TABLE G-1: ENVIRONMENTAL FOOTPRINT INVENTORY DATA SOURCES, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Parameter	Data Sources
Personnel Transportation	Personnel transportation estimates are compiled by the Trust, Ramboll, Tetra Tech, and Envirogen for tasks associated with the Groundwater Monitoring Program and the Groundwater Extraction and Treatment System (GWETS).
	Flight distances are estimated using the approximate distance from the starting location city/airport to Las Vegas airport. Driving distances are estimated using the approximate driving distance reported by Google Maps.
	Transportation associated with one-time events (e.g. system construction) is not included.
On-site Equipment Usage	Envirogen's gasoline usage for on-site vehicles is compiled from available vehicle analysis reports.
	Tetra Tech's and Ramboll's gasoline usage for on-site vehicles is estimated using approximate mileage amounts provided by field personnel and an assumed fuel efficiency determined based on type of vehicle used and type of vehicle usage.
	Estimates for fuel usage for other on-site equipment are provided by Envirogen.
	Equipment usage associated with one-time events (e.g. system construction) is not included.
Electricity Usage	Electricity usage is compiled from invoices received from the Colorado River Commission of Nevada and NV Energy.
	Fuel mix information for grid electricity is available from the Colorado River Commission of Nevada and NV Energy websites.
Materials Usage and Transportation	Materials usage information is provided by Envirogen personnel based on electronic outputs from their process control systems.
	All information regarding specifications and formulations is obtained from Safety Data Sheets maintained at the Site.
	Information regarding mode of transportation to the Site and location of manufacture is provided by Envirogen. Fuel types are assumed based on mode of transportation. Distances traveled are estimated based on the approximate distance between the manufacturing location and the Site.
	Materials usage and transportation associated with one-time events (e.g. system construction) is not included.
Waste Disposal and Transportation	Waste disposal and transportation information is compiled from invoices provided by Envirogen and Tetra Tech containing information regarding waste hauled off-site. Invoice line items are counted to determine the number of pickup trips. Distances traveled are estimated based on the distance between the disposal location and the Site.
	Waste disposal and transportation associated with one-time events (e.g. system closure) is listed in the table but not included for the footprint calculation.
Water Usage	Surface water usage is determined based on totalizer readings from the Site's main water supply line and subtracting totalizer readings associated with usage by Tronox (not part of Site operations). For periods when readings from the Site's main water supply line were not available, surface water usage was estimated by summing readings from individual point discharge locations.
	Extracted groundwater is calculated from the GWETS field sheet maintained by Tetra Tech and Envirogen.
	GW-11 evaporation is estimated based on GW-11 stage area estimates provided by Envirogen and historic pan evaporation data (Shevenell 1996).
Off-site Laboratory Analyses	The total number of analyses conducted is compiled based on information available from the Site's Analytical Database maintained by Ramboll and only includes sampling related to GWETS operations or the groundwater monitoring program. Quality Assurance (QA) and Quality Control (QC) samples, including equipment blanks, field blanks, trip blanks, and field duplicates, are also included. Pricing information for each analytical method is estimated based on unit prices provided by TestAmerica.

