FINAL

VOLUME II: APPENDICES

FEASIBILITY STUDY FOR THE ST. LOUIS NORTH COUNTY SITE

ST. LOUIS, MISSOURI

May 1, 2003

U.S. Army Corps of Engineers
St. Louis District Office
Formerly Utilized Sites Remedial Action Program

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May 1, 2003

prepared by
U.S. Army Corps of Engineers, St. Louis District Office, Formerly Utilized Sites Remedial Action Program

with assistance from
Science Applications International Corporation
under Contract No. DACW43-00-D-0515, Task Order 0005

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APPENDIX A

ARARS IDENTIFIED BY THE STATE OF MISSOURI

SEP 21 REC'D

STATE OF MISSOURI

Mel Carnahan, Governor • Stephen M. Mahfood, Director

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

September 17, 1998

Ms. Sharon Cotner, Project Manager
Formerly Utilized Sites Remedial Action Project
Department of the Army
St. Louis District, Corps of Engineers
9170 Latty Avenue
Berkeley, MO 63134

RE: Request for ARARs and TBCs for the North County Record of Decision

Dear Ms. Cotner:

The Federal Facilities Section is enclosing a list of Applicable or Relevant and Appropriate Requirements (ARARs) and To Be Considered (TBCs) guidances for the North County Record of Decision. We believe that the list covers most of the pertinent laws and regulations. If other ARAR's are identified, we will forward those to you.

Other TBC's that are not listed, but may be added, are establishment of cleanup levels, radiological and chemical, and risk assessments associated with the remediation. These issues will need to be coordinated in conjunction with this office and the Missouri Department of Health.

Thank you for accepting these Record of Decision considerations for the North County sites. If you have any questions, or need further information, you may contact Mr. Scott Honig of my staff at (573) 751-3087.

Sincerely,

HAZARDOUS WASTE PROGRAM

Larry V. Erickson

Larry V. Erickson, DOE Unit Chief
Federal Facilities Section

LE:shg

Enclosure

c: Dan Wall, EPA

DRAFT LIST OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

CITATION	TITLE	APPLICABILITY
USEPA OSWER No. 9200.4-18 "EPA policy on using 40 CFR Part 192 for CERCLA cleanup criteria at radioactive sites, including radium and thorium." USEPA OSWER No. 9200.4-23 "EPA policy for ARAR determination for radioactive sites."	EPA policy directives for CERCLA Sites with Radioactive Contamination.	SLAPS/HISS are CERCLA sites. Use policies to develop cleanup levels for SLAPS/HISS.
10 CSR 20-7.031(5)(D)	Missouri Effluent Regulations, Groundwater (1996)	Groundwater contamination has been documented so it will have to be addressed to meet the requirements of this regulation.
16 USC § 470 40 CFR § 6.301(b) 36 CFR Part 800	National Historic Preservation Act	Act establishes the appropriate procedures for preservation of National Historic Sites.
Sections 253.408 to 253.412 of the Revised Statutes of Missouri (RSMo)	State Historic Preservation Act	Act establishes the appropriate procedures for preservation of State Historic Sites if necessary.
16 USC § 469 40 CFR § 6.301(c)	Archeological and Historical Preservation Act	Act establishes the appropriate procedures for preservation of National Historic Sites if necessary.
16 USC § 470(a)	Archeological Resources Protection Act	Act establishes the appropriate procedures for protection of archeological resources if necessary.
25 USC § § 3001-3013	Native American Graves Protection and Repatriation Act	Act establishes the appropriate procedures for protection of native American graves if necessary.
Executive Order N. 11988	Floodplain Management and Protection	Portions of SLAPS and HISS are within a floodplain of Coldwater Creek.

CITATION	TITLE	APPLICABILITY
40 CFR 6.302(a) and (b), Appendix A	Floodplain Management and Protection	Portions of SLAPS and HISS are within a floodplain of Coldwater Creek.
40 CFR Part 230 and 231 33 CFR 320-330	Dredge or Fill Requirements (Section 404)	Any work within the waters of U.S. or areas designated, as waters of U.S. need to follow the appropriate requirements. Could be applicable to Coldwater Creek.
COE Engineer Regulation (ER) 1165-2-26, March 30, 1984	COE Implementation of Executive Order 11988 on Flood Plain Management	Portions of SLAPS and HISS are within a floodplain of Coldwater Creek.
Executive Order No. 82-19	Governor's Executive Order, Flood plains	Portions of SLAPS and HISS are within a floodplain of Coldwater Creek.
40 CFR Part 61 Subpart I	Clean Air Act - National Emission Standards for Radionuclide Emissions from Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities Not Covered by Subpart H.	Establishes limits of radionuclides, which can be emitted to ambient air from facilities owned or operated by any Federal agency other than the Department of Energy.
40 CFR Part 61 Subpart Q	Clean Air Act - National Emission Standards for Radon Emissions from Department of Energy Facilities	Regulation is specific to Department of Energy Facilities only but does establish radon limits for radium containing material. This would apply to any piles on HISS or SLAPS. Establish safe environment for workers and public.

CITATION	TITLE	APPLICABILITY
USEPA, Office of Groundwater Protection, December 1986	Guidelines for Groundwater Classification under the EPA Groundwater Protection Strategy	Establishes the guidelines for classifying the groundwater beneath SLAPS/HISS. Also establish requirements of either monitoring or cleanup levels for the groundwater.
33 CFR Part 230	Procedures for Implementing NEPA: Environmental Assessments and Categorical Exclusions	NPL sites under CERCLA. Also USACE is required to follow the **National Environmental Protection Act**
40 CFR Part 262, as incorporated by reference in 10 CSR 25-5-262	RCRA Generator Requirements	There is a possibility of the generation of mixed or hazardous waste.
40 CFR Parts 260 and 261, as incorporated by reference in 10 CSR 25-4.261	RCRA Hazardous Waste Characterization	Requirements of characterization of Hazardous waste.
40 CFR 268.7 and 268.32, as incorporated by reference in 10 CSR 25.7.268	RCRA Land Disposal Restrictions	Establishes land disposal restrictions for hazardous waste or mixed waste.
10 CFR Part 40 Subpart A	Criteria for Disposal of Wastes from Processing Source Material	NRC requirements for disposal of radioactive waste. Waste from SLAPS/HISS will be disposed of at a Licensed NRC facility. USACE is responsible for the appropriate disposal of the waste from SLAPS/HISS.
10 CFR Part 61 Subpart C and Subpart D	NRC Licensing Requirements for Land Disposal of Radioactive Waste: Performance Objectives (Subpart C) and Technical Requirements for Land Disposal Facilities (Subpart D)	Envirocare or other disposal site will have to meet these requirements. USACE is responsible for the appropriate disposal of the waste from SLAPS/HISS.

CITATION	TITLE	APPLICABILITY
10 CSR 10-5.090	Restriction of Emission of Visible Air Contaminants	Used to control particulate matter emissions from the remediation activities.
10 CSR 10-6.170	Restriction of Particulate Matter to the Ambient Air Beyond the Premise of Origin	Used to control particulate matter emissions from the remediation activities.
10 CSR 20-7.031(4)(I) 10 CSR 20-7.031(5) and Table A	Missouri Water Quality Standards	Regulation establishes a water quality standard for contaminates of concern.
10 CSR 20-6.200	Storm Water Regulations: Surface Runoff and Erosion Control	Implementation of appropriate best management practices.
10 CSR 25-4.261	Methods for Identifying Hazardous Waste	Test procedures, etc. which will identify if the remediation was is hazardous and regulated under RCRA.
10 CSR 25-5.262	Standards Applicable to Generators of Hazardous Waste	If the remediation waste is classified as hazardous than there are specific requirement which must be followed by USACE.
10 CSR 25-7.268	Land Disposal Restrictions	There are land disposal restrictions, which will apply if the remediation waste is characterized as hazardous.
10 CSR 80-3.010(3)	State Sanitary Landfill Design and Operation: Disposal of Low-Level Radioactive Material in Missouri	Low-Level radioactive material can't be disposed of in Missouri Sanitary Landfills.

CITATION	TITLE	APPLICABILITY
10 CSR 80-3.010(4)	State Sanitary Landfill Design and Operation: Sanitary Landfill Siting Requirements	Necessary design requirements if one of the alternative to be proposed in the Feasibility Study is on-site disposal.
10 CSR 80-3.010(17)	State Sanitary Landfill Design and Operation: Sanitary Landfill Cover Requirements	Necessary design requirements if one of the alternative to be proposed in the Feasibility Study is on-site disposal.
29 CFR Part 1910	OSHA - General Industry Standards	Standard Health and Safety requirements for remediation activities. Either these requirements or appropriate USACE requirements must be documented.
29 CFR Part 1926	OSHA - Safety and Health Standards	Standard Health and Safety requirements for remediation activities. Either these requirements or appropriate USACE requirements must be documented.
29 CFR Part 1904	OSHA - Recordkeeping, Reporting, and Related Regulations	Standard Health and Safety requirements for remediation activities. Either these requirements or appropriate USACE requirements must be documented.
49 CFR Part 171	Hazardous Material Transportation Regulations (HMTR)	Waste will be shipped from St. Louis to Utah or other disposal site.
49 CFR Part 172	HMTR	Waste will be shipped from St. Louis to Utah or other disposal site.

CITATION	TITLE	APPLICABILITY
COE Engineer Regulation (ER) 385-1-80, May 30, 1997	COE Ionizing Radiation Protection	Dealing with radiation and radiological contamination at SLAPS/HISS.
COE Engineer Regulation (ER) 385-1-92, March 18, 1994	COE Safety and Occupational Health Document Requirements for Hazardous, Toxic, and Radioactive Waster (HTRW) and Ordnance and Explosive Waste (OEW) Activities	Possibility of other contamination on-site besides radioactive contamination.
19 CSR 20-10.040	Maximum Permissible Exposure Limits for Radiation	Establishes limits for radon emissions.
29 CFR 1910: 1910.1000 Subpart Z, Toxic and Hazardous Substances	Occupational Safety and Health Administration Standards	Health and Safety required training for remediation workers, etc.
10 CFR 835	Occupational Radiation Protection	Establishes exposure limits to workers.
19 CSR 20-10.050	Missouri Radiation Regulations; Protection Against Ionizing Radiation Personnel Monitoring and Radiation Surveys	Establishes procedures for personnel monitoring and radiation surveys.
29 CFR 1910; 1910.96 Subpart G, Ionizing Radiation	Occupational Safety and Health Administration Standards Occupational Health and Environmental Control	Regulations which establishes procedures for minimizing exposure to radiation.
19 CSR 20-10.090	Missouri Radiation Regulations; Protection Against Ionizing Radiation, Disposal of Radioactive Wastes	Establishes appropriate exposure limits from radiation.

CITATION	TITLE	APPLICABILITY
19 CSR 20-10.070	Missouri Radiation Regulations; Protection Against Ionizing Radiation, Storage of Radioactive Materials	Establishes appropriate exposure limits from radiation.
19 CSR 20-10.080	Missouri Radiation Regulations; Protection Against Ionizing Radiation, Control of Radioactive Contamination	Establishes appropriate exposure limits from radiation.
10 CSR 10-5.180, Emission of Visible air Contaminants from Internal Combustion Engines	Missouri Air Pollution Control Regulations; Air Quality Standards and Air Pollution Control Regulations for the St. Louis Metropolitan Area	Establishes limits on particulate matter emissions from Internal Combustion Engines.
10 CSR 20-6.010	Missouri Construction and Operating Permit Regulations	Necessary for any asphalt plant or crusher used on-site.
10 CSR 23-4.050	Missouri General Protection of Groundwater Quality and Resources	USACE must protect the groundwater with respect to AEC/MED activities and contaminates.
10 CSR 20-6.010(13)	Missouri Stormwater Discharge Regulations	Any stormwater collected during remedial activities must meet the discharge regulations.

CITATION	TITLE	APPLICABILITY
40 CFR Part 192	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings Subpart D, Standards for Management of Uranium Byproduct Materials Pursuant to Section 84 of the Atomic Energy Act of 1954, as amended; Subpart E, Standards for Management of Thorium Byproduct Materials Pursuant to Section 84 of the Atomic Energy Act of 1954, as amended.	Establishes cleanup levels for radioactive contamination specific radium, thorium, and daughter products.
40 CFR 141; 56 FR 33050 July 18, 1991	Safe Drinking Water Act, Proposed National Primary Drinking Water Regulations	Establishes a limit of contaminates in drinking water. Groundwater beneath SLAPS/HISS is available as a drinking water source.
40 CFR 192.02	Groundwater Standards for Remedial Actions at Inactive Uranium Processing Sites	SLAPS/HISS have similar waste as to what is found at Inactive Uranium Processing Sites and establishes levels of contaminate in groundwater.
40 CFR 121.11 and 141.62 10 CSR 60-4.030	Safe Drinking Water Act; National Primary Drinking Water Regulations; Maximum Contaminant Levels; Missouri Drinking Water Regulations, Maximum Inorganic Chemical Contaminant Levels	Establishes contaminate limits in groundwater; uranium, radium, alpha, beta, and radon.
16 USC 469 PL 93-291; 88 Stat. 174	Archeological and Historic Preservation Act	Establishes procedures for archeological and historic preservation.

CITATION	TITLE	APPLICABILITY
10 CSR 23-1.010 through 1.060	Definitions Application to All Wells Type of Wells Qualifications Application for a Permit	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-1.090	Permit Requirement Well Registration	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-1.105	Permit Renewal	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-1.140	Placement of Registration Number	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-1.155	Well drilling and Pump Installation Machine Registration	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-1.160	Mail and Notification Procedures	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-3.020 through 3.080	General Protection of Groundwater Quality & Resources Standards for Construction of Wells Well Casing Seals and Connections Pump Installation Certification and Registration Reports Plastic Well Casing Liners	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 23-3.110	Plugging of Wells	Requirements for construction, and abandonment of groundwater monitoring wells.

CITATION	TITLE	APPLICABILITY
10 CSR 23-4.010-4.08	Monitoring Well Construction Code	Requirements for construction, and abandonment of groundwater monitoring wells.
10 CSR 25-6.263	Standards for Transporters of Hazardous Waste	State requirements for transporters to follow if transporting hazardous waste.
10 CSR 30-2.030	General Land Surveying Requirements	Surveying before and after remediation activities will be done and must follow appropriate standard procedures and be performed by a licensed surveyor.
RSMo 327	Missouri Law Regulating the Practice of Architecture, Professional Engineering and Land Surveying	Engineering Plans and Specifications or Land Surveys need to be performed by a licensed professional.
10 CSR 80-2.010	Definitions Solid Waste Management	Disposal restriction on radioactive material in sanitary landfills.
40 CFR Part 122-125	Clean Water Act - National Pollutant Discharge Elimination System (NPDES)	Water Pollution Control Program is supplying ARARs for SLAPS similar ARARs will be needed for HISS.

APPENDIX B

CORRESPONDENCE

101417

United States Department of the Interior

TAKE PRIDE IN AMERICA

FISH AND WILDLIFE SERVICE
Fish and Wildlife Enhancement
Columbia Field Office
608 East Cherry Street
Columbia, Missouri 65201

IN REPLY REFER TO

1993 MAR -8 PM 1:40

FWS/AES-CHFO

MAR 5 1993

Mr. Dave G. Adler
Department of Energy
Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831-8723

Dear Mr. Adler:

This responds to your December 10, 1993, letter requesting information regarding the baseline environmental conditions in the vicinity of the St. Louis Site, for the management and clean-up of radioactive contamination, in St. Louis, St. Louis County, Missouri. We regret not replying sooner, as we have been short staffed.

We have enclosed copies of the National Wetlands Inventory Maps for all three sites based on our understanding of specific locations taken from directions you outlined in your letter. We found some forested wetlands which lie within or adjacent to the properties and have highlighted them for your review.

No federally-listed endangered or threatened species occur in the proposed project areas. However, please contact the Missouri Department of Conservation (P.O. Box 180, Jefferson City, Missouri 65101) concerning state-listed rare and endangered species.

We regret that, without a site visit and a tremendous amount of field evaluation, it is impossible to assist in a detailed description of the local aquatic and terrestrial flora and fauna, existing ecosystems, and the range and habitats of the ecosystem inhabitants. We suggest a thorough review of the properties by your team followed by discussions with local Missouri Department of Conservation personnel.

