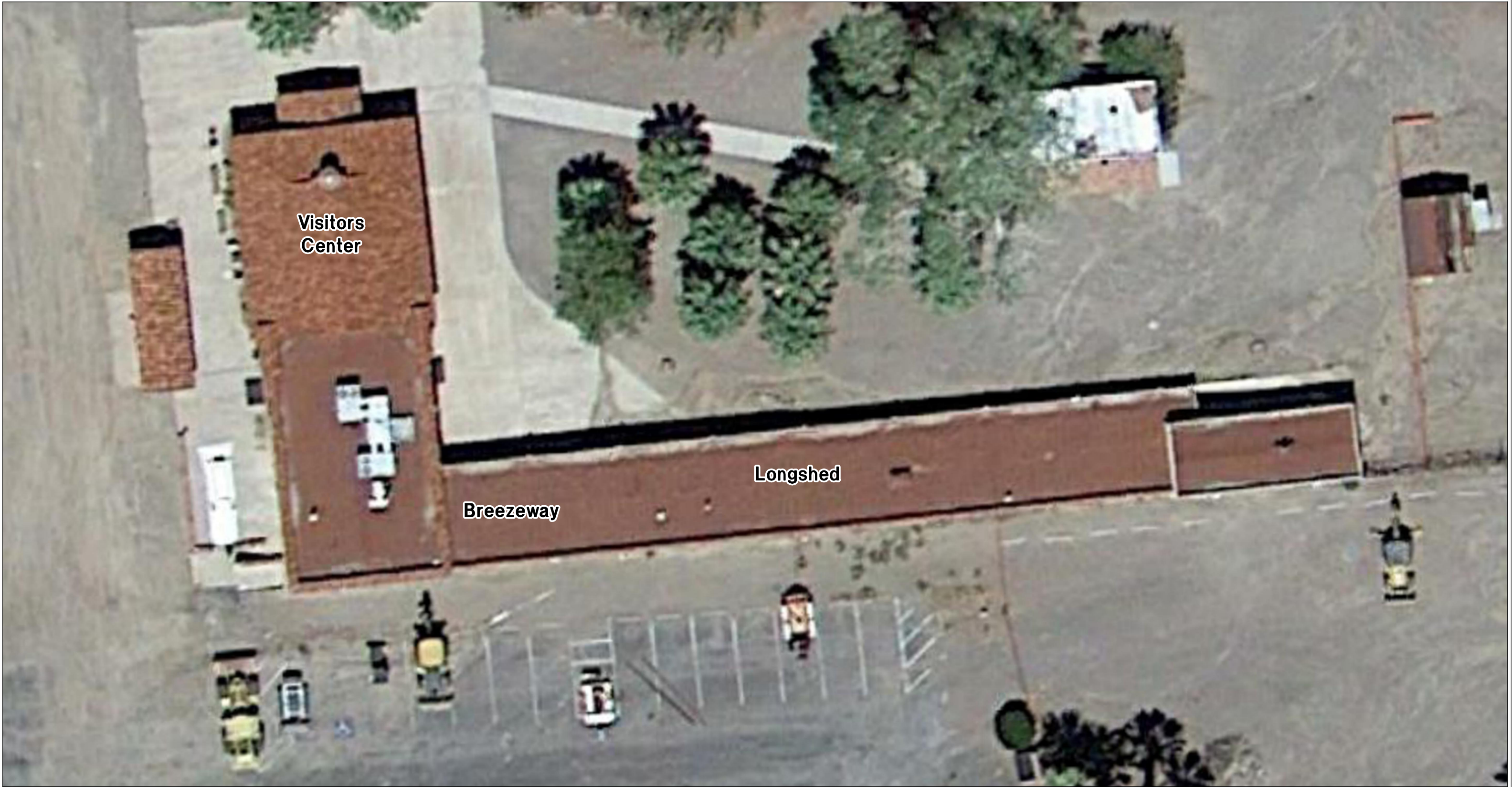


ATTACHMENT 1

SITE MAP



Landmark Environmental, Inc.
7881 Shaffer Parkway, Littleton, CO 80127

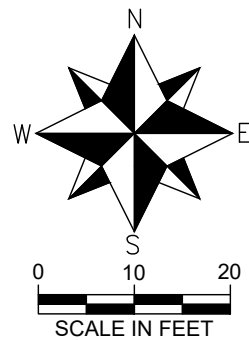


Figure 1
Site Map

Scotty's Castle Historical Site
Death Valley National Park
Death Valley, California

Project #:	21054.001.001	Date:	08/19/2021
Drafted By:	F.R.		