RAMBOLL

TABLE G-2: PERSONNEL TRANSPORTATION, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Personnel Location/ Activities	Number of Personnel	Estimated Roundtrips to Site per Person	Roundtrip Distance to Site (miles)	Mode of Transportation	Transport Fuel Type	Notes
GWETS Activities						
GWETS Operations and Maintenance	2	168	30	Car	Gasoline	[A]
	1	84	30	Car	Gasoline	
	2	168	30	Light-Duty Truck	Gasoline	
	2	240	20	Light-Duty Truck	Gasoline	
	2	300	20	Car	Gasoline	
	1	150	20	Car	Gasoline	
	3	300	20	Light-Duty Truck	Gasoline	
	1	150	20	Light-Duty Truck	Gasoline	
Extraction Well and Conveyance Maintenance	1	240	30	Van	Gasoline	
	1	240	30	Heavy-Duty Truck	Gasoline	
Groundwater Monitoring	1	240	30	Van	Gasoline	
General Site Management	1	240	30	Van	Gasoline	
	1	240	30	Heavy-Duty Truck	Gasoline	
IX Monitoring and Management	1	240	30	Heavy-Duty Truck	Gasoline	
Director of Remediation	1	60	10	Car	Gasoline	[B]
Chicago	1	4	3,020	Flight	NA	[B]
Denver	1	3	1,250	Flight	NA	[C]
	1	1				
	1	2				
Las Vegas Area	1	260	20	Light-Duty Truck	Gasoline	[C]
	1	12	20	Car	Gasoline	[C]
Salt Lake City	1	7	730	Flight	NA	[C]
San Francisco Bay Area	1	1	820	Flight	NA	[D]
GWM Activities						
Austin	1	1	2,160	Flight	NA	[C]
Denver	3	1	1,250	Flight	NA	[C]
Las Vegas Area	1	43	20	Car	Gasoline	[C]
	1	39				
	1	11				
Orange County	1	3	540	Flight	NA	[C]
	1	1				
	1	1				
Philadelphia	1	1	2,500	Flight	NA	[D]
Phoenix	1	2	510	Flight	NA	[C]
	1	4				[D]
Portland	1	3	1520	Flight	NA	[C]
Sacramento	1	1	790	Flight	NA	[C]
San Francisco Bay Area	1	1	820	Flight	NA	[D]

Notes

A) Travel estimates were provided by Envirogen.

B) Travel estimates were provided by the Nevada Environmental Response Trust.

C) Travel estimates were provided by Tetra Tech.

D) Travel estimates were provided by Ramboll.

E) Average roundtrip distances are rounded to the nearest 10 miles.

F) For each flight, a 30-mile car trip is assumed to account for roundtrip transportation from the airport to the Site.

NA = Not Applicable

TABLE G-3: ON-SITE EQUIPMENT USAGE, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

On-site Equipment	Fuel Quantity (gallons)	Fuel Type	Notes
GWETS Activities			
Combined Truck Use	2,410	Gasoline	[A]
Back-up Air Compressor	20	Diesel	[B]
Pressure Washer	48	Gasoline	[C]
GWM Activities			
Combined Truck Use	260	Gasoline	[A]

Notes

A) Gasoline usage was estimated based on vehicle usage information provided by Envirogen, Tetra Tech, and Ramboll personnel. Estimates shown are rounded to the nearest 10 gallons.

B) Personnel with Envirogen indicated approximately 20 gallons of diesel are used per year for operation of the back up air compressor at the groundwater treatment plant (GWTP).

C) Personnel with Envirogen indicated approximately 4 gallons of gasoline are used per month for operation of the pressure washer.

TABLE G-4: ELECTRICITY USAGE, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Grid Electricity	Kilowatt-hours	Energy Source	Notes
Treatment Plant	5,322,554	Colorado River Commission of NV	[A]
Extraction Wells and Lift Stations	1,513,829	NV Energy	[B]
Total Electricity Used	**6,836,383**	-	-

Notes

A) The Colorado River Commission of Nevada is responsible for acquiring and managing Nevada's water and hydropower resources from the Colorado River. Electricity provided by the Colorado River Commission of Nevada to the NERT Site is generated from hydropower resources.

B) NV Energy is listed as the electricity provider on invoices for the off-site extraction wells and pump stations. Information regarding the energy sources of electricity provided is available from the following document: https://www.nvenergy.com/publish/content/dam/nvenergy/bill_inserts/2019/07_jul/power-content-insert-south-2019-06_1_26.pdf