We appreciate the opportunity to review this project. Should you have questions concerning these comments, or if we can be of further assistance, please contact Ms. Kelly Srigley Werner at the above address, or by telephone at (314)876-1911.

Sincerely,

Jerry J. Brabander
Field Supervisor

089094

MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS
P.O. Box 180
Jefferson City, Missouri 65102-0180

STREET LOCATION
2901 West Truman Boulevard
Jefferson City, Missouri

Telephone: 314/751-4115
JERRY J. PRESLEY, Director

May 7, 1992

Mr. David G. Adler
Site Manager
Former Sites Restoration Division
Department of Energy
P. O. Box 2001
Oak Ridge, TN 37831

Dear Mr. Adler:

In response to your April 24, 1992 request for information on local aquatic and terrestrial flora and fauna at the St. Louis site, we queried the Heritage Data Base.

Enclosed are printouts from the database that include lists of rare and endangered species likely to occur in St. Louis County, and known fish and wildlife species likely to occur in St. Louis County. The lists include 37 rare and endangered species and 538 fish and wildlife species. In addition, I have enclosed a list of sensitive species and high quality natural communities known from St. Louis County.

The absence of further occurrences of sensitive species and natural communities does not mean that they do not occur within the impacted area, merely that no additional information is known at this time. This report should not be regarded as a final statement on the presence or absence of rare or endangered species or high quality natural communities; only an on-site inspection can verify the absence of existence of such species or communities.

I hope this response meets your needs.

Sincerely,

W. H. Dieffenbach

WILLIAM H. DIEFFENBACH
ASST. PLANNING DIVISION CHIEF

WHD:jct

Enclosure

COMMISSION

JERRY P. COMBS
Kennett

ANDY DALTON
Springfield

JAY HENGES
St. Louis

JOHN POWELL
Rolla

089094

Department of Energy - St. Louis County

Two species occur in/along the Mississippi River and Missouri River in the vicinity of the sites identified by the Department of Energy.

Pallid sturgeon (Scaphirhynchus albus) is state and federal listed Endangered.

Overwintering bald eagles (Haliaeetus leucocephalus) are state and federal listed Endangered.

A complete list of sensitive species and high-quality natural communities is also provided. Except for the two species listed above, it is unlikely that any other Rare or Endangered species would be affected at these project sites.

In addition, a Procedures printout of all animals of St. Louis County is included.

Note: The list of animals of St. Louis is not included in this document due to the length of the list. Anyone may view this list by accessing the Heritage Database or by contacting Science Applications International Corporation, St. Ann, Missouri.

APPENDIX C

COST ANALYSIS

Costs of the Alternatives in 2003 Dollars
(Includes Monitoring if Required During 30 Year Evaluation Period)

Millions of 2003$	
Alternative 1	$1.5
Alternative 2	$205
Alternative 3	$284
Alternative 4	$129
Alternative 5	$223
Alternative 6	$286

Note: Cost estimates were prepared using Micro Computer Aided Cost Engineering System (MCACES).

Contents:

- Summary of Removal Actions
- Comparison of Total Cost of Remedial Alternatives
- Cost Estimate Summary for Remedial Alternatives 1, 2, 3, 4, and 6
- Present Worth Analysis
- Cost Detail for Alternative 5
- Cost Assumption Summary for Alternative 5
- Volume Calculations

Table C-1. Summary of Removals Included in the Site-wide Alternatives for the North County Site

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Removals by Property Units						
HISS/Futura	Leave remaining materials in place	Excavate soils above subsurface soil supplemental limit with institutional controls and add multi-media cap.	Excavate for release without restrictions	Institutional controls with no further excavation	Excavate for release without restrictions	Excavate for release without restrictions
Roadside	No additional removals; leave remaining materials in place	Excavate for release without restrictions	Excavate for release without restrictions	Institutional controls with no further excavation	Excavate for release without restrictions	Excavate for release without restrictions
Directly under roads, bridges, railroads, and other permanent structures	Leave remaining material in place	Defer excavation and use institutional controls	Defer excavation and use institutional controls	Institutional controls with no further excavation	Defer excavation and use institutional controls	Excavate for release without restrictions
Coldwater Creek	Leave remaining material in place	Sort material during removals for projects such as flood control	Excavate to Coldwater Creek criteria below mean water level for release without restrictions.	Institutional controls with no further excavation	Excavate to Coldwater Creek criteria below mean water level for release without restrictions.	Excavate to Coldwater Creek criteria below mean water level for release without restrictions
SLAPS	Leave remaining material in place	Excavate soils above subsurface soil supplemental limit with institutional controls and add multi-media cap	Excavate soils above subsurface soil supplemental limit with institutional controls and consolidate other soils here for treatment	Institutional controls with no further excavation	Excavate for release without restrictions	Excavate for release without restrictions
All other vicinity properties	No additional vicinity property removals	Excavate for release without restrictions	Excavate for release without restrictions	Institutional controls with no further excavation	Excavate for release without restrictions	Excavate for release without restrictions
Total Soil Removal, Thousands						
[a]Impacted volume to be excavated, yd^3	0	150	190	0	230	300
Excavation volume, yd^3	The in-situ volume of soil plus the excavation allowance needed to remove the impacted volume; (about 20%) i.e., the size of the hole; generally 20% larger than impacted volume.					
Ex-situ, yd^3	The volume after soil swelling as a result of excavation; generally 25% larger than the excavation volume.					

[a] Impacted volume to be excavated: in-situ volume of soil above the remediation goal rounded to two significant figures.

COMPARISON OF TOTAL COST OF REMEDIAL ALTERNATIVES (in 2003 Dollars)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Alternative Description	No Action	Partial Excavation and Capping at SLAPS and HISS/Futura	Partial Excavation and Treatment at SLAPS	Institutional Controls (No Further Excavation)	Excavation with Institutional Controls Under Buildings, Roads, Bridges, and Railroads	Excavation at All Properties
Total Project Duration (yrs)	0	30[1]	30[1]	30[1]	30[1]	30
Capital Costs[2]						
Real Estate Analysis/Documents	$0	$279,000	$279,000	$0	$279,000	$279,000
Project Management & Pre-remedial Action	$113,000	$13,621,422	$21,038,772	$2,309,600	$18,045,000	$20,507,484
HTRW Remedial Action (Construct)	$0	$104,501,170	$161,557,710	$57,740,000	$147,452,000	$170,616,698
Annual O & M Costs[3]						
Long Term Monitoring	$0	$12,350,000	$6,669,000	$15,369,000	$686,000	$0
Post Remedial Site Supervision	$76,000	$4,269,000	$2,143,000	$4,773,000	$237,000	$0
Periodic O & M Costs[4]						
Final Status Surveys & Post Remedial Action Reports (One time)	$0	$8,776,000	$8,776,000	$8,776,000	$8,776,000	$8,776,000
Five Year Reviews	$952,000	$714,000	$357,000	$793,000	$40,000	$0
Utility/Construction Support	$0	$0	$0	$1,278,000	$0	$0
Subtotal	**$1,141,000**	**$144,510,592**	**$200,820,482**	**$91,038,600**	**$175,515,000**	**$201,888,139**
Contingency (25%)	$285,000	$36,000,000	$50,200,000	$13,700,000	$31,611,000[5]	$50,500,000
Escalation (7.3%)	$83,300	$10,500,000	$14,700,000	$6,650,000	$14,711,000[6]	$14,700,000
Subtotal	**$1,509,300**	**$191,100,000**	**$265,700,000**	**$120,400,000**	**$222,837,000**	**$267,100,000**
E.D. & C. (1%)	N/A	$1,910,000	$2,660,000	$1,200,000	N/A	$2,670,000
C.M. (6%)	N/A	$11,500,000	$15,900,000	$7,220,000	N/A	$16,000,000
TOTAL COST	**$1,509,300**	**$204,510,000**	**$284,260,000**	**$128,820,000**	**$222,837,000**	**$285,770,000**

Notes:

[1]Need for institutional controls for this alternative is likely to extend beyond 30 year period included in this evaluation.

[2]Capital costs are those expenditures that are required to construct a remedial action and consist primarily of expenditures initially incurred to build, install, or execute the remedial action.

[3]Annual O & M costs are operation and maintenance costs that occur post construction and are necessary to ensure or verify the continued effectiveness of a remedial action.

[4]Periodic O & M costs are operation and maintenance costs that occur only once every few years (e.g., five year reviews, equipment replacement) or expenditures that occur only once during the entire O & M period.

[5]Contingencies for the MCACES calculations include 5% for design and 15% for construction. These assumptions are built into the MCACES calculations.

[6]The escalation rates for the MCACES calculations include 7.3% (calculated based upon the midpoint of construction effort) for construction costs and 25.6% (calculated based upon the midpoint of post remedial action) for post remedial action costs. These escalation determinations were made using the Composite Civil Works Construction Index from EM 1110-2-1304, Civil Works Construction Cost Index System dated September 30, 2000.

GOVERNMENT ESTIMATE WORK SHEET

PROJECT: FUSRAP - North County Feasibility Study DATE: 20-Nov-2002

SUBJECT: Alternative 1, No Further Action FILE: NCFSPPAlt.xls

Account No.	ITEM	QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
32XXX	PROJ. MANG. & PRE-REMEDIAL ACTION				
20	Investigation	1	LS		113,000
34XXX	POST-REMEDIAL ACTION				
20	Operation, Maint. & Monitoring				
20.03	Five Year Review	1	LS		952,000
20.04	Post Remedial Site Supervision	1	LS		76,000
		SUBTOTAL:			$1,141,000
		* CONTINGENCIES: (in %)----		25	$285,000
		ESCALATION: (in %)		7.3	$83,300
		SUBTOTAL:----------			$1,509,300
		E.D. & C. (in %)----------		0	$0
		C.M. (in %)----------		0	$0
		TOTAL COST			**$1,509,300**

GOVERNMENT ESTIMATE WORK SHEET

PROJECT: FUSRAP - North County Feasibility Study DATE: 29-Apr-2003

SUBJECT: Alternative 2, Containment at SLAPS and HISS/Futura FILE: NCFSPPRAlt.xls

Account No.	ITEM	QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS				
G	Rights of Entry/Temporary Permit				
G.01	Rights of Entry Acquisition	279	EA	500.00	139,500
G.02	Damages	279	EA	500.00	139,500
32XXX	PROJ. MANG. & PRE-REMEDIAL ACTION				
10	Project Management	1	LS		3,143,405
20	Investigation (PRP)	1	LS		1,047,802
30	Remedial Design	1	LS		8,382,414
40	Remedial Action Contracting	1	LS		1,047,802
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)				
01	Mobilize and Preparatory Work	1	LS		416,000
01.08	Institutional Controls	1	LS		359,000
02	Monitor'g, Sampling, Test & Analysis				
02.90	Environmental Monitoring	1	LS		3,622,000
02.91	Additional Labor & Services	1	LS		7,732,000
03	Site Work				
03.03	Earthwork	185,500	CY	15.30	2,838,150
03.04	Roads	11,300	SY	41.30	466,690
03.90	Railroads	3,900	LF	81.60	318,240
03.91	Sheetpile Shoring	18,300	SF	10.80	197,640
03.92	Additional Labor & Services	1	LS		607,600
05	Surface Water Collect & Control				
05.92	Additional Labor & Services	1	LS		3,341,800
08	Solids Collect and Containment				
08.01	Contaminated Soil Collection	185,500	CY	16.30	3,023,650
08.05	Capping Contaminated Areas/Waste Pile	30	ACR	166,000.00	4,980,000
19	Disposal (Commercial)				
19.21	Transport to Storage/Disp Facility	231,900	CY	130.00	30,147,000
19.22	Disposal Fees and Taxes	231,900	CY	126.00	29,219,400
19.90	Transportation & Disposal of Building Decon. Material	1	LS		16,615,000
20	Site Restoration	1	LS		213,000
21	Demobilization	1	LS		404,000
34XXX	POST-REMEDIAL ACTION				
20	Operation, Maint. & Monitoring				
20.01	Final Status Surveys	1	LS		8,776,000
20.02	Monitoring	1	LS		12,350,000
20.03	Five Year Review	1	LS		714,000
20.04	Post Remedial Site Supervision	1	LS		4,269,000

	SUBTOTAL:		$144,510,592
*	CONTINGENCIES: (in %)-	25	$36,000,000
	ESCALATION: (in %)	7.3	$10,500,000
	SUBTOTAL:----------		$191,100,000
	E.D.C. (in %)----------	1	$1,910,000
	C.M. (in %)----------	6	$11,500,000
	TOTAL COST		**$204,510,000**

*Contingencies Exclude Institutional Controls

02.90	Environmental Monitoring (5yrs)	used cost from SAIC + 31.98% OH from MCACES
02.91	Additional Labor & Services	cost prorated based on MCACES for alt 5
03.03	Earthwork	unit cost includes swell quantity for backfill used in MCACES details (351,565cy) see detail page 35 per SAIC volume notes, it is assummed that grading & moving overburden at the containment sites will result in exc. equivalent to volume of unrestricted release criteria. More material is excated then disposed
03.92	Additional Labor & Services	cost prorated based on quantity, backfill only ($2.00/cy)
05.92	Additional Labor & Services	cost prorated based on quantity ($11.00/cy)

GOVERNMENT ESTIMATE WORK SHEET

PROJECT: FUSRAP - North County Feasibility Study DATE: 29-Apr-2003

SUBJECT: Alternative 3, Treatment at SLAPS FILE: NCFSPPRAlt.xls

Account No.	ITEM	QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS				
G	Rights of Entry/Temporary Permit				
G.01	Rights of Entry Acquisition	279	EA	500.00	139,500
G.02	Damages	279	EA	500.00	139,500
32XXX	PROJ. MANG. & PRE-REMEDIAL ACTION				
10	Project Management	1	LS		4,855,101
20	Investigation (PRP)	1	LS		1,618,367
30	Remedial Design	1	LS		12,946,937
40	Remedial Action Contracting	1	LS		1,618,367
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)				
01	Mobilize and Preparatory Work	1	LS		416,000
01.08	Institutional Controls	1	LS		128,000
02	Monitor'g, Sampling, Test & Analysis				
02.90	Environmental Monitoring	1	LS		2,173,000
02.91	Additional Labor & Services	1	LS		4,639,000
03	Site Work				
03.03	Earthwork	229,300	CY	7.50	1,719,750
03.04	Roads	11,300	SY	41.30	466,690
03.90	Railroads	3,900	LF	81.60	318,240
03.91	Sheetpile Shoring	18,300	SF	10.80	197,640
03.92	Additional Labor & Services	1	LS		401,600
05	Surface Water Collect & Control				
05.92	Additional Labor & Services	1	LS		2,208,800
08	Solids Collect and Containment				
08.01	Contaminated Soil Collection	229,300	CY	16.30	3,737,590
08.05	Capping Contaminated Areas/Waste Pile	10	ACR	48,000.00	480,000
13	Physical Treatment				
13.09	Soil Washing	229,300	CY	420.00	96,306,000
13.90	Soil Sorting	286,700	CY	66.00	18,922,200
19	Disposal (Commercial)				
19.21	Transport to Storage/Disp Facility	47,700	CY	130.00	6,201,000
19.22	Disposal Fees and Taxes	47,700	CY	126.00	6,010,200
19.90	Transportation & Disposal of Building Decon. Material	1	LS		16,615,000
20	Site Restoration	1	LS		213,000
21	Demobilization	1	LS		404,000
34XXX	POST-REMEDIAL ACTION				
20	Operation, Maint. & Monitoring				
20.01	Final Status Surveys	1	LS		8,776,000
20.02	Monitoring	1	LS		6,669,000
20.03	Five Year Review	1	LS		357,000
20.04	Post Remedial Site Supervision	1	LS		2,143,000
		SUBTOTAL:			$200,820,482
		* CONTINGENCIES: (in %)-		25	$50,200,000
		ESCALATION: (in %)		7.3	$14,700,000
		SUBTOTAL:----------			$265,700,000
		E.D.C. (in %)----------		1	$2,660,000
		C.M. (in %)----------		6	$15,900,000
		TOTAL COST			**$284,260,000**