ATTACHMENT 2

CLEANUP GOALS

DEVA - Scotty's Castle Historic District Burned Structures

Death Valley National Park - Scotty's Castle Historic District	Units	ECOLOGICAL RISK VALUES ¹					Site Background Threshold Values ³	DRAFT CLEANUP GOALS ⁴	NOTES
		Plants	Invertebrates	Mammals (Deer Mouse)	Birds (Robin)	Humans ² (residential)			
Antimony	mg/kg	25	247	7.3	NA	31	ND (2)	7.3	Protective of deer mouse
Arsenic	mg/kg	40	22	40	66	0.68	9.5	9.5	Background value
Barium	mg/kg	169	1028	3957	1000	15000	146	146	Background value
Beryllium	mg/kg	8	127	177	NA	160	0.9	0.9	Background value
Cadmium	mg/kg	72	326	1.8	1.3	71	0.4	0.4	Background value
Chromium (total)	mg/kg	NA	NA	348	57	NA	16.1	16.1	Background value
Cobalt	mg/kg	41	NA	633	143	23	12.3	12.3	Background value
Copper	mg/kg	185	206	79	35	3100	17.6	17.6	Background value
Lead ⁵	mg/kg	262	3779	166	20	80	16.7	16.7	Background value
Mercury	mg/kg	47	0.16	10	0.07	11	0.11	0.11	Background value
Molybdenum	mg/kg	NA	NA	NA	51	390	0.95	0.95	Background value
Nickel ⁶	mg/kg	101	603	28	68	1550	29	29	Background value
Selenium	mg/kg	1.2	13	1	1.2	390	ND (2)	2	Detection limit
Silver	mg/kg	1252	NA	76	13	390	ND (1)	1	Detection limit
Thallium	mg/kg	0.16	NA	2.3	17	0.78	ND (2)	2	Detection limit
Vanadium	mg/kg	69	NA	686	8	390	45	45	Background value
Zinc	mg/kg	360	334	538	134	23000	134	134	Background value
Dioxins ⁷	mg/kg	NA	0.0088	NA	NA	0.00011	NNO	0.00011	Protective of humans
PCBs (sum) ⁷	mg/kg	40	0.33	2	0.25	0.35	NNO	0.25	Protective of birds
PCP	mg/kg	16	68	5	2	1.7	NNO	1.7	Protective of humans

NA = not available

ND = not detected (detection limit)

NNO = not naturally occurring

¹ Unless otherwise noted, all ecological risk values are the geometric mean between a no observed adverse effect level (NOAEL) and a low observed adverse effect level (LOAEL). Source: Los Alamos National Laboratory EcoRisk Database, updated 2017, <https://www.lanl.gov/environment/protection/eco-risk-assessment.php>

² All human residential values are from EPA's Regional Screening Levels, updated May 2021: <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>

³ Values from *Removal Site Evaluation: Hazardous Ash and Associated Burned Structure Debris, Garage/Visitor's Center at the Death Valley Scotty's Castle Historic District* dated August 16, 2021.

⁴ Draft cleanup goal rationale: Generally, cleanup to lowest protective value without going below background. For selenium and thallium, the detection limit is not low enough to detect risk values, so unless a lower detection limit can be achieved, the detection limit of 2 mg/kg is the only option.