TABLE G-5: MATERIALS USAGE AND TRANSPORTATION, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Material Type	Quantity	Units	Location of Manufacture	One-way Distance to Site (miles)	Mode of Transportation	Specific Gravity	Density (lbs/gal)
Ferrous sulfate ($FeSO_4$)	12,000	gal	South Gate, CA	250	Truck	1.203	10.02
Polymer ICS-2528 *(Discontinued)*	360	gal	Riceboro, GA	2,200	Truck	1.0-1.1	-
Defoamer XFO-10S FG *(New)*	50	gal	Santa Fe Springs, CA	250	Truck	1.00	8.35
Dry polymer dewatering ICS-6545 *(Discontinued)*	1,400	lbs	Riceboro, GA	2,200	Truck	-	-
DAF polymer ICS-2835B *(Discontinued)*	5,500	gal	Riceboro, GA	2,200	Truck	1.02-1.03	8.5-8.6
DAF polymer BF CP 2661 *(New)*	610	gal	Greensboro, South Carolina	2,250	Truck	1.03	8.60
Polymer Superfloc 4818 RS GWTP *(New)*	100	lbs	Madison, Alabama	1,750	Truck	1.072	8.95
Lime (hydrated lime)	7,200	lbs	Sainte Genevieve, MO	1,600	Truck	2.2	-
Ethanol (190 proof)	110,000	gal	Peoria, IL	1,950 250	Train Truck	0.817	-
Phosphoric acid (H_3PO_4)	6,300	gal	Pocatello, ID	600	Truck	1.20-1.26	10.0-10.5
pH adjustment (NaOH)	34,000	gal	Plaquemine, LA	1,650	Train/Truck	1.33	11.1
Micronutrients (VWNA micronutrient)	11,000	gal	South Gate, CA	250	Truck	1.1075	9.24
Hydrogen peroxide (H_2O_2)	17,000	gal	Longview, WA Woodstock, TN	1,050 1,600	Truck	1.1327	9.44
Ferric chloride ($FeCl_3$) *(Discontinued)*	5,700	gal	Mojave, CA	200	Truck	-	11.8-12.0
Aluminum Chlorohydrate (ACH) *(New)*	4,000	gal	Phoeniz, AZ	300	Truck	-	11.1 - 11.3
Ion exchange (IX) resin	600	cubic feet	India	10,400 2,550	Boat Truck	1.0-1.15	-
Granular activated carbon (GAC)	40,000	lbs	Pittsburg, PA	2,200	Truck	0.4-0.7	3.3-5.8

Notes

gal = gallons lbs = pounds

A) Materials usage information is provided by Envirogen personnel based on electronic outputs from their process control systems and inventory ordering information. Envirogen reported all materials are refined and none of the materials are from recycled sources.

B) Information regarding location of manufacture and mode of transportation is provided by Envirogen personnel. Approximate one-way distance to the Site is estimated using Google Maps rounded to the nearest 50 miles.

C) Specific gravity and density information for each material is obtained from Safety Data Sheets maintained at the Site.

D) According to Envirogen personnel, the GAC is tested annually for potential contaminant breakthrough and is replaced only if breakthrough is observed. Approximately One hundred percent of the GAC is regenerated and reused.

E) To avoid exceeding the limited number of chemicals that can be included within the SEFA workbooks, we have combined the use of comparable substances DAF polymer ICS-2835B and DAF polymer BF CP 2661, as they have similar chemical properties and they are coming from similar distances.

TABLE G-6: WASTE DISPOSAL AND TRANSPORTATION, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Waste Generated	Notes	Quantity	Units	Number of Trips	Treatment/ Disposal Site	One-way Distance to Site (miles)	Mode of Transportation
Fluidized Bed Reactor (FBR) Sludge	A	808	tons	96	Apex Industrial Solid Landfill	30	Truck
Groundwater Water Treatment Plant (GWTP) Sludge		23	tons	3			
Ion Exchange (IX) Resin		18	tons	4			
Spent Granular Activated Carbon (GAC)		11	tons	1			
Filters/filtrate material	B	4	drums	1			
UXO inspected material		312	CY	13			
Pond residuals		24	CY	4			
Geotextiles		42	CY	3			
Sand and gravel		542	CY	36			
Concrete debris and soil		458	CY	31			
Berm material		9870	CY	489	US Ecology	120	
Hazardous porous material		13	drums	2			

Notes

CY = cubic yard

drums = 55-gallon drum

A) Information regarding FBR sludge, GWTP sludge, IX resin and Spent GAC hauled off-site was compiled from invoices provided by Envirogen personnel.