*Contingencies Exclude Institutional Controls

02.90	Environmental Monitoring (3yrs)	used cost from SAIC + 31.98% OH from MCACES
02.91	Additional Labor & Services	cost prorated based on MCACES for alt 5
03.03	Earthwork	unit cost includes swell quantity for backfill used in MCACES details (351,565cy) see detail page 35 per SAIC volume notes, because the material is to be treated onsite the cost for borrow and 50% of the cost for hauling has been subtracted (-$7.80)
03.92	Additional Labor & Services	cost prorated based on quantity, backfill only ($2.00/cy)
05.92	Additional Labor & Services	cost prorated based on quantity ($11.00/cy)
08.05	Soil Cap	used cost from SAIC + 31.98% OH from MCACES
13.09	Soil Washing	used cost from SAIC + 31.98% OH from MCACES
13.90	Soil Sorting	used cost from SAIC + 31.98% OH from MCACES

GOVERNMENT ESTIMATE WORK SHEET

PROJECT: FUSRAP - North County Feasibility Study DATE: 29-Apr-2003

SUBJECT: Alternative 4, Institutional Controls (No Further Excavation) FILE: NCFSPPRAlt.xls

Account No.	ITEM	QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
32XXX	PROJ. MANG. & PRE-REMEDIAL ACTION				
10	Project Management	1	LS		1,732,200
20	Investigation (PRP)	1	LS		577,400
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)				
01.08	Institutional Controls	1	LS		36,370,000
02	Monitor'g, Sampling, Test & Analysis				
02.90	Environmental Monitoring	1	LS		1,449,000
02.91	Additional Labor & Services	1	LS		3,093,000
19	Disposal (Commercial)				
19.90	Transportation & Disposal of Building Decon. Material	1	LS		16,615,000
20	Site Restoration	1	LS		213,000
22	General Requirements				
22.90	Utility Radiiological Support	1	LS		1,278,000
34XXX	POST-REMEDIAL ACTION				
20	Operation, Maint. & Monitoring				
20.01	Final Status Surveys	1	LS		8,776,000
20.02	Monitoring	1	LS		15,369,000
20.03	Five Year Review	1	LS		793,000
20.04	Post Remedial Site Supervision	1	LS		4,773,000

	SUBTOTAL:		$91,038,600
*	CONTINGENCIES: (in %)-	25	$13,700,000
	ESCALATION: (in %)	7.3	$6,650,000
	SUBTOTAL:----------		$120,400,000
	E.D.C. (in %)----------	1	$1,200,000
	C.M. (in %)----------	6	$7,220,000
	TOTAL COST		**$128,820,000**

*Contingencies Exclude Institutional Controls

02.90	Environmental Monitoring (2yrs)	used cost from SAIC + 31.98% OH from MCACES
02.91	Additional Labor & Services	cost prorated based on MCACES for alt 5
22.90	Utility Radiiological Support	based on WAD 11(2001) $42,600 x 30year project life

GOVERNMENT ESTIMATE WORK SHEET

PROJECT: FUSRAP - North County Feasibility Study DATE: 29-Apr-2003

SUBJECT: Alternative 6, Excavation at all Properties FILE: NCFSPPRAlt.xls

Account No.	ITEM	QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS				
G	Rights of Entry/Temporary Permit				
G.01	Rights of Entry Acquisition	279	EA	500.00	139,500
G.02	Damages	279	EA	500.00	139,500
32XXX	PROJ. MANG. & PRE-REMEDIAL ACTION				
10	Project Management	1	LS		5,126,871
20	Investigation (PRP)	1	LS		1,708,957
30	Remedial Design	1	LS		13,671,656
40	Remedial Action Contracting	1	LS		1,708,957
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)				
01	Mobilize and Preparatory Work	1	LS		416,000
02	Monitor'g, Sampling, Test & Analysis				
02.90	Environmental Monitoring	1	LS		4,347,000
02.91	Additional Labor & Services	1	LS		9,280,000
03	Site Work				
03.03	Earthwork	360,100	CY	15.30	5,509,530
03.04	Roads	104,300	SY	41.30	4,307,590
03.90	Railroads	41,630	LF	81.60	3,397,008
03.91	Sheetpile Shoring	18,300	SF	10.80	197,640
03.92	Additional Labor & Services	1	LS		743,800
05	Surface Water Collect & Control				
05.92	Additional Labor & Services	1	LS		4,090,900
08	Solids Collect and Containment				
08.01	Contaminated Soil Collection	360,100	CY	16.30	5,869,630
19	Disposal (Commercial)				
19.21	Transport to Storage/Disp Facility	450,100	CY	130.00	58,513,000
19.22	Disposal Fees and Taxes	450,100	CY	126.00	56,712,600
19.90	Transportation & Disposal of Building Decon. Material	1	LS		16,615,000
20	Site Restoration	1	LS		213,000
21	Demobilization	1	LS		404,000
34XXX	POST-REMEDIAL ACTION				
20	Operation, Maint. & Monitoring				
20.01	Final Status Surveys	1	LS		8,776,000

SUBTOTAL:		$201,888,139
CONTINGENCIES: (in %)	25	$50,500,000
ESCALATION: (in %)	7.3	$14,700,000
SUBTOTAL:----------		$267,100,000
E.D.C. (in %)----------	1	$2,670,000
C.M. (in %)----------	6	$16,000,000
TOTAL COST		**$285,770,000**

St. Louis North County FS - Present Worth Analysis
Alt. 1
Project Life Cycle Discount Factor - 7.0%*
Costs in Thousands of FY03$

Year	Capital Costs ($)	O&M Costs ($)	Total Cost (Capital + O&M)	Discount Factor at 7.0%	Present Worth at 7.0% ($)
0			0	1.000	0
1	149		149	0.935	139
2		3	3	0.873	3
3		3	3	0.816	2
4		4	4	0.763	3
5		214	214	0.713	153
6		3	3	0.666	2
7		3	3	0.623	2
8		3	3	0.582	2
9		4	4	0.544	2
10		214	214	0.508	109
11		4	4	0.475	2
12		3	3	0.444	1
13		3	3	0.415	1
14		4	4	0.388	2
15		214	214	0.362	78
16		3	3	0.339	1
17		3	3	0.317	1
18		3	3	0.296	1
19		4	4	0.277	1
20		214	214	0.258	55
21		3	3	0.242	1
22		3	3	0.226	1
23		3	3	0.211	1
24		4	4	0.197	1
25		214	214	0.184	39
26		3	3	0.172	1
27		3	3	0.161	0
28		3	3	0.150	0
29		4	4	0.141	1
30		214	214	0.131	28
Total	**149**	**1,360**	**1,509**		**632**

* 7.0% Discount rate is in accordance with NCP (55 FR 8722)
Total cost only includes costs incured for 30 Year project duration

St. Louis North County FS - Present Worth Analysis
Alt.2
Project Life Cycle Discount Factor - 7.0%*
Costs in Thousands of FY03$

Year	Capital Costs ($)	O&M Costs ($)	Total Cost (Capital + O&M)	Discount Factor at 7.0%	Present Worth at 7.0% ($)
0			0	1.000	0
1	33,522		33,522	0.935	31,329
2	33,522		33,522	0.873	29,279
3	33,522		33,522	0.816	27,364
4	33,522		33,522	0.763	25,574
5	33,522		33,522	0.713	23,901
6		7,154	7,154	0.666	4,767
7		7,154	7,154	0.623	4,455
8		943	943	0.582	549
9		943	943	0.544	513
10		1,147	1,147	0.508	583
11		943	943	0.475	448
12		944	944	0.444	419
13		943	943	0.415	391
14		943	943	0.388	366
15		1,147	1,147	0.362	416
16		943	943	0.339	319
17		943	943	0.317	299
18		943	943	0.296	279
19		943	943	0.277	261
20		1,147	1,147	0.258	296
21		943	943	0.242	228
22		944	944	0.226	213
23		943	943	0.211	199
24		943	943	0.197	186
25		1,147	1,147	0.184	211
26		943	943	0.172	162
27		943	943	0.161	152
28		943	943	0.150	142
29		943	943	0.141	133
30		1,147	1,147	0.131	151
Total	**167610**	**37,019**	**204,629**		**153,584**

* 7.0% Discount rate is in accordance with NCP (55 FR 8722)
Total cost only includes costs incured for 30 Year project duration

St. Louis North County FS - Present Worth Analysis
Alt. 3
Project Life Cycle Discount Factor - 7.0%*
Costs in Thousands of FY03$

Year	Capital Costs ($)	O&M Costs ($)	Total Cost (Capital + O&M)	Discount Factor at 7.0%	Present Worth at 7.0% ($)
0			0	1.000	0
1	64,720		64,720	0.935	60,486
2	64,720		64,720	0.873	56,529
3	64,720		64,720	0.816	52,831
4	64,720		64,720	0.763	49,375
5		6,689	6,689	0.713	4,769
6		6,689	6,689	0.666	4,457
7		476	476	0.623	296
8		476	476	0.582	277
9		578	578	0.544	314
10		476	476	0.508	242
11		476	476	0.475	226
12		476	476	0.444	211
13		476	476	0.415	198
14		578	578	0.388	224
15		476	476	0.362	173
16		476	476	0.339	161
17		476	476	0.317	151
18		476	476	0.296	141
19		578	578	0.277	160
20		476	476	0.258	123
21		476	476	0.242	115
22		476	476	0.226	107
23		476	476	0.211	100
24		578	578	0.197	114
25		476	476	0.184	88
26		477	477	0.172	82
27		476	476	0.161	77
28		477	477	0.150	72
29		578	578	0.141	81
30		476	476	0.131	63
Total	**258880**	**25,314**	**284,194**		**232,242**

* 7.0% Discount rate is in accordance with NCP (55 FR 8722)
Total cost only includes costs incured for 30 Year project duration

St. Louis North County FS - Present Worth Analysis
Alt. 4
Project Life Cycle Discount Factor - 7.0%*
Costs in Thousands of FY03$

Year	Capital Costs ($)	O&M Costs ($)	Total Cost (Capital + O&M)	Discount Factor at 7.0%	Present Worth at 7.0% ($)
0			0	1.000	0
1	42,511		42,511	0.935	39,730
2	42,510		42,510	0.873	37,130
3		7,290	7,290	0.816	5,951
4		7,290	7,290	0.763	5,562
5		1,080	1,080	0.713	770
6		1,081	1,081	0.666	720
7		1,306	1,306	0.623	813
8		1,080	1,080	0.582	629
9		1,081	1,081	0.544	588
10		1,080	1,080	0.508	549
11		1,081	1,081	0.475	514
12		1,306	1,306	0.444	580
13		1,081	1,081	0.415	449
14		1,080	1,080	0.388	419
15		1,081	1,081	0.362	392
16		1,080	1,080	0.339	366
17		1,306	1,306	0.317	413
18		1,081	1,081	0.296	320
19		1,080	1,080	0.277	299
20		1,081	1,081	0.258	279
21		1,080	1,080	0.242	261
22		1,306	1,306	0.226	295
23		1,080	1,080	0.211	228
24		1,081	1,081	0.197	213
25		1,080	1,080	0.184	199
26		1,081	1,081	0.172	186
27		1,305	1,305	0.161	210
28		1,080	1,080	0.150	162
29		1,081	1,081	0.141	152
30		1,080	1,080	0.131	142
Total	**85,021**	**43,799**	**128,820**		**98,519**

* 7.0% Discount rate is in accordance with NCP (55 FR 8722)
Total cost only includes costs incured for 30 Year project duration

St. Louis North County FS - Present Worth Analysis
Alt.5
Project Life Cycle Discount Factor - 7.0%*
Costs in Thousands of FY03$

Year	Capital Costs ($)	O&M Costs ($)	Total Cost (Capital + O&M)	Discount Factor at 7.0%	Present Worth at 7.0% ($)
0		0	0	1.000	0
1	42,100		42,100	0.935	39,346
2	42,100		42,100	0.873	36,772
3	42,100		42,100	0.816	34,366
4	42,100		42,100	0.763	32,118
5	42,100		42,100	0.713	30,017
6		5,594	5,594	0.666	3,728
7		5,594	5,594	0.623	3,484
8		46	46	0.582	27
9		46	46	0.544	25
10		57	57	0.508	29
11		46	46	0.475	22
12		47	47	0.444	21
13		47	47	0.415	20
14		47	47	0.388	18
15		57	57	0.362	21
16		46	46	0.339	16
17		47	47	0.317	15
18		47	47	0.296	14
19		47	47	0.277	13
20		57	57	0.258	15
21		46	46	0.242	11
22		47	47	0.226	11
23		47	47	0.211	10
24		46	46	0.197	9
25		57	57	0.184	11
26		46	46	0.172	8
27		47	47	0.161	8
28		47	47	0.150	7
29		47	47	0.141	7
30		57	57	0.131	7
Total	**210500**	**12,312**	**222,812**		**180,171**

* 7.0% Discount rate is in accordance with NCP (55 FR 8722)
Total cost only includes costs incured for 30 Year project duration

St. Louis North County FS - Present Worth Analysis
Alt.6
Project Life Cycle Discount Factor - 7.0%*
Costs in Thousands of FY03$

Year	Capital Costs ($)	O&M Costs ($)	Total Cost (Capital + O&M)	Discount Factor at 7.0%	Present Worth at 7.0% ($)
0			0	1.000	0
1	45,569		45,569	0.935	42,588
2	45,569		45,569	0.873	39,802
3	45,569		45,569	0.816	37,198
4	45,569		45,569	0.763	34,764
5	45,569		45,569	0.713	32,490
6	45,569		45,569	0.666	30,365
7		6,211	6,211	0.623	3,868
8		6,211	6,211	0.582	3,615
9		0	0	0.544	0
10		0	0	0.508	0
11		0	0	0.475	0
12		0	0	0.444	0
13		0	0	0.415	0
14		0	0	0.388	0
15		0	0	0.362	0
16		0	0	0.339	0
17		0	0	0.317	0
18		0	0	0.296	0
19		0	0	0.277	0
20		0	0	0.258	0
21		0	0	0.242	0
22		0	0	0.226	0
23		0	0	0.211	0
24		0	0	0.197	0
25		0	0	0.184	0
26		0	0	0.172	0
27		0	0	0.161	0
28		0	0	0.150	0
29		0	0	0.141	0
30		0	0	0.131	0
Total	**273,414**	**12,422**	**285,836**		**224,689**

* 7.0% Discount rate is in accordance with NCP (55 FR 8722)
Total cost only includes costs incured for 30 Year project duration

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Revised FSPP - North County
Formerly Utilized Sites Remedial
Action Program(FUSRAP)
North County Feasibility Study
Alt.5-Exc.&Institutional Control

Designed By:
Estimated By: Gregory Dyn

Prepared By: U.S ARMY CORPS OF ENGINEERS
St. Louis District

Preparation Date: 06/27/01
Effective Date of Pricing: 10/01/00
Est Construction Time: 1825 Days

Sales Tax: 0.0%

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Release 1.2

PROJECT BREAKDOWN:

This estimate is structured for remedial action construction as follows using a 5 digit number at Level 1 and a 2 digit number at all remaining levels. The numbers for the first 3 title levels are taken from the Standard Interagency HTRW Remedial Action Work Breakdown Structure (RA-WBS). The 2 digit numbers for the remaining title levels are user defined. The detail items are at Level 5.

Level 1 - WBS Level 1 (Account)
Level 2 - WBS Level 2 (System)
Level 3 - WBS Level 3 (Subsystem)
Level 4 - WBS Level 4 (Assembly Category or Other)
Level 5 - Detail
Level 6 - Not Used

PROJECT DESCRIPTION:

The North County site is part of the St. Louis Formerly Utilized Sites Remedial Action Program (FUSRAP) Site, which is comprised of multiple properties. The North County Site properties are located in northern St. Louis County near Lambert-St. Louis International Airport. Specific sites include the St. Louis Airport Site (SLAPS), Latty Avenue Properties (HISS/Futura and Latty Avenue VP's), and SLAPS VP's. The SLAPS VP's include properties near SLAPS and areas along Coldwater Creek, which drains the North County Site. A total of more than 87 properties are involved. The North County Site includes three properties on EPA's National Priority List (NPL): SLAPS, HISS and Futura Coatings.
This estimate only considers Alternative 5 of the Proposed Plan, Excavation with Institutional Controls at Roads, Bridges, and Railroads

PRODUCTIVITY:

Production rates, as a baseline and as taken from the Unit Price Book (UPB) Database, assumes a non-contaminated working environment with no level of protection productivity reduction factors. When required, productivity for appropriate activities will be adjusted for this project as follows:

1. Level of Protection B - Productivity 48%
2. Level of Protection C - Productivity 55%
3. Level of Protection D Modified - Productivity 82%
4. Level of Protection D - Productivity 96%

Notes in the estimate detail will show when each level applies.