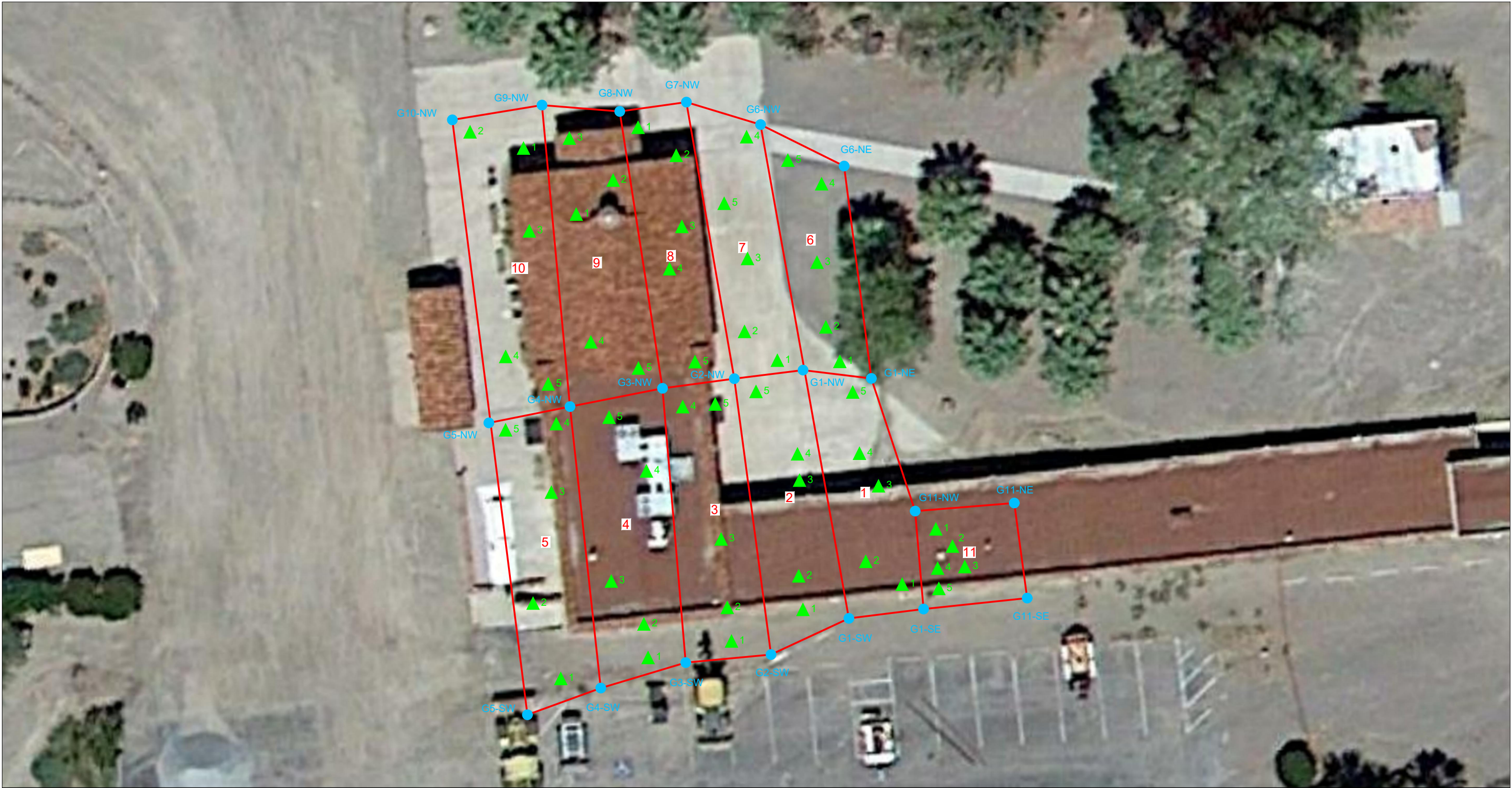
⁵ Residential lead value of 80 mg/kg is required by Cal EPA: Cal/EPA OEHHA Residential California Human Health Lead Screening Level which was finalized in September 2009 <https://oehha.ca.gov/media/downloads/crnrl/leadchsl091709.pdf>

⁶ Residential lead value of nickel was calculated for Nickle Soluble Salts using the EPA RSL calculator in August 2021: epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

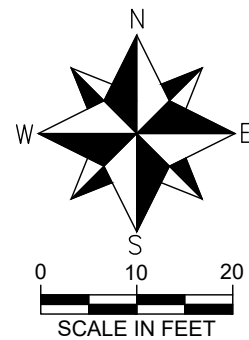
⁷ Dioxin invertebrate value and PCB plant and invertebrate values obtained from EPA Region 4: r4_era_guidance_document_draft_final_8-25-2015

ATTACHMENT 3

IMPACTED MATERIAL, GRID, AND ALIQUOT SAMPLE LOCATIONS



Landmark Environmental, Inc.
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Legend

- Sample Grid and Corner Identifier
- Fire Debris Aliquot Sampling Location

Figure 2
Impacted Material
Grid and Aliquot Sample Locations
Scotty's Castle Historical Site
Death Valley National Park
Death Valley, California

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Drafted By:	J.G.M.		