B) Information regarding wastes from the AP-5 pond treatment (filters/filtrate material) and AP-5 pond closure (all others) was provided by Tetra Tech. These wastes were excluded from the footprint calculations, as they were associated with a one-time event. UXO inspected material includes non-porous liners, transfer pipes, and other miscellaneous small volume items.

TABLE G-7: WATER USAGE, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Water Source	Quantity	Unit	Use/Fate
Extracted Groundwater	669	MGal	Treat and discharge to Las Vegas Wash
Lake Mead	25.6	MGal	See Note A
GW-11 Evaporation	37.8	MGal	Evaporation - See Note B

Notes

MGal = million gallons

A) Lake Mead water is used for granular activated carbon (GAC) backwash events, which occur on average three times per month. Lake Mead water is also used for Fluidized Bed Reactor (FBR) polymer additions, groundwater treatment plant polymer additions, washing down equipment in the treatment plant, sanitary water, seal water for FBR pumps, AP Area flushing, and AP-5 solids removal and treatment (which ended in the second half of 2018). After use, Lake Mead water is discharged to GW-11 and then eventually treated and discharged to Las Vegas Wash, except for sanitary water which is discharged to an on-site septic system.

B) GW-11 evaporation was estimated using information contained within the GW-11 Pond Volume Model maintained by Envirogen. The GW-11 Pond Volume Model includes measured pond water levels (collected approximately twice per month) and corresponding calculated pond volume and stage area estimates. Stage area estimates and historical pan evaporation data (Shevenell 1996) are used to calculate estimated evaporation during the reporting period. Details of these calculations are included in the SEFA input workbook.

TABLE G-8: OFF-SITE LABORATORY ANALYSES, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Analyte	Analytic Method	Matrix	Estimated Analytical Unit Price	Number of Analyses
GWETS Laboratory Analyses				
2,3,7,8-Tetrachlorodibenzofuran	EPA 1613B	Water	$425	4
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 1613B	Water	$325	4
HEM Oil/Grease	EPA 1664	Water	$35	4
Antimony	EPA 200.7	Water	$8	4
Arsenic	EPA 200.7	Water	$8	8
Beryllium	EPA 200.7	Water	$8	4
Boron	EPA 200.7	Water	$8	8
Cadmium	EPA 200.7	Water	$8	4
Calcium	EPA 200.7	Water	$8	3
Chromium (total)	EPA 200.7	Water	$25	239
Copper	EPA 200.7	Water	$8	4
Iron	EPA 200.7	Water	$8	112
Lead	EPA 200.7	Water	$8	4
Manganese	EPA 200.7	Water	$8	66
Molybdenum	EPA 200.7	Water	$8	12
Nickel	EPA 200.7	Water	$8	4
Selenium	EPA 200.7	Water	$8	20
Silver	EPA 200.7	Water	$8	4
Thallium	EPA 200.7	Water	$8	4
Vanadium	EPA 200.7	Water	$8	12
Zinc	EPA 200.7	Water	$8	4
Uranium-238	EPA 200.8	Water	$25	12
Chromium VI	EPA 218.6	Water	$50	329
Mercury	EPA 245.1	Water	$22	4
Chloride	EPA 300	Water	$8	7
Nitrate	EPA 300	Water	$8	162
Nitrate Nitrite	EPA 300	Water	$0	3
Nitrite	EPA 300	Water	$8	110
Sulfate	EPA 300	Water	$8	15
Chlorate	EPA 300.1	Water	$12	27
Perchlorate	EPA 314.0	Water	$25	447
Ammonia (as N)	EPA 350.1	Water	$20	91
Total Kjeldahl Nitrogen	EPA 351.2	Water	$25	52
Phosphorus (total)	EPA 365.3	Water	$22	68
Chromium (total)	EPA 6010B	Solid	$25	1
Chromium (total)	EPA 6010	Water	$25	1
Metals	EPA 6010	Water	$25	1
Metals	EPA 6010R	Leachate	$90	3
Volume and Weight, TCLP Leachate	EPA 6010R	Leachate	$40	2