The following daily time breakdown was assumed as taken from the Corps of Engineers "Productivity Study for HTRW Remedial Action Projects".

Example: Light Work with ave. temperature >70 but <85 degrees.

Level B Level C Level D Level D Normal

`

			Mod		
Paid Time (minutes)	480	480	480	480	480
- Non-Productive Time (minutes):					
Standard Losses	140	128	76	32	20
Scheduled/Heat Stress Breaks	65	63	47	33	30
Dexterity Losses	69	51	4	5	0
Productive Time (minutes)	206	238	353	410	430
Productivity:	206/430 X100%	238/430 X100%	353/430 X100%	410/430 X100%	430/430 X100%
	48%	55%	82%	96%	100%

Example:

Normal Production Rate (CY/HR)	250	250	250	250	250
X Productivity	.48	.55	.82	.96	1.00
=Reduced Production Rate(CY/HR)	120	138	205	240	250

ESCALATION:

Escalation determinations were made using the Composite Civil Works Construction Index from EM 1110-2-1304, Civil Works Construction Cost Index System(CWCCIS) Dated 30 September 2000. Index projections are based on the current annual Office of Management and Budget (OMB) inflation factors.

For this estimate, the effective date of pricing is October 2000. The anticipated project duration is 1,825 calendar days. The midpoint of remedial action is March 2003. Post remidial action is anticipated to begin immediatly following the completion of remedial action. The midpoint of post remedial action is March 2008.

Remedial Action Escalation Calculation:

Remedial Action Midpoint (March 2003) Index = 545.38
Effective Date of Pricing (October 2000) Index = 507.97

Escalation % = (545/508)-1 X 100% = 7.3%

PostRemedial Action Escalation Calculation:

PostRemedial Action Midpoint (March 2008) Index = 638.40
Effective Date of Pricing (October 2000) Index = 507.97

Escalation % = (638/508)-1 X 100% = 25.6%

CONTINGENCY:

Contingencies are shown for both Design Contingencies and Construction Contingencies. Contingency rates are variable and are applied at Level 2 of the estimate (HTRW RA-WBS Level 2, System). Design contingencies are based on the EI01D010 reasonable guide table for remedial action projects. Construction contingencies are based on the consensus of a CEMVS PM/ED group analysis.

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** PROJECT OWNER SUMMARY - ACCOUNT (Rounded to 1000's) **

		QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS		279,000	14,000	21,000	0	314,000	
32XXX	PROJ. MANG.& PRE-REMEDIAL ACTION		18,045,000	902,000	1,383,000	0	20,330,000	
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)		137,735,000	7,834,000	10069000	20733000	176,370,000	
332XX	ENGINEERING DURING CONSTRUCTION		1,388,000	69,000	106,000	235,000	1,798,000	
333XX	CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	
34XXX	POST-REMEDIAL ACTION		9,739,000	0	2,493,000	0	12,232,000	
TOTAL	Revised FSPP - North County		175,515,000	9,236,000	14711000	22375000	221,837,000	

** PROJECT OWNER SUMMARY - SYSTEM (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS							
01XXX. G Rights of Entry/Temporary Permit		279,000	14,000	21,000	0	314,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENTS		279,000	14,000	21,000	0	314,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION							
32XXX.10 Project Management		4,164,000	208,000	319,000	0	4,691,000	
32XXX.20 Investigations (PRP)		1,388,000	69,000	106,000	0	1,564,000	
32XXX.30 Remedial Design		11,105,000	555,000	851,000	0	12,511,000	
32XXX.40 Remedial Action Contracting		1,388,000	69,000	106,000	0	1,564,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACTION		18,045,000	902,000	1,383,000	0	20,330,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)							
331XX.01 Mobilize and Preparatory Work		418,000	21,000	32,000	71,000	542,000	
331XX.02 Monitor'g,Samplng,Test &Analysis		13,069,000	653,000	954,000	1,960,000	16,636,000	
331XX.03 Site Work		6,190,000	309,000	452,000	928,000	7,880,000	
331XX.05 Surface Water Collect & Control		3,408,000	170,000	261,000	576,000	4,415,000	
331XX.08 Solids Collect and Containment		4,736,000	1,184,000	346,000	710,000	6,977,000	
331XX.19 Disposal (Commercial)		109,292,000	5,465,000	7,978,000	16394000	139,128,000	
331XX.20 Site Restoration		214,000	11,000	16,000	32,000	273,000	
331XX.21 Demobilization		407,000	20,000	30,000	61,000	518,000	
TOTAL HTRW REMEDIAL ACTION (CONSTRUCT)		137,735,000	7,834,000	10069000	20733000	176,370,000	
332XX ENGINEERING DURING CONSTRUCTION							
332XX.01 Engineering During Construction		1,388,000	69,000	106,000	235,000	1,798,000	
TOTAL ENGINEERING DURING CONSTRUCTION		1,388,000	69,000	106,000	235,000	1,798,000	
333XX CONSTRUCTION MANAGEMENT (S&A)							
333XX.01 CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	
TOTAL CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	
34XXX POST-REMEDIAL ACTION							
34XXX.20 Operation, Maint. & Monitoring		9,739,000	0	2,493,000	0	12,232,000	

** PROJECT OWNER SUMMARY - SYSTEM (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
TOTAL POST-REMEDIAL ACTION		9,739,000	0	2,493,000	0	12,232,000	
TOTAL Revised FSPP - North County		175,515,000	9,236,000	14711000	22375000	221,837,000	

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS							
01XXX. G Rights of Entry/Temporary Permit							
01XXX. G.01 Rights of Entry Aquisition		140,000	7,000	11,000	0	157,000	
01XXX. G.02 Damages		140,000	7,000	11,000	0	157,000	
TOTAL Rights of Entry/Temporary Permit		279,000	14,000	21,000	0	314,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENTS		279,000	14,000	21,000	0	314,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION							
32XXX.10 Project Management		4,164,000	208,000	319,000	0	4,691,000	
32XXX.20 Investigations (PRP)		1,388,000	69,000	106,000	0	1,564,000	
32XXX.30 Remedial Design		11,105,000	555,000	851,000	0	12,511,000	
32XXX.40 Remedial Action Contracting		1,388,000	69,000	106,000	0	1,564,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACTION		18,045,000	902,000	1,383,000	0	20,330,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)							
331XX.01 Mobilize and Preparatory Work							
331XX.01.01 Mob Construction Equip & Fac		240,000	12,000	18,000	41,000	311,000	
331XX.01.03 Submittals/Implementation Plans		109,000	5,000	8,000	18,000	141,000	
331XX.01.04 Setup/Construct Temp Facilities		55,000	3,000	4,000	9,000	71,000	
331XX.01.05 Construct Temporary Utilities		15,000	1,000	1,000	3,000	19,000	
TOTAL Mobilize and Preparatory Work		418,000	21,000	32,000	71,000	542,000	
331XX.02 Monitor'g,Samplng,Test &Analysis							
331XX.02.90 Environmental Monitoring		4,169,000	208,000	304,000	625,000	5,307,000	
331XX.02.91 Additional Labor & Services		8,899,000	445,000	650,000	1,335,000	11,329,000	
TOTAL Monitor'g,Samplng,Test &Analysis		13,069,000	653,000	954,000	1,960,000	16,636,000	
331XX.03 Site Work							
331XX.03.03 Earthwork	278416.00 CY	4,291,000	215,000	313,000	644,000	5,462,000	19.62
331XX.03.04 Roads	11307.00 SY	470,000	23,000	34,000	70,000	598,000	52.87
331XX.03.90 Railroads	2900.00 LF	238,000	12,000	17,000	36,000	303,000	104.52
331XX.03.91 Sheetpile Shoring	18265.00 SF	199,000	10,000	15,000	30,000	253,000	13.84
331XX.03.92 Additional Labor & Services		661,000	33,000	48,000	99,000	841,000	

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
331XX.03.93 Misc. Utility Relocations		332,000	17,000	24,000	50,000	423,000	
TOTAL Site Work		6,190,000	309,000	452,000	928,000	7,880,000	
331XX.05 Surface Water Collect & Control							
331XX.05.92 Additional Labor & Services		3,408,000	170,000	261,000	576,000	4,415,000	
TOTAL Surface Water Collect & Control		3,408,000	170,000	261,000	576,000	4,415,000	
331XX.08 Solids Collect and Containment							
331XX.08.01 Contaminated Soil Collection	278416.00 CY	4,736,000	1,184,000	346,000	710,000	6,977,000	25.06
TOTAL Solids Collect and Containment		4,736,000	1,184,000	346,000	710,000	6,977,000	
331XX.19 Disposal (Commercial)							
331XX.19.21 Transport to Storage/Disp Facil	348020.00 CY	45,629,000	2,281,000	3,331,000	6,844,000	58,086,000	166.90
331XX.19.22 Disposal Fees and Taxes	348020.00 CY	46,936,000	2,347,000	3,426,000	7,040,000	59,749,000	171.68
331XX.19.90 Transportation and Disposal of		16,727,000	836,000	1,221,000	2,509,000	21,293,000	
TOTAL Disposal (Commercial)		109,292,000	5,465,000	7,978,000	16394000	139,128,000	
331XX.20 Site Restoration							
331XX.20.01 Earthwork		55,000	3,000	4,000	8,000	69,000	
331XX.20.04 Revegetation And Planting		130,000	6,000	9,000	19,000	165,000	
331XX.20.92 Site Cleanup		30,000	1,000	2,000	4,000	38,000	
TOTAL Site Restoration		214,000	11,000	16,000	32,000	273,000	
331XX.21 Demobilization							
331XX.21.01 Removal Of Temporary Facilities		55,000	3,000	4,000	8,000	70,000	
331XX.21.02 Removal Of Temporary Utilities		14,000	1,000	1,000	2,000	18,000	
331XX.21.04 Demob of Construction Equip/Facl		318,000	16,000	23,000	48,000	405,000	
331XX.21.06 Submittals		20,000	1,000	1,000	3,000	25,000	
TOTAL Demobilization		407,000	20,000	30,000	61,000	518,000	
TOTAL HTRW REMEDIAL ACTION (CONSTRUCT)		137,735,000	7,834,000	10069000	20733000	176,370,000	
332XX ENGINEERING DURING CONSTRUCTION							

** PROJECT OWNER SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
332XX.01 Engineering During Construction		1,388,000	69,000	106,000	235,000	1,798,000	
TOTAL ENGINEERING DURING CONSTRUCTION		1,388,000	69,000	106,000	235,000	1,798,000	
333XX CONSTRUCTION MANAGEMENT (S&A)							
333XX.01 CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	
TOTAL CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	
34XXX POST-REMEDIAL ACTION							
34XXX.20 Operation, Maint. & Monitoring							
34XXX.20.01 Final Status Surveys		8,776,000	0	2,247,000	0	11,023,000	
34XXX.20.02 Monitoring		686,000	0	176,000	0	862,000	
34XXX.20.03 Five Year Review		40,000	0	10,000	0	50,000	
34XXX.20.04 Post Remedial Site Supervision		237,000	0	61,000	0	298,000	
TOTAL Operation, Maint. & Monitoring		9,739,000	0	2,493,000	0	12,232,000	
TOTAL POST-REMEDIAL ACTION		9,739,000	0	2,493,000	0	12,232,000	
TOTAL Revised FSPP - North County		175,515,000	9,236,000	14711000	22375000	221,837,000	

** PROJECT OWNER SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY	UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS								
01XXX. G Rights of Entry/Temporary Permit								
01XXX. G.01 Rights of Entry Aquisition			140,000	7,000	11,000	0	157,000	
01XXX. G.02 Damages			140,000	7,000	11,000	0	157,000	
TOTAL Rights of Entry/Temporary Per			279,000	14,000	21,000	0	314,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENT			279,000	14,000	21,000	0	314,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION								
32XXX.10 Project Management			4,164,000	208,000	319,000	0	4,691,000	
32XXX.20 Investigations (PRP)			1,388,000	69,000	106,000	0	1,564,000	
32XXX.30 Remedial Design			11,105,000	555,000	851,000	0	12,511,000	
32XXX.40 Remedial Action Contracting			1,388,000	69,000	106,000	0	1,564,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACT			18,045,000	902,000	1,383,000	0	20,330,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)								
331XX.01 Mobilize and Preparatory Work								
331XX.01.01 Mob Construction Equip & Fac								
331XX.01.01.05 Permits			5,000	0	0	1,000	7,000	
331XX.01.01.07 Construction Equipment			235,000	12,000	18,000	40,000	304,000	
TOTAL Mob Construction Equip & Fac			240,000	12,000	18,000	41,000	311,000	
331XX.01.03 Submittals/Implementation Plans								
331XX.01.03.04 Environmental Protection Plan	8.00	EA	22,000	1,000	2,000	4,000	28,000	3556.84
331XX.01.03.05 Sedimintation Control Plan	8.00	EA	17,000	1,000	1,000	3,000	22,000	2747.05
331XX.01.03.08 Site Safety and Health Plan	8.00	EA	39,000	2,000	3,000	7,000	51,000	6393.52
331XX.01.03.13 General Site Work Plan	8.00	EA	11,000	1,000	1,000	2,000	14,000	1812.04
331XX.01.03.14 Quality Control Plan	8.00	EA	12,000	1,000	1,000	2,000	15,000	1870.01
331XX.01.03.38 Permits	8.00	EA	8,000	0	1,000	1,000	10,000	1291.17
TOTAL Submittals/Implementation Pla			109,000	5,000	8,000	18,000	141,000	
331XX.01.04 Setup/Construct Temp Facilities								
331XX.01.04.01 Office Trailers (contractor)	8.00	EA	16,000	1,000	1,000	3,000	21,000	2582.34
331XX.01.04.02 Storage Facilities	2.00	EA	13,000	1,000	1,000	2,000	17,000	8607.79

** PROJECT OWNER SUMMARY - ASSY CAT (Rounded to 1000's) **

		QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
331XX.01.04.10	Toilets	16.00 EA	2,000	0	0	0	3,000	172.16
331XX.01.04.11	Barricades		16,000	1,000	1,000	3,000	21,000	
331XX.01.04.28	Signs	16.00 EA	7,000	0	1,000	1,000	10,000	593.94
TOTAL	Setup/Construct Temp Faciliti		55,000	3,000	4,000	9,000	71,000	
331XX.01.05	Construct Temporary Utilities							
331XX.01.05.02	Power Connection/Distribution		5,000	0	0	1,000	7,000	
331XX.01.05.03	Telephone/Communication Dist.		1,000	0	0	0	1,000	
331XX.01.05.04	Water Connection/Distribution		5,000	0	0	1,000	7,000	
331XX.01.05.05	Sewer Connection/Distribution		3,000	0	0	1,000	4,000	
TOTAL	Construct Temporary Utilities		15,000	1,000	1,000	3,000	19,000	
TOTAL	Mobilize and Preparatory Work		418,000	21,000	32,000	71,000	542,000	
331XX.02	Monitor'g,Samplng,Test &Analysis							
331XX.02.90	Environmental Monitoring		4,169,000	208,000	304,000	625,000	5,307,000	
331XX.02.91	Additional Labor & Services		8,899,000	445,000	650,000	1,335,000	11,329,000	
TOTAL	Monitor'g,Samplng,Test &Analy		13,069,000	653,000	954,000	1,960,000	16,636,000	
331XX.03	Site Work							
331XX.03.03	Earthwork							
331XX.03.03.03	Backfill	348020.00 CY	433,000	22,000	32,000	65,000	551,000	1.58
331XX.03.03.04	Borrow	278416.00 CY	1,480,000	74,000	108,000	222,000	1,884,000	6.77
331XX.03.03.05	Hauling	348020.00 CY	1,779,000	89,000	130,000	267,000	2,264,000	6.51
331XX.03.03.08	Compaction	348020.00 CY	599,000	30,000	44,000	90,000	763,000	2.19
TOTAL	Earthwork	278416.00 CY	4,291,000	215,000	313,000	644,000	5,462,000	19.62
331XX.03.04	Roads							
331XX.03.04.01	Bituminous Surfacing	3645.00 TON	162,000	8,000	12,000	24,000	206,000	56.48
331XX.03.04.02	Prime Coat	2604.00 GAL	4,000	0	0	1,000	5,000	2.00
331XX.03.04.05	Base Course	3720.00 TON	48,000	2,000	4,000	7,000	62,000	16.53
331XX.03.04.06	Geotextile Fabric	9300.00 SY	26,000	1,000	2,000	4,000	33,000	3.60
331XX.03.04.11	Striping	12210.00 LF	3,000	0	0	0	4,000	0.33
331XX.03.04.90	Pavement Removal	9300.00 SY	107,000	5,000	8,000	16,000	136,000	14.64
331XX.03.04.91	Hauling of Pavement for Dispo	4030.00 CY	112,000	6,000	8,000	17,000	142,000	35.25
331XX.03.04.92	Traffic Control		7,000	0	1,000	1,000	9,000	
TOTAL	Roads	11307.00 SY	470,000	23,000	34,000	70,000	598,000	52.87

** PROJECT OWNER SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
331XX.03.90 Railroads							
331XX.03.90. 5 Railroad Track Removal		121,000	6,000	9,000	18,000	154,000	
331XX.03.90.10 Railroad Track Reinstallation		117,000	6,000	9,000	18,000	149,000	
TOTAL Railroads	2900.00 LF	238,000	12,000	17,000	36,000	303,000	104.52
331XX.03.91 Sheetpile Shoring	18265.00 SF	199,000	10,000	15,000	30,000	253,000	13.84
331XX.03.92 Additional Labor & Services							
331XX.03.92.15 Backfill		661,000	33,000	48,000	99,000	841,000	
TOTAL Additional Labor & Services		661,000	33,000	48,000	99,000	841,000	
331XX.03.93 Misc. Utility Relocations		332,000	17,000	24,000	50,000	423,000	
TOTAL Site Work		6,190,000	309,000	452,000	928,000	7,880,000	
331XX.05 Surface Water Collect & Control							
331XX.05.92 Additional Labor & Services							
331XX.05.92. 5 Water Management		1,167,000	58,000	89,000	197,000	1,512,000	
331XX.05.92.10 Water Treatment		2,241,000	112,000	172,000	379,000	2,903,000	
TOTAL Additional Labor & Services		3,408,000	170,000	261,000	576,000	4,415,000	
TOTAL Surface Water Collect & Contr		3,408,000	170,000	261,000	576,000	4,415,000	
331XX.08 Solids Collect and Containment							
331XX.08.01 Contaminated Soil Collection							
331XX.08.01.02 Excavation	278416.00 CY	1,226,000	307,000	90,000	184,000	1,807,000	6.49
331XX.08.01.03 Hauling	348020.00 CY	889,000	222,000	65,000	133,000	1,310,000	3.76
331XX.08.01.90 Additional Labor & Services		2,621,000	655,000	191,000	393,000	3,860,000	
TOTAL Contaminated Soil Collection	278416.00 CY	4,736,000	1,184,000	346,000	710,000	6,977,000	25.06
TOTAL Solids Collect and Containmen		4,736,000	1,184,000	346,000	710,000	6,977,000	
331XX.19 Disposal (Commercial)							
331XX.19.21 Transport to Storage/Disp Facil							
331XX.19.21.01 Loading of Solids	348020.00 CY	6,027,000	301,000	440,000	904,000	7,673,000	22.05

** PROJECT OWNER SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
331XX.19.21.90 Transportation Costs	348020.00 CY	39,602,000	1,980,000	2,891,000	5,940,000	50,413,000	144.86
TOTAL Transport to Storage/Disp Fac	348020.00 CY	45,629,000	2,281,000	3,331,000	6,844,000	58,086,000	166.90
331XX.19.22 Disposal Fees and Taxes							
331XX.19.22.01 Landfill/Burial Grounds	348020.00 CY	46,936,000	2,347,000	3,426,000	7,040,000	59,749,000	171.68
TOTAL Disposal Fees and Taxes	348020.00 CY	46,936,000	2,347,000	3,426,000	7,040,000	59,749,000	171.68
331XX.19.90 Transportation and Disposal of							
331XX.19.90.01 VP-1L (Wagner Brake)		5,613,000	281,000	410,000	842,000	7,145,000	
331XX.19.90.02 VP-2L (GIFREHC)		3,986,000	199,000	291,000	598,000	5,074,000	
331XX.19.90.03 VP-3L		3,266,000	163,000	238,000	490,000	4,158,000	
331XX.19.90.04 VP-4L		1,829,000	91,000	133,000	274,000	2,328,000	
331XX.19.90.05 VP-5L		2,033,000	102,000	148,000	305,000	2,588,000	
TOTAL Transportation and Disposal o		16,727,000	836,000	1,221,000	2,509,000	21,293,000	
TOTAL Disposal (Commercial)		109,292,000	5,465,000	7,978,000	16394000	139,128,000	
331XX.20 Site Restoration							
331XX.20.01 Earthwork							
331XX.20.01.07 Grading	65.00 ACR	55,000	3,000	4,000	8,000	69,000	1068.11
TOTAL Earthwork		55,000	3,000	4,000	8,000	69,000	
331XX.20.04 Revegetation And Planting							
331XX.20.04.01 Seeding/Mulch/Fertilizer	65.00 ACR	87,000	4,000	6,000	13,000	110,000	1699.55
331XX.20.04.02 Miscelaneous Landscaping	65.00 ACR	43,000	2,000	3,000	6,000	55,000	845.73
TOTAL Revegetation And Planting		130,000	6,000	9,000	19,000	165,000	
331XX.20.92 Site Cleanup		30,000	1,000	2,000	4,000	38,000	
TOTAL Site Restoration		214,000	11,000	16,000	32,000	273,000	
331XX.21 Demobilization							
331XX.21.01 Removal Of Temporary Facilities							
331XX.21.01.01 Office Trailers (contr.'s onl	8.00 EA	8,000	0	1,000	1,000	10,000	1268.60

** PROJECT OWNER SUMMARY - ASSY CAT (Rounded to 1000's) **

		QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
331XX.21.01.02	Storage Facilities	2.00 EA	7,000	0	0	1,000	8,000	4228.66
331XX.21.01.05	Decon. Fac. for Const. Equip		20,000	1,000	1,000	3,000	25,000	
331XX.21.01.10	Toilets	16.00 EA	2,000	0	0	0	3,000	169.15
331XX.21.01.11	Barricades		16,000	1,000	1,000	2,000	20,000	
331XX.21.01.28	Signs	16.00 EA	2,000	0	0	0	3,000	169.15
	TOTAL Removal Of Temporary Faciliti		55,000	3,000	4,000	8,000	70,000	
331XX.21.02	Removal Of Temporary Utilities							
331XX.21.02.02	Power Connection/Distribution		5,000	0	0	1,000	7,000	
331XX.21.02.03	Telephone/Communication Dist.		1,000	0	0	0	1,000	
331XX.21.02.04	Water Connection/Distribution		5,000	0	0	1,000	7,000	
331XX.21.02.05	Sewer Connection/Distribution		3,000	0	0	0	4,000	
	TOTAL Removal Of Temporary Utilitie		14,000	1,000	1,000	2,000	18,000	
331XX.21.04	Demob of Construction Equip/Facl							
331XX.21.04.05	Permits		5,000	0	0	1,000	7,000	
331XX.21.04.07	Demob. of Construction Equipm		142,000	7,000	10,000	21,000	181,000	
331XX.21.04.90	Decon. of Construction Equipm		171,000	9,000	12,000	26,000	218,000	
	TOTAL Demob of Construction Equip/F		318,000	16,000	23,000	48,000	405,000	
331XX.21.06	Submittals							
331XX.21.06.03	Project Acceptance	8.00 EA	20,000	1,000	1,000	3,000	25,000	3146.37
	TOTAL Submittals		20,000	1,000	1,000	3,000	25,000	
	TOTAL Demobilization		407,000	20,000	30,000	61,000	518,000	
	TOTAL HTRW REMEDIAL ACTION (CONSTRU		137,735,000	7,834,000	10069000	20733000	176,370,000	
332XX	ENGINEERING DURING CONSTRUCTION							
332XX.01	Engineering During Construction		1,388,000	69,000	106,000	235,000	1,798,000	
	TOTAL ENGINEERING DURING CONSTRUCTI		1,388,000	69,000	106,000	235,000	1,798,000	
333XX	CONSTRUCTION MANAGEMENT (S&A)							
333XX.01	CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	
	TOTAL CONSTRUCTION MANAGEMENT (S&A)		8,329,000	416,000	638,000	1,408,000	10,791,000	

** PROJECT OWNER SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	CONTRACT	DES CONT	ESCALATN	CON CONT	TOTAL COST	UNIT COST
34XXX POST-REMEDIAL ACTION							
34XXX.20 Operation, Maint. & Monitoring							
34XXX.20.01 Final Status Surveys							
34XXX.20.01. 5 North County Properties		3,563,000	0	912,000	0	4,475,000	
34XXX.20.01.10 Coldwater Creek		3,590,000	0	919,000	0	4,510,000	
34XXX.20.01.15 North County Buildings		963,000	0	247,000	0	1,209,000	
34XXX.20.01.20 Roads		660,000	0	169,000	0	829,000	
TOTAL Final Status Surveys		8,776,000	0	2,247,000	0	11,023,000	
34XXX.20.02 Monitoring		686,000	0	176,000	0	862,000	
34XXX.20.03 Five Year Review		40,000	0	10,000	0	50,000	
34XXX.20.04 Post Remedial Site Supervision		237,000	0	61,000	0	298,000	
TOTAL Operation, Maint. & Monitorin		9,739,000	0	2,493,000	0	12,232,000	
TOTAL POST-REMEDIAL ACTION		9,739,000	0	2,493,000	0	12,232,000	
TOTAL Revised FSPP - North County		175,515,000	9,236,000	14711000	22375000	221,837,000	

** PROJECT INDIRECT SUMMARY - ACCOUNT (Rounded to 1000's) **

		QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS		279,000	0	0	0	279,000	
32XXX	PROJ. MANG.& PRE-REMEDIAL ACTION		18,045,000	0	0	0	18,045,000	
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)		103,659,000	12157000	11929000	9,990,000	137,735,000	
332XX	ENGINEERING DURING CONSTRUCTION		1,388,000	0	0	0	1,388,000	
333XX	CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	
34XXX	POST-REMEDIAL ACTION		9,739,000	0	0	0	9,739,000	
TOTAL	Revised FSPP - North County		141,440,000	12157000	11929000	9,990,000	175,515,000	
	Design Contingencies						9,236,000	
	SUBTOTAL						184,751,000	
	Escalation to Const. Midpoint						14,711,000	
	SUBTOTAL						199,462,000	
	Construction Contingencies						22,375,000	
	TOTAL INCL OWNER COSTS						221,837,000	

** PROJECT INDIRECT SUMMARY - SYSTEM (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS							
01XXX. G Rights of Entry/Temporary Permit		279,000	0	0	0	279,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENTS		279,000	0	0	0	279,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION							
32XXX.10 Project Management		4,164,000	0	0	0	4,164,000	
32XXX.20 Investigations (PRP)		1,388,000	0	0	0	1,388,000	
32XXX.30 Remedial Design		11,105,000	0	0	0	11,105,000	
32XXX.40 Remedial Action Contracting		1,388,000	0	0	0	1,388,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACTION		18,045,000	0	0	0	18,045,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)							
331XX.01 Mobilize and Preparatory Work		315,000	37,000	36,000	30,000	418,000	
331XX.02 Monitor'g,Samplng,Test &Analysis		9,836,000	1,153,000	1,132,000	948,000	13,069,000	
331XX.03 Site Work		4,659,000	546,000	536,000	449,000	6,190,000	
331XX.05 Surface Water Collect & Control		2,565,000	301,000	295,000	247,000	3,408,000	
331XX.08 Solids Collect and Containment		3,565,000	418,000	410,000	344,000	4,736,000	
331XX.19 Disposal (Commercial)		82,253,000	9,646,000	9,466,000	7,927,000	109,292,000	
331XX.20 Site Restoration		161,000	19,000	19,000	16,000	214,000	
331XX.21 Demobilization		306,000	36,000	35,000	30,000	407,000	
TOTAL HTRW REMEDIAL ACTION (CONSTRUCT)		103,659,000	12157000	11929000	9,990,000	137,735,000	
332XX ENGINEERING DURING CONSTRUCTION							
332XX.01 Engineering During Construction		1,388,000	0	0	0	1,388,000	
TOTAL ENGINEERING DURING CONSTRUCTION		1,388,000	0	0	0	1,388,000	
333XX CONSTRUCTION MANAGEMENT (S&A)							
333XX.01 CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	
TOTAL CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	
34XXX POST-REMEDIAL ACTION							
34XXX.20 Operation, Maint. & Monitoring		9,739,000	0	0	0	9,739,000	

** PROJECT INDIRECT SUMMARY - SYSTEM (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
TOTAL POST-REMEDIAL ACTION		9,739,000	0	0	0	9,739,000	
TOTAL Revised FSPP - North County		141,440,000	12157000	11929000	9,990,000	175,515,000	
Design Contingencies						9,236,000	
SUBTOTAL						184,751,000	
Escalation to Const. Midpoint						14,711,000	
SUBTOTAL						199,462,000	
Construction Contingencies						22,375,000	
TOTAL INCL OWNER COSTS						221,837,000	

** PROJECT INDIRECT SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS							
01XXX. G Rights of Entry/Temporary Permit							
01XXX. G.01 Rights of Entry Aquisition		140,000	0	0	0	140,000	
01XXX. G.02 Damages		140,000	0	0	0	140,000	
TOTAL Rights of Entry/Temporary Permit		279,000	0	0	0	279,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENTS		279,000	0	0	0	279,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION							
32XXX.10 Project Management		4,164,000	0	0	0	4,164,000	
32XXX.20 Investigations (PRP)		1,388,000	0	0	0	1,388,000	
32XXX.30 Remedial Design		11,105,000	0	0	0	11,105,000	
32XXX.40 Remedial Action Contracting		1,388,000	0	0	0	1,388,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACTION		18,045,000	0	0	0	18,045,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)							
331XX.01 Mobilize and Preparatory Work							
331XX.01.01 Mob Construction Equip & Fac		181,000	21,000	21,000	17,000	240,000	
331XX.01.03 Submittals/Implementation Plans		82,000	10,000	9,000	8,000	109,000	
331XX.01.04 Setup/Construct Temp Facilities		41,000	5,000	5,000	4,000	55,000	
331XX.01.05 Construct Temporary Utilities		11,000	1,000	1,000	1,000	15,000	
TOTAL Mobilize and Preparatory Work		315,000	37,000	36,000	30,000	418,000	
331XX.02 Monitor'g,Samplng,Test &Analysis							
331XX.02.90 Environmental Monitoring		3,138,000	368,000	361,000	302,000	4,169,000	
331XX.02.91 Additional Labor & Services		6,698,000	785,000	771,000	645,000	8,899,000	
TOTAL Monitor'g,Samplng,Test &Analysis		9,836,000	1,153,000	1,132,000	948,000	13,069,000	
331XX.03 Site Work							
331XX.03.03 Earthwork	278416.00 CY	3,229,000	379,000	372,000	311,000	4,291,000	15.41
331XX.03.04 Roads	11307.00 SY	353,000	41,000	41,000	34,000	470,000	41.53
331XX.03.90 Railroads	2900.00 LF	179,000	21,000	21,000	17,000	238,000	82.10
331XX.03.91 Sheetpile Shoring	18265.00 SF	149,000	18,000	17,000	14,000	199,000	10.88
331XX.03.92 Additional Labor & Services		497,000	58,000	57,000	48,000	661,000	