TABLE G-8: OFF-SITE LABORATORY ANALYSES, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Analyte	Analytic Method	Matrix	Estimated Analytical Unit Price	Number of Analyses
Pesticides and PCBs	EPA 608	Water	$120	4
PCBs (Aroclors)	EPA 608	Water	$60	4
Volatile Organics	EPA 624	Water	$45	8
Semivolatile Organics	EPA 625	Water	$125	4
Mercury, weight, volume (TCLP Leachate)	EPA 7470R	Leachate	$62	1
Mercury, weight, volume (TCLP Leachate)	EPA 7471R	Leachate	$62	1
Mercury	EPA 7471	Water	$22	1
Volatile Organics	EPA 8260R	Leachate	$50	2
Free Liquid	EPA 9095	Solid	$18	1
Free Liquid	EPA 9095(B)	Water	$18	2
Field pH	FIELD SAMPLING	Water	$8	63
Total Inorganic Nitrogen-Calc	NTOTAL	Water	$5	110
Apparent Color	SM 2120	Water	$10	52
pH	SM 2120	Water	$8	52
Bicarbonate as HCO3, Carbonate as CO3, Total Alkalinity as CaCO3	SM 2320	Water	$11	12
Dissolved Solids (total)	SM 2540C	Water	$10	21
Suspended Solids (total)	SM 2540D	Water	$10	55
Cyanide (total)	SM 4500 CN-E	Water	$33	4
pH	SM 4500 H+	Water	$8	55
Ammonia (as N)	SM 4500 NH3-D	Water	$20	61
Dissolved Oxygen	SM 4500 O-G	Water	$10	52
Sulfide (total)	SM 4500 S2-D	Water	$23	12
Carbonaceous Biochemical Oxygen Demand	SM 5210B	Water	$30	52
Carbon	SM 5310B	Water	$30	1
Estimated Cost of Analyses				**$56,001**
GWM Laboratory Analyses				
Boron	EPA 200.7	Water	$8	12
Chromium (total)	EPA 200.7	Water	$25	1139
Iron	EPA 200.7	Water	$8	12
Manganese	EPA 200.7	Water	$8	12
Selenium	EPA 200.7	Water	$8	4
Sodium	EPA 200.7	Water	$8	8
Chromium VI	EPA 218.6	Water	$50	808
Chloride	EPA 300	Water	$8	12
Nitrate	EPA 300	Water	$8	1141
Nitrite	EPA 300	Water	$8	20
Sulfate	EPA 300	Water	$8	8
Chlorate	EPA 300.1	Water	$12	1541
Perchlorate	EPA 314.0	Water	$25	1564

TABLE G-8: OFF-SITE LABORATORY ANALYSES, JULY 2018 - JUNE 2019

Nevada Environmental Response Trust Site

Henderson, Nevada

Analyte	Analytic Method	Matrix	Estimated Analytical Unit Price	Number of Analyses
Ammonia (as N)	EPA 350.1	Water	$20	4
Phenolics, Recoverable (total)	EPA 420.4	Water	$35	8
Volatile Organic Compounds (VOCs)	EPA 8260	Water	$45	268
1,2,3-Trichloropropane and 1,4-Dioxane	EPA 8260B SIM	Water	$80	269
Organic Halides (total)	EPA 9020	Water	$75	8
Field pH	FIELD SAMPLING	Water	$8	755
Total Inorganic Nitrogen-Calc	NTOTAL	Water	$5	4
Conductivity	SM 2510	Water	$10	8
Dissolved Solids (total)	SM 2540C	Water	$10	1563
Total Organic Carbon	SM 5310C	Water	$30	8
Estimated Cost of Analyses				**$192,849**

Notes

A) Analytical costs were estimated based on TestAmerica Laboratories Inc. 2017 Unit Price List for NERT Projects included in the Master Project Subcontract Agreement between Ramboll and TestAmerica and correspondence with TestAmerica. Laboratory method names, matrix designations, and total number of analyses conducted were compiled from laboratory EDDs maintained in the NERT project database.