** PROJECT INDIRECT SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
331XX.03.93 Misc. Utility Relocations		250,000	29,000	29,000	24,000	332,000	
TOTAL Site Work		4,659,000	546,000	536,000	449,000	6,190,000	
331XX.05 Surface Water Collect & Control							
331XX.05.92 Additional Labor & Services		2,565,000	301,000	295,000	247,000	3,408,000	
TOTAL Surface Water Collect & Control		2,565,000	301,000	295,000	247,000	3,408,000	
331XX.08 Solids Collect and Containment							
331XX.08.01 Contaminated Soil Collection	278416.00 CY	3,565,000	418,000	410,000	344,000	4,736,000	17.01
TOTAL Solids Collect and Containment		3,565,000	418,000	410,000	344,000	4,736,000	
331XX.19 Disposal (Commercial)							
331XX.19.21 Transport to Storage/Disp Facil	348020.00 CY	34,340,000	4,027,000	3,952,000	3,309,000	45,629,000	131.11
331XX.19.22 Disposal Fees and Taxes	348020.00 CY	35,324,000	4,143,000	4,065,000	3,404,000	46,936,000	134.87
331XX.19.90 Transportation and Disposal of		12,589,000	1,476,000	1,449,000	1,213,000	16,727,000	
TOTAL Disposal (Commercial)		82,253,000	9,646,000	9,466,000	7,927,000	109,292,000	
331XX.20 Site Restoration							
331XX.20.01 Earthwork		41,000	5,000	5,000	4,000	55,000	
331XX.20.04 Revegetation And Planting		98,000	11,000	11,000	9,000	130,000	
331XX.20.92 Site Cleanup		23,000	3,000	3,000	2,000	30,000	
TOTAL Site Restoration		161,000	19,000	19,000	16,000	214,000	
331XX.21 Demobilization							
331XX.21.01 Removal Of Temporary Facilities		41,000	5,000	5,000	4,000	55,000	
331XX.21.02 Removal Of Temporary Utilities		11,000	1,000	1,000	1,000	14,000	
331XX.21.04 Demob of Construction Equip/Facl		239,000	28,000	28,000	23,000	318,000	
331XX.21.06 Submittals		15,000	2,000	2,000	1,000	20,000	
TOTAL Demobilization		306,000	36,000	35,000	30,000	407,000	
TOTAL HTRW REMEDIAL ACTION (CONSTRUCT)		103,659,000	12157000	11929000	9,990,000	137,735,000	
332XX ENGINEERING DURING CONSTRUCTION							

** PROJECT INDIRECT SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
332XX.01 Engineering During Construction		1,388,000	0	0	0	1,388,000	
TOTAL ENGINEERING DURING CONSTRUCTION		1,388,000	0	0	0	1,388,000	
333XX CONSTRUCTION MANAGEMENT (S&A)							
333XX.01 CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	
TOTAL CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	
34XXX POST-REMEDIAL ACTION							
34XXX.20 Operation, Maint. & Monitoring							
34XXX.20.01 Final Status Surveys		8,776,000	0	0	0	8,776,000	
34XXX.20.02 Monitoring		686,000	0	0	0	686,000	
34XXX.20.03 Five Year Review		40,000	0	0	0	40,000	
34XXX.20.04 Post Remedial Site Supervision		237,000	0	0	0	237,000	
TOTAL Operation, Maint. & Monitoring		9,739,000	0	0	0	9,739,000	
TOTAL POST-REMEDIAL ACTION		9,739,000	0	0	0	9,739,000	
TOTAL Revised FSPP - North County		141,440,000	12157000	11929000	9,990,000	175,515,000	
Design Contingencies						9,236,000	
SUBTOTAL						184,751,000	
Escalation to Const. Midpoint						14,711,000	
SUBTOTAL						199,462,000	
Construction Contingencies						22,375,000	
TOTAL INCL OWNER COSTS						221,837,000	

** PROJECT INDIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS							
01XXX. G Rights of Entry/Temporary Permit							
01XXX. G.01 Rights of Entry Aquisition		140,000	0	0	0	140,000	
01XXX. G.02 Damages		140,000	0	0	0	140,000	
TOTAL Rights of Entry/Temporary Per		279,000	0	0	0	279,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENT		279,000	0	0	0	279,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION							
32XXX.10 Project Management		4,164,000	0	0	0	4,164,000	
32XXX.20 Investigations (PRP)		1,388,000	0	0	0	1,388,000	
32XXX.30 Remedial Design		11,105,000	0	0	0	11,105,000	
32XXX.40 Remedial Action Contracting		1,388,000	0	0	0	1,388,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACT		18,045,000	0	0	0	18,045,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)							
331XX.01 Mobilize and Preparatory Work							
331XX.01.01 Mob Construction Equip & Fac							
331XX.01.01.05 Permits		4,000	0	0	0	5,000	
331XX.01.01.07 Construction Equipment		177,000	21,000	20,000	17,000	235,000	
TOTAL Mob Construction Equip & Fac		181,000	21,000	21,000	17,000	240,000	
331XX.01.03 Submittals/Implementation Plans							
331XX.01.03.04 Environmental Protection Plan	8.00 EA	17,000	2,000	2,000	2,000	22,000	2745.22
331XX.01.03.05 Sedimintation Control Plan	8.00 EA	13,000	1,000	1,000	1,000	17,000	2120.21
331XX.01.03.08 Site Safety and Health Plan	8.00 EA	30,000	3,000	3,000	3,000	39,000	4934.61
331XX.01.03.13 General Site Work Plan	8.00 EA	8,000	1,000	1,000	1,000	11,000	1398.56
331XX.01.03.14 Quality Control Plan	8.00 EA	9,000	1,000	1,000	1,000	12,000	1443.30
331XX.01.03.38 Permits	8.00 EA	6,000	1,000	1,000	1,000	8,000	996.54
TOTAL Submittals/Implementation Pla		82,000	10,000	9,000	8,000	109,000	
331XX.01.04 Setup/Construct Temp Facilities							
331XX.01.04.01 Office Trailers (contractor)	8.00 EA	12,000	1,000	1,000	1,000	16,000	1993.09
331XX.01.04.02 Storage Facilities	2.00 EA	10,000	1,000	1,000	1,000	13,000	6643.62

** PROJECT INDIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

		QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
331XX.01.04.10	Toilets	16.00 EA	2,000	0	0	0	2,000	132.87
331XX.01.04.11	Barricades		12,000	1,000	1,000	1,000	16,000	
331XX.01.04.28	Signs	16.00 EA	6,000	1,000	1,000	1,000	7,000	458.41
	TOTAL Setup/Construct Temp Faciliti		41,000	5,000	5,000	4,000	55,000	
331XX.01.05	Construct Temporary Utilities							
331XX.01.05.02	Power Connection/Distribution		4,000	0	0	0	5,000	
331XX.01.05.03	Telephone/Communication Dist.		1,000	0	0	0	1,000	
331XX.01.05.04	Water Connection/Distribution		4,000	0	0	0	5,000	
331XX.01.05.05	Sewer Connection/Distribution		2,000	0	0	0	3,000	
	TOTAL Construct Temporary Utilities		11,000	1,000	1,000	1,000	15,000	
	TOTAL Mobilize and Preparatory Work		315,000	37,000	36,000	30,000	418,000	
331XX.02	Monitor'g,Samplng,Test &Analysis							
331XX.02.90	Environmental Monitoring		3,138,000	368,000	361,000	302,000	4,169,000	
331XX.02.91	Additional Labor & Services		6,698,000	785,000	771,000	645,000	8,899,000	
	TOTAL Monitor'g,Samplng,Test &Analy		9,836,000	1,153,000	1,132,000	948,000	13,069,000	
331XX.03	Site Work							
331XX.03.03	Earthwork							
331XX.03.03.03	Backfill	348020.00 CY	326,000	38,000	37,000	31,000	433,000	1.24
331XX.03.03.04	Borrow	278416.00 CY	1,114,000	131,000	128,000	107,000	1,480,000	5.31
331XX.03.03.05	Hauling	348020.00 CY	1,339,000	157,000	154,000	129,000	1,779,000	5.11
331XX.03.03.08	Compaction	348020.00 CY	451,000	53,000	52,000	43,000	599,000	1.72
	TOTAL Earthwork	278416.00 CY	3,229,000	379,000	372,000	311,000	4,291,000	15.41
331XX.03.04	Roads							
331XX.03.04.01	Bituminous Surfacing	3645.00 TON	122,000	14,000	14,000	12,000	162,000	44.37
331XX.03.04.02	Prime Coat	2604.00 GAL	3,000	0	0	0	4,000	1.57
331XX.03.04.05	Base Course	3720.00 TON	36,000	4,000	4,000	4,000	48,000	12.99
331XX.03.04.06	Geotextile Fabric	9300.00 SY	20,000	2,000	2,000	2,000	26,000	2.83
331XX.03.04.11	Striping	12210.00 LF	2,000	0	0	0	3,000	0.26
331XX.03.04.90	Pavement Removal	9300.00 SY	81,000	9,000	9,000	8,000	107,000	11.50
331XX.03.04.91	Hauling of Pavement for Dispo	4030.00 CY	84,000	10,000	10,000	8,000	112,000	27.69
331XX.03.04.92	Traffic Control		6,000	1,000	1,000	1,000	7,000	
	TOTAL Roads	11307.00 SY	353,000	41,000	41,000	34,000	470,000	41.53

** PROJECT INDIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
331XX.03.90 Railroads							
331XX.03.90. 5 Railroad Track Removal		91,000	11,000	10,000	9,000	121,000	
331XX.03.90.10 Railroad Track Reinstallation		88,000	10,000	10,000	8,000	117,000	
TOTAL Railroads	2900.00 LF	179,000	21,000	21,000	17,000	238,000	82.10
331XX.03.91 Sheetpile Shoring	18265.00 SF	149,000	18,000	17,000	14,000	199,000	10.88
331XX.03.92 Additional Labor & Services							
331XX.03.92.15 Backfill		497,000	58,000	57,000	48,000	661,000	
TOTAL Additional Labor & Services		497,000	58,000	57,000	48,000	661,000	
331XX.03.93 Misc. Utility Relocations		250,000	29,000	29,000	24,000	332,000	
TOTAL Site Work		4,659,000	546,000	536,000	449,000	6,190,000	
331XX.05 Surface Water Collect & Control							
331XX.05.92 Additional Labor & Services							
331XX.05.92. 5 Water Management		879,000	103,000	101,000	85,000	1,167,000	
331XX.05.92.10 Water Treatment		1,686,000	198,000	194,000	163,000	2,241,000	
TOTAL Additional Labor & Services		2,565,000	301,000	295,000	247,000	3,408,000	
TOTAL Surface Water Collect & Contr		2,565,000	301,000	295,000	247,000	3,408,000	
331XX.08 Solids Collect and Containment							
331XX.08.01 Contaminated Soil Collection							
331XX.08.01.02 Excavation	278416.00 CY	923,000	108,000	106,000	89,000	1,226,000	4.40
331XX.08.01.03 Hauling	348020.00 CY	669,000	79,000	77,000	65,000	889,000	2.56
331XX.08.01.90 Additional Labor & Services		1,972,000	231,000	227,000	190,000	2,621,000	
TOTAL Contaminated Soil Collection	278416.00 CY	3,565,000	418,000	410,000	344,000	4,736,000	17.01
TOTAL Solids Collect and Containmen		3,565,000	418,000	410,000	344,000	4,736,000	
331XX.19 Disposal (Commercial)							
331XX.19.21 Transport to Storage/Disp Facil							
331XX.19.21.01 Loading of Solids	348020.00 CY	4,536,000	532,000	522,000	437,000	6,027,000	17.32

** PROJECT INDIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
331XX.19.21.90 Transportation Costs	348020.00 CY	29,804,000	3,495,000	3,430,000	2,872,000	39,602,000	113.79
TOTAL Transport to Storage/Disp Fac	348020.00 CY	34,340,000	4,027,000	3,952,000	3,309,000	45,629,000	131.11
331XX.19.22 Disposal Fees and Taxes							
331XX.19.22.01 Landfill/Burial Grounds	348020.00 CY	35,324,000	4,143,000	4,065,000	3,404,000	46,936,000	134.87
TOTAL Disposal Fees and Taxes	348020.00 CY	35,324,000	4,143,000	4,065,000	3,404,000	46,936,000	134.87
331XX.19.90 Transportation and Disposal of							
331XX.19.90.01 VP-1L (Wagner Brake)		4,224,000	495,000	486,000	407,000	5,613,000	
331XX.19.90.02 VP-2L (GIFREHC)		3,000,000	352,000	345,000	289,000	3,986,000	
331XX.19.90.03 VP-3L		2,458,000	288,000	283,000	237,000	3,266,000	
331XX.19.90.04 VP-4L		1,376,000	161,000	158,000	133,000	1,829,000	
331XX.19.90.05 VP-5L		1,530,000	179,000	176,000	147,000	2,033,000	
TOTAL Transportation and Disposal o		12,589,000	1,476,000	1,449,000	1,213,000	16,727,000	
TOTAL Disposal (Commercial)		82,253,000	9,646,000	9,466,000	7,927,000	109,292,000	
331XX.20 Site Restoration							
331XX.20.01 Earthwork							
331XX.20.01.07 Grading	65.00 ACR	41,000	5,000	5,000	4,000	55,000	839.05
TOTAL Earthwork		41,000	5,000	5,000	4,000	55,000	
331XX.20.04 Revegetation And Planting							
331XX.20.04.01 Seeding/Mulch/Fertilizer	65.00 ACR	65,000	8,000	8,000	6,000	87,000	1335.07
331XX.20.04.02 Miscelaneous Landscaping	65.00 ACR	33,000	4,000	4,000	3,000	43,000	664.36
TOTAL Revegetation And Planting		98,000	11,000	11,000	9,000	130,000	
331XX.20.92 Site Cleanup		23,000	3,000	3,000	2,000	30,000	
TOTAL Site Restoration		161,000	19,000	19,000	16,000	214,000	
331XX.21 Demobilization							
331XX.21.01 Removal Of Temporary Facilities							
331XX.21.01.01 Office Trailers (contr.'s onl	8.00 EA	6,000	1,000	1,000	1,000	8,000	996.54

** PROJECT INDIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

		QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
331XX.21.01.02	Storage Facilities	2.00 EA	5,000	1,000	1,000	0	7,000	3321.81
331XX.21.01.05	Decon. Fac. for Const. Equip		15,000	2,000	2,000	1,000	20,000	
331XX.21.01.10	Toilets	16.00 EA	2,000	0	0	0	2,000	132.87
331XX.21.01.11	Barricades		12,000	1,000	1,000	1,000	16,000	
331XX.21.01.28	Signs	16.00 EA	2,000	0	0	0	2,000	132.87
	TOTAL Removal Of Temporary Faciliti		41,000	5,000	5,000	4,000	55,000	
331XX.21.02	Removal Of Temporary Utilities							
331XX.21.02.02	Power Connection/Distribution		4,000	0	0	0	5,000	
331XX.21.02.03	Telephone/Communication Dist.		0	0	0	0	1,000	
331XX.21.02.04	Water Connection/Distribution		4,000	0	0	0	5,000	
331XX.21.02.05	Sewer Connection/Distribution		2,000	0	0	0	3,000	
	TOTAL Removal Of Temporary Utilitie		11,000	1,000	1,000	1,000	14,000	
331XX.21.04	Demob of Construction Equip/Facl							
331XX.21.04.05	Permits		4,000	0	0	0	5,000	
331XX.21.04.07	Demob. of Construction Equipm		107,000	13,000	12,000	10,000	142,000	
331XX.21.04.90	Decon. of Construction Equipm		129,000	15,000	15,000	12,000	171,000	
	TOTAL Demob of Construction Equip/F		239,000	28,000	28,000	23,000	318,000	
331XX.21.06	Submittals							
331XX.21.06.03	Project Acceptance	8.00 EA	15,000	2,000	2,000	1,000	20,000	2471.62
	TOTAL Submittals		15,000	2,000	2,000	1,000	20,000	
	TOTAL Demobilization		306,000	36,000	35,000	30,000	407,000	
	TOTAL HTRW REMEDIAL ACTION (CONSTRU		103,659,000	12157000	11929000	9,990,000	137,735,000	
332XX	ENGINEERING DURING CONSTRUCTION							
332XX.01	Engineering During Construction		1,388,000	0	0	0	1,388,000	
	TOTAL ENGINEERING DURING CONSTRUCTI		1,388,000	0	0	0	1,388,000	
333XX	CONSTRUCTION MANAGEMENT (S&A)							
333XX.01	CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	
	TOTAL CONSTRUCTION MANAGEMENT (S&A)		8,329,000	0	0	0	8,329,000	

** PROJECT INDIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	DIRECT	FIELD OF	G&A	FEE	TOTAL COST	UNIT COST
34XXX POST-REMEDIAL ACTION							
34XXX.20 Operation, Maint. & Monitoring							
34XXX.20.01 Final Status Surveys							
34XXX.20.01. 5 North County Properties		3,563,000	0	0	0	3,563,000	
34XXX.20.01.10 Coldwater Creek		3,590,000	0	0	0	3,590,000	
34XXX.20.01.15 North County Buildings		963,000	0	0	0	963,000	
34XXX.20.01.20 Roads		660,000	0	0	0	660,000	
TOTAL Final Status Surveys		8,776,000	0	0	0	8,776,000	
34XXX.20.02 Monitoring		686,000	0	0	0	686,000	
34XXX.20.03 Five Year Review		40,000	0	0	0	40,000	
34XXX.20.04 Post Remedial Site Supervision		237,000	0	0	0	237,000	
TOTAL Operation, Maint. & Monitorin		9,739,000	0	0	0	9,739,000	
TOTAL POST-REMEDIAL ACTION		9,739,000	0	0	0	9,739,000	
TOTAL Revised FSPP - North County		141,440,000	12157000	11929000	9,990,000	175,515,000	
Design Contingencies						9,236,000	
SUBTOTAL						184,751,000	
Escalation to Const. Midpoint						14,711,000	
SUBTOTAL						199,462,000	
Construction Contingencies						22,375,000	
TOTAL INCL OWNER COSTS						221,837,000	

** PROJECT DIRECT SUMMARY - ACCOUNT (Rounded to 1000's) **

		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS			0	0	0	0	279,000	279,000	
32XXX	PROJ. MANG.& PRE-REMEDIAL ACTION			0	0	0	0	18045000	18,045,000	
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)			108,000	7,348,000	2,894,000	3,561,000	89857000	103,659,000	
332XX	ENGINEERING DURING CONSTRUCTION			0	0	0	0	1,388,000	1,388,000	
333XX	CONSTRUCTION MANAGEMENT (S&A)			0	0	0	0	8,329,000	8,329,000	
34XXX	POST-REMEDIAL ACTION			0	0	0	0	9,739,000	9,739,000	
	TOTAL Revised FSPP - North County			108,000	7,348,000	2,894,000	3,561,000	127637000	141,440,000	

Field Ofc. Overhead	12,157,000
SUBTOTAL	153,596,000
General and Administrative Overhead	11,929,000
SUBTOTAL	165,525,000
Fee	9,990,000
TOTAL INCL INDIRECTS	175,515,000
Design Contingencies	9,236,000
SUBTOTAL	184,751,000
Escalation to Const. Midpoint	14,711,000
SUBTOTAL	199,462,000
Construction Contingencies	22,375,000
TOTAL INCL OWNER COSTS	221,837,000

** PROJECT DIRECT SUMMARY - SYSTEM (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS									
01XXX. G Rights of Entry/Temporary Per			0	0	0	0	279,000	279,000	
TOTAL REAL ESTATE ANALYSIS/DOCUMENT			0	0	0	0	279,000	279,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION									
32XXX.10 Project Management			0	0	0	0	4,164,000	4,164,000	
32XXX.20 Investigations (PRP)			0	0	0	0	1,388,000	1,388,000	
32XXX.30 Remedial Design			0	0	0	0	11105000	11,105,000	
32XXX.40 Remedial Action Contracting			0	0	0	0	1,388,000	1,388,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL ACT			0	0	0	0	18045000	18,045,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)									
331XX.01 Mobilize and Preparatory Work			4,000	166,000	87,000	0	62,000	315,000	
331XX.02 Monitor'g,Samplng,Test &Analy			0	0	0	0	9,836,000	9,836,000	
331XX.03 Site Work			34,000	1,452,000	1,121,000	1,401,000	685,000	4,659,000	
331XX.05 Surface Water Collect & Contr			0	1,484,000	0	65,000	1,016,000	2,565,000	
331XX.08 Solids Collect and Containmen			18,000	2,212,000	900,000	0	453,000	3,565,000	
331XX.19 Disposal (Commercial)			46,000	1,845,000	646,000	2,045,000	77717000	82,253,000	
331XX.20 Site Restoration			1,000	52,000	26,000	50,000	33,000	161,000	
331XX.21 Demobilization			4,000	137,000	114,000	0	56,000	306,000	
TOTAL HTRW REMEDIAL ACTION (CONSTRU			108,000	7,348,000	2,894,000	3,561,000	89857000	103,659,000	
332XX ENGINEERING DURING CONSTRUCTION									
332XX.01 Engineering During Constructi			0	0	0	0	1,388,000	1,388,000	
TOTAL ENGINEERING DURING CONSTRUCTI			0	0	0	0	1,388,000	1,388,000	
333XX CONSTRUCTION MANAGEMENT (S&A)									
333XX.01 CONSTRUCTION MANAGEMENT (S&A)			0	0	0	0	8,329,000	8,329,000	
TOTAL CONSTRUCTION MANAGEMENT (S&A)			0	0	0	0	8,329,000	8,329,000	
34XXX POST-REMEDIAL ACTION									
34XXX.20 Operation, Maint. & Monitorin			0	0	0	0	9,739,000	9,739,000	

** PROJECT DIRECT SUMMARY - SYSTEM (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
TOTAL POST-REMEDIAL ACTION			0	0	0	0	9,739,000	9,739,000	
TOTAL Revised FSPP - North County			108,000	7,348,000	2,894,000	3,561,000	127637000	141,440,000	
Field Ofc. Overhead								12,157,000	
SUBTOTAL								153,596,000	
General and Administrative Overhead								11,929,000	
SUBTOTAL								165,525,000	
Fee								9,990,000	
TOTAL INCL INDIRECTS								175,515,000	
Design Contingencies								9,236,000	
SUBTOTAL								184,751,000	
Escalation to Const. Midpoint								14,711,000	
SUBTOTAL								199,462,000	
Construction Contingencies								22,375,000	
TOTAL INCL OWNER COSTS								221,837,000	

** PROJECT DIRECT SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS									
01XXX. G Rights of Entry/Temporary Per									
01XXX. G.01 Rights of Entry Aquisition			0	0	0	0	140,000	140,000	
01XXX. G.02 Damages			0	0	0	0	140,000	140,000	
TOTAL Rights of Entry/Temporary			0	0	0	0	279,000	279,000	
TOTAL REAL ESTATE ANALYSIS/DOCUM			0	0	0	0	279,000	279,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION									
32XXX.10 Project Management			0	0	0	0	4,164,000	4,164,000	
32XXX.20 Investigations (PRP)			0	0	0	0	1,388,000	1,388,000	
32XXX.30 Remedial Design			0	0	0	0	11105000	11,105,000	
32XXX.40 Remedial Action Contracting			0	0	0	0	1,388,000	1,388,000	
TOTAL PROJ. MANG.& PRE-REMEDIAL			0	0	0	0	18045000	18,045,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)									
331XX.01 Mobilize and Preparatory Work									
331XX.01.01 Mob Construction Equip & F			2,000	90,000	87,000	0	4,000	181,000	
331XX.01.03 Submittals/Implementation			2,000	76,000	0	0	6,000	82,000	
331XX.01.04 Setup/Construct Temp Facil			0	0	0	0	41,000	41,000	
331XX.01.05 Construct Temporary Utilit			0	0	0	0	11,000	11,000	
TOTAL Mobilize and Preparatory W			4,000	166,000	87,000	0	62,000	315,000	
331XX.02 Monitor'g,Samplng,Test &Analy									
331XX.02.90 Environmental Monitoring			0	0	0	0	3,138,000	3,138,000	
331XX.02.91 Additional Labor & Service			0	0	0	0	6,698,000	6,698,000	
TOTAL Monitor'g,Samplng,Test &An			0	0	0	0	9,836,000	9,836,000	
331XX.03 Site Work									
331XX.03.03 Earthwork	278416.00	CY	27,000	1,025,000	1,021,000	1,183,000	0	3,229,000	11.60
331XX.03.04 Roads	11307.00	SY	3,000	101,000	45,000	140,000	67,000	353,000	31.26
331XX.03.90 Railroads	2900.00	LF	3,000	119,000	25,000	35,000	0	179,000	61.79
331XX.03.91 Sheetpile Shoring	18265.00	SF	2,000	77,000	30,000	42,000	0	149,000	8.18
331XX.03.92 Additional Labor & Service			0	130,000	0	0	368,000	497,000	

** PROJECT DIRECT SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.93 Misc. Utility Relocations		0	0	0	0	250,000	250,000	
TOTAL Site Work		34,000	1,452,000	1,121,000	1,401,000	685,000	4,659,000	
331XX.05 Surface Water Collect & Contr								
331XX.05.92 Additional Labor & Service		0	1,484,000	0	65,000	1,016,000	2,565,000	
TOTAL Surface Water Collect & Co		0	1,484,000	0	65,000	1,016,000	2,565,000	
331XX.08 Solids Collect and Containmen								
331XX.08.01 Contaminated Soil Collecti	278416.00 CY	18,000	2,212,000	900,000	0	453,000	3,565,000	12.80
TOTAL Solids Collect and Contain		18,000	2,212,000	900,000	0	453,000	3,565,000	
331XX.19 Disposal (Commercial)								
331XX.19.21 Transport to Storage/Disp	348020.00 CY	46,000	1,845,000	646,000	2,045,000	29804000	34,340,000	98.67
331XX.19.22 Disposal Fees and Taxes	348020.00 CY	0	0	0	0	35324000	35,324,000	101.50
331XX.19.90 Transportation and Disposa		0	0	0	0	12589000	12,589,000	
TOTAL Disposal (Commercial)		46,000	1,845,000	646,000	2,045,000	77717000	82,253,000	
331XX.20 Site Restoration								
331XX.20.01 Earthwork		1,000	26,000	15,000	0	0	41,000	
331XX.20.04 Revegetation And Planting		0	10,000	5,000	50,000	33,000	98,000	
331XX.20.92 Site Cleanup		0	16,000	6,000	0	0	23,000	
TOTAL Site Restoration		1,000	52,000	26,000	50,000	33,000	161,000	
331XX.21 Demobilization								
331XX.21.01 Removal Of Temporary Facil		0	0	0	0	41,000	41,000	
331XX.21.02 Removal Of Temporary Utili		0	0	0	0	11,000	11,000	
331XX.21.04 Demob of Construction Equi		3,000	122,000	114,000	0	4,000	239,000	
331XX.21.06 Submittals		1,000	15,000	0	0	0	15,000	
TOTAL Demobilization		4,000	137,000	114,000	0	56,000	306,000	
TOTAL HTRW REMEDIAL ACTION (CONS		108,000	7,348,000	2,894,000	3,561,000	89857000	103,659,000	
332XX ENGINEERING DURING CONSTRUCTION								

** PROJECT DIRECT SUMMARY - SUBSYSTM (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
332XX.01 Engineering During Constructi			0	0	0	0	1,388,000	1,388,000	
TOTAL ENGINEERING DURING CONSTRU			0	0	0	0	1,388,000	1,388,000	
333XX CONSTRUCTION MANAGEMENT (S&A)									
333XX.01 CONSTRUCTION MANAGEMENT (S&A)			0	0	0	0	8,329,000	8,329,000	
TOTAL CONSTRUCTION MANAGEMENT (S			0	0	0	0	8,329,000	8,329,000	
34XXX POST-REMEDIAL ACTION									
34XXX.20 Operation, Maint. & Monitorin									
34XXX.20.01 Final Status Surveys			0	0	0	0	8,776,000	8,776,000	
34XXX.20.02 Monitoring			0	0	0	0	686,000	686,000	
34XXX.20.03 Five Year Review			0	0	0	0	40,000	40,000	
34XXX.20.04 Post Remedial Site Supervi			0	0	0	0	237,000	237,000	
TOTAL Operation, Maint. & Monito			0	0	0	0	9,739,000	9,739,000	
TOTAL POST-REMEDIAL ACTION			0	0	0	0	9,739,000	9,739,000	
TOTAL Revised FSPP - North Count			108,000	7,348,000	2,894,000	3,561,000	127637000	141,440,000	

Field Ofc. Overhead	12,157,000
SUBTOTAL	153,596,000
General and Administrative Overhead	11,929,000
SUBTOTAL	165,525,000
Fee	9,990,000
TOTAL INCL INDIRECTS	175,515,000
Design Contingencies	9,236,000
SUBTOTAL	184,751,000
Escalation to Const. Midpoint	14,711,000
SUBTOTAL	199,462,000
Construction Contingencies	22,375,000
TOTAL INCL OWNER COSTS	221,837,000

** PROJECT DIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
01XXX REAL ESTATE ANALYSIS/DOCUMENTS									
01XXX. G Rights of Entry/Temporary Per									
01XXX. G.01 Rights of Entry Aquisition			0	0	0	0	140,000	140,000	
01XXX. G.02 Damages			0	0	0	0	140,000	140,000	
TOTAL Rights of Entry/Tempora			0	0	0	0	279,000	279,000	
TOTAL REAL ESTATE ANALYSIS/DO			0	0	0	0	279,000	279,000	
32XXX PROJ. MANG.& PRE-REMEDIAL ACTION									
32XXX.10 Project Management			0	0	0	0	4,164,000	4,164,000	
32XXX.20 Investigations (PRP)			0	0	0	0	1,388,000	1,388,000	
32XXX.30 Remedial Design			0	0	0	0	11105000	11,105,000	
32XXX.40 Remedial Action Contracting			0	0	0	0	1,388,000	1,388,000	
TOTAL PROJ. MANG.& PRE-REMEDI			0	0	0	0	18045000	18,045,000	
331XX HTRW REMEDIAL ACTION (CONSTRUCT)									
331XX.01 Mobilize and Preparatory Work									
331XX.01.01 Mob Construction Equip & F									
331XX.01.01.05 Permits			0	0	0	0	4,000	4,000	
331XX.01.01.07 Construction Equipment			2,000	90,000	87,000	0	0	177,000	
TOTAL Mob Construction Equip			2,000	90,000	87,000	0	4,000	181,000	
331XX.01.03 Submittals/Implementation									
331XX.01.03.04 Environmental Protectio	8.00	EA	0	17,000	0	0	0	17,000	2066.06
331XX.01.03.05 Sedimintation Control P	8.00	EA	0	13,000	0	0	0	13,000	1595.68
331XX.01.03.08 Site Safety and Health	8.00	EA	1,000	30,000	0	0	0	30,000	3713.80
331XX.01.03.13 General Site Work Plan	8.00	EA	0	8,000	0	0	0	8,000	1052.56
331XX.01.03.14 Quality Control Plan	8.00	EA	0	9,000	0	0	0	9,000	1086.23
331XX.01.03.38 Permits	8.00	EA	0	0	0	0	6,000	6,000	750.00
TOTAL Submittals/Implementati			2,000	76,000	0	0	6,000	82,000	
331XX.01.04 Setup/Construct Temp Facil									
331XX.01.04.01 Office Trailers (contra	8.00	EA	0	0	0	0	12,000	12,000	1500.00
331XX.01.04.02 Storage Facilities	2.00	EA	0	0	0	0	10,000	10,000	5000.00

** PROJECT DIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

		QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.04.10	Toilets	16.00	EA	0	0	0	0	2,000	2,000	100.00
331XX.01.04.11	Barricades			0	0	0	0	12,000	12,000	
331XX.01.04.28	Signs	16.00	EA	0	0	0	0	6,000	6,000	345.00
TOTAL	Setup/Construct Temp Fa			0	0	0	0	41,000	41,000	
331XX.01.05	Construct Temporary Utilit									
331XX.01.05.02	Power Connection/Distri			0	0	0	0	4,000	4,000	
331XX.01.05.03	Telephone/Communication			0	0	0	0	1,000	1,000	
331XX.01.05.04	Water Connection/Distri			0	0	0	0	4,000	4,000	
331XX.01.05.05	Sewer Connection/Distri			0	0	0	0	2,000	2,000	
TOTAL	Construct Temporary Uti			0	0	0	0	11,000	11,000	
TOTAL	Mobilize and Preparator			4,000	166,000	87,000	0	62,000	315,000	
331XX.02	Monitor'g,Samplng,Test &Analy									
331XX.02.90	Environmental Monitoring			0	0	0	0	3,138,000	3,138,000	
331XX.02.91	Additional Labor & Service			0	0	0	0	6,698,000	6,698,000	
TOTAL	Monitor'g,Samplng,Test			0	0	0	0	9,836,000	9,836,000	
331XX.03	Site Work									
331XX.03.03	Earthwork									
331XX.03.03.03	Backfill	348020.00	CY	4,000	170,000	155,000	0	0	326,000	0.94
331XX.03.03.04	Borrow	278416.00	CY	0	0	0	1,114,000	0	1,114,000	4.00
331XX.03.03.05	Hauling	348020.00	CY	17,000	654,000	685,000	0	0	1,339,000	3.85
331XX.03.03.08	Compaction	348020.00	CY	5,000	201,000	181,000	70,000	0	451,000	1.30
TOTAL	Earthwork	278416.00	CY	27,000	1,025,000	1,021,000	1,183,000	0	3,229,000	11.60
331XX.03.04	Roads									
331XX.03.04.01	Bituminous Surfacing	3645.00	TON	0	16,000	5,000	101,000	0	122,000	33.39
331XX.03.04.02	Prime Coat	2604.00	GAL	0	0	0	3,000	0	3,000	1.18
331XX.03.04.05	Base Course	3720.00	TON	0	8,000	5,000	23,000	0	36,000	9.77
331XX.03.04.06	Geotextile Fabric	9300.00	SY	0	7,000	1,000	12,000	0	20,000	2.13
331XX.03.04.11	Striping	12210.00	LF	0	1,000	0	1,000	0	2,000	0.19
331XX.03.04.90	Pavement Removal	9300.00	SY	1,000	56,000	25,000	0	0	81,000	8.66
331XX.03.04.91	Hauling of Pavement for	4030.00	CY	0	8,000	9,000	0	67,000	84,000	20.84
331XX.03.04.92	Traffic Control			0	5,000	1,000	0	0	6,000	
TOTAL	Roads	11307.00	SY	3,000	101,000	45,000	140,000	67,000	353,000	31.26

** PROJECT DIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.90 Railroads								
331XX.03.90. 5 Railroad Track Removal		2,000	70,000	21,000	0	0	91,000	
331XX.03.90.10 Railroad Track Reinstal		1,000	49,000	4,000	35,000	0	88,000	
TOTAL Railroads	2900.00 LF	3,000	119,000	25,000	35,000	0	179,000	61.79
331XX.03.91 Sheetpile Shoring	18265.00 SF	2,000	77,000	30,000	42,000	0	149,000	8.18
331XX.03.92 Additional Labor & Service								
331XX.03.92.15 Backfill		0	130,000	0	0	368,000	497,000	
TOTAL Additional Labor & Serv		0	130,000	0	0	368,000	497,000	
331XX.03.93 Misc. Utility Relocations		0	0	0	0	250,000	250,000	
TOTAL Site Work		34,000	1,452,000	1,121,000	1,401,000	685,000	4,659,000	
331XX.05 Surface Water Collect & Contr								
331XX.05.92 Additional Labor & Service								
331XX.05.92. 5 Water Management		0	879,000	0	0	0	879,000	
331XX.05.92.10 Water Treatment		0	605,000	0	65,000	1,016,000	1,686,000	
TOTAL Additional Labor & Serv		0	1,484,000	0	65,000	1,016,000	2,565,000	
TOTAL Surface Water Collect &		0	1,484,000	0	65,000	1,016,000	2,565,000	
331XX.08 Solids Collect and Containmen								
331XX.08.01 Contaminated Soil Collecti								
331XX.08.01.02 Excavation	278416.00 CY	9,000	365,000	558,000	0	0	923,000	3.32
331XX.08.01.03 Hauling	348020.00 CY	9,000	327,000	342,000	0	0	669,000	1.92
331XX.08.01.90 Additional Labor & Serv		0	1,520,000	0	0	453,000	1,972,000	
TOTAL Contaminated Soil Colle	278416.00 CY	18,000	2,212,000	900,000	0	453,000	3,565,000	12.80
TOTAL Solids Collect and Cont		18,000	2,212,000	900,000	0	453,000	3,565,000	
331XX.19 Disposal (Commercial)								
331XX.19.21 Transport to Storage/Disp								
331XX.19.21.01 Loading of Solids	348020.00 CY	46,000	1,845,000	646,000	2,045,000	0	4,536,000	13.03

** PROJECT DIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.21.90 Transportation Costs	348020.00	CY	0	0	0	0	29804000	29,804,000	85.64
TOTAL Transport to Storage/Di	348020.00	CY	46,000	1,845,000	646,000	2,045,000	29804000	34,340,000	98.67
331XX.19.22 Disposal Fees and Taxes									
331XX.19.22.01 Landfill/Burial Grounds	348020.00	CY	0	0	0	0	35324000	35,324,000	101.50
TOTAL Disposal Fees and Taxes	348020.00	CY	0	0	0	0	35324000	35,324,000	101.50
331XX.19.90 Transportation and Disposa									
331XX.19.90.01 VP-1L (Wagner Brake)			0	0	0	0	4,224,000	4,224,000	
331XX.19.90.02 VP-2L (GIFREHC)			0	0	0	0	3,000,000	3,000,000	
331XX.19.90.03 VP-3L			0	0	0	0	2,458,000	2,458,000	
331XX.19.90.04 VP-4L			0	0	0	0	1,376,000	1,376,000	
331XX.19.90.05 VP-5L			0	0	0	0	1,530,000	1,530,000	
TOTAL Transportation and Disp			0	0	0	0	12589000	12,589,000	
TOTAL Disposal (Commercial)			46,000	1,845,000	646,000	2,045,000	77717000	82,253,000	
331XX.20 Site Restoration									
331XX.20.01 Earthwork									
331XX.20.01.07 Grading	65.00	ACR	1,000	26,000	15,000	0	0	41,000	631.47
TOTAL Earthwork			1,000	26,000	15,000	0	0	41,000	
331XX.20.04 Revegetation And Planting									
331XX.20.04.01 Seeding/Mulch/Fertilize	65.00	ACR	0	10,000	5,000	50,000	0	65,000	1004.78
331XX.20.04.02 Miscelaneous Landscapin	65.00	ACR	0	0	0	0	33,000	33,000	500.00
TOTAL Revegetation And Planti			0	10,000	5,000	50,000	33,000	98,000	
331XX.20.92 Site Cleanup			0	16,000	6,000	0	0	23,000	
TOTAL Site Restoration			1,000	52,000	26,000	50,000	33,000	161,000	
331XX.21 Demobilization									
331XX.21.01 Removal Of Temporary Facil									
331XX.21.01.01 Office Trailers (contr.	8.00	EA	0	0	0	0	6,000	6,000	750.00

** PROJECT DIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.01.02 Storage Facilities	2.00	EA	0	0	0	0	5,000	5,000	2500.00
331XX.21.01.05 Decon. Fac. for Const.			0	0	0	0	15,000	15,000	
331XX.21.01.10 Toilets	16.00	EA	0	0	0	0	2,000	2,000	100.00
331XX.21.01.11 Barricades			0	0	0	0	12,000	12,000	
331XX.21.01.28 Signs	16.00	EA	0	0	0	0	2,000	2,000	100.00
TOTAL Removal Of Temporary Fa			0	0	0	0	41,000	41,000	
331XX.21.02 Removal Of Temporary Utili									
331XX.21.02.02 Power Connection/Distri			0	0	0	0	4,000	4,000	
331XX.21.02.03 Telephone/Communication			0	0	0	0	0	0	
331XX.21.02.04 Water Connection/Distri			0	0	0	0	4,000	4,000	
331XX.21.02.05 Sewer Connection/Distri			0	0	0	0	2,000	2,000	
TOTAL Removal Of Temporary Ut			0	0	0	0	11,000	11,000	
331XX.21.04 Demob of Construction Equi									
331XX.21.04.05 Permits			0	0	0	0	4,000	4,000	
331XX.21.04.07 Demob. of Construction			0	16,000	91,000	0	0	107,000	
331XX.21.04.90 Decon. of Construction			3,000	106,000	23,000	0	0	129,000	
TOTAL Demob of Construction E			3,000	122,000	114,000	0	4,000	239,000	
331XX.21.06 Submittals									
331XX.21.06.03 Project Acceptance	8.00	EA	1,000	15,000	0	0	0	15,000	1860.14
TOTAL Submittals			1,000	15,000	0	0	0	15,000	
TOTAL Demobilization			4,000	137,000	114,000	0	56,000	306,000	
TOTAL HTRW REMEDIAL ACTION (C			108,000	7,348,000	2,894,000	3,561,000	89857000	103,659,000	
332XX ENGINEERING DURING CONSTRUCTION									
332XX.01 Engineering During Constructi			0	0	0	0	1,388,000	1,388,000	
TOTAL ENGINEERING DURING CONS			0	0	0	0	1,388,000	1,388,000	
333XX CONSTRUCTION MANAGEMENT (S&A)									
333XX.01 CONSTRUCTION MANAGEMENT (S&A)			0	0	0	0	8,329,000	8,329,000	
TOTAL CONSTRUCTION MANAGEMENT			0	0	0	0	8,329,000	8,329,000	

** PROJECT DIRECT SUMMARY - ASSY CAT (Rounded to 1000's) **

	QUANTITY	UOM	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
34XXX POST-REMEDIAL ACTION									
34XXX.20 Operation, Maint. & Monitorin									
34XXX.20.01 Final Status Surveys									
34XXX.20.01. 5 North County Properties			0	0	0	0	3,563,000	3,563,000	
34XXX.20.01.10 Coldwater Creek			0	0	0	0	3,590,000	3,590,000	
34XXX.20.01.15 North County Buildings			0	0	0	0	963,000	963,000	
34XXX.20.01.20 Roads			0	0	0	0	660,000	660,000	
TOTAL Final Status Surveys			0	0	0	0	8,776,000	8,776,000	
34XXX.20.02 Monitoring			0	0	0	0	686,000	686,000	
34XXX.20.03 Five Year Review			0	0	0	0	40,000	40,000	
34XXX.20.04 Post Remedial Site Supervi			0	0	0	0	237,000	237,000	
TOTAL Operation, Maint. & Mon			0	0	0	0	9,739,000	9,739,000	
TOTAL POST-REMEDIAL ACTION			0	0	0	0	9,739,000	9,739,000	
TOTAL Revised FSPP - North Co			108,000	7,348,000	2,894,000	3,561,000	127637000	141,440,000	

Field Ofc. Overhead	12,157,000
SUBTOTAL	153,596,000
General and Administrative Overhead	11,929,000
SUBTOTAL	165,525,000
Fee	9,990,000
TOTAL INCL INDIRECTS	175,515,000
Design Contingencies	9,236,000
SUBTOTAL	184,751,000
Escalation to Const. Midpoint	14,711,000
SUBTOTAL	199,462,000
Construction Contingencies	22,375,000
TOTAL INCL OWNER COSTS	221,837,000

0. 5. Prime Contract	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
0. 5. Prime Contractor											
0. 5. 0. Overhead Items - PM											
0. 5. 0. 3. General Requirements											
USR Operations Sup					0.00	42.48	0.00	0.00	0.00	42.48	
ervisor	10400			0.00	0	441,792	0	0	0	441,792	42.48
TOTAL General Requir					0	441,792	0	0	0	441,792	

0. 5. Prime Contract	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
0. 5. 0. 4. Field Office Expenses								
USR Office Lease		0.00	0.00	0.00	0.00	35595.00	35595.00	
	5.00 YR	0.00	0	0	0	0	177,975	177,975	35595.00
USR Site Security		0.00	0.00	0.00	0.00	76500.00	76500.00	
	5.00 YR	0.00	0	0	0	0	382,500	382,500	76500.00
USR Sanatary Servi		0.00	0.00	0.00	0.00	6900.00	6900.00	
ces	5.00 YR	0.00	0	0	0	0	34,500	34,500	6900.00
USR Trash Removal		0.00	0.00	0.00	0.00	3600.00	3600.00	
	5.00 YR	0.00	0	0	0	0	18,000	18,000	3600.00
USR Training		0.00	0.00	0.00	0.00	4543.00	4543.00	
	5.00 YR	0.00	0	0	0	0	22,715	22,715	4543.00
USR Janitorial Ser		0.00	0.00	0.00	0.00	62400.00	62400.00	
vice	5.00 YR	0.00	0	0	0	0	312,000	312,000	62400.00
USR General Office		0.00	0.00	0.00	18000.00	0.00	18000.00	
Supplies	5.00 YR	0.00	0	0	0	90,000	0	90,000	18000.00
USR Utilities		0.00	0.00	0.00	11700.00	0.00	11700.00	
	5.00 YR	0.00	0	0	0	58,500	0	58,500	11700.00
USR Ice/Water Drin		0.00	0.00	0.00	14900.00	0.00	14900.00	
king	5.00 YR	0.00	0	0	0	74,500	0	74,500	14900.00
USR Software		0.00	0.00	0.00	10000.00	0.00	10000.00	
	5.00 YR	0.00	0	0	0	50,000	0	50,000	10000.00
USR Postage/UPS/Et		0.00	0.00	0.00	16800.00	0.00	16800.00	
c...	5.00 YR	0.00	0	0	0	84,000	0	84,000	16800.00
USR Safety Incenti		0.00	0.00	0.00	12000.00	0.00	12000.00	
ves	5.00 YR	0.00	0	0	0	60,000	0	60,000	12000.00
USR Project Vehicl		0.00	0.00	12580.00	0.00	0.00	12580.00	
e Lease	5.00 YR	0.00	0	0	62,900	0	0	62,900	12580.00
USR Project Vehicl		0.00	0.00	3000.00	0.00	0.00	3000.00	
e Maint/Fuel/E	5.00 YR	0.00	0	0	15,000	0	0	15,000	3000.00
tc								

0. 5.	Prime Contract	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR	Project Vehicl					0.00	0.00	1200.00	0.00	0.00	1200.00	
	e Registration /Ins	5.00	YR		0.00	0	0	6,000	0	0	6,000	1200.00
USR	Trailer Rental					0.00	0.00	31500.00	0.00	0.00	31500.00	
		5.00	YR		0.00	0	0	157,500	0	0	157,500	31500.00
USR	Convex Box Ren					0.00	0.00	9400.00	0.00	0.00	9400.00	
	tal	5.00	YR		0.00	0	0	47,000	0	0	47,000	9400.00
USR	Computer					0.00	0.00	7500.00	0.00	0.00	7500.00	
		5.00	YR		0.00	0	0	37,500	0	0	37,500	7500.00
USR	Telephone/Radi					0.00	0.00	40800.00	0.00	0.00	40800.00	
	o/Comm/Etc	5.00	YR		0.00	0	0	204,000	0	0	204,000	40800.00
USR	Office Equip/M					0.00	0.00	2400.00	0.00	0.00	2400.00	
	aint/Service	5.00	YR		0.00	0	0	12,000	0	0	12,000	2400.00
USR	Office Furnitu					0.00	0.00	2500.00	0.00	0.00	2500.00	
	re	5.00	YR		0.00	0	0	12,500	0	0	12,500	2500.00
TOTAL	Field Office E					0	0	554,400	417,000	947,690	1,919,090	

0. 5. Prime Contract	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
0. 5. 0. 5. Field Office Personnel											
USR Project Manager	10400	HR	N/A	0.00	0.00 0	59.86 622,544	0.00 0	0.00 0	0.00 0	59.86 622,544	59.86
USR Construction Manager	10400	HR	N/A	0.00	0.00 0	47.16 490,464	0.00 0	0.00 0	0.00 0	47.16 490,464	47.16
USR Construction Supt. (3ea)	31200	HR	N/A	0.00	0.00 0	27.08 844,896	0.00 0	0.00 0	0.00 0	27.08 844,896	27.08
USR QCQ Manager	10400	HR	N/A	0.00	0.00 0	36.32 377,728	0.00 0	0.00 0	0.00 0	36.32 377,728	36.32
USR QCQ Engineer	10400	HR	N/A	0.00	0.00 0	35.57 369,928	0.00 0	0.00 0	0.00 0	35.57 369,928	35.57
USR Site S&H Officer	10400	HR	N/A	0.00	0.00 0	27.94 290,576	0.00 0	0.00 0	0.00 0	27.94 290,576	27.94
USR Safety Engineer	10400	HR	N/A	0.00	0.00 0	18.05 187,720	0.00 0	0.00 0	0.00 0	18.05 187,720	18.05
USR Rad Safety Officer	10400	HR	N/A	0.00	0.00 0	47.29 491,816	0.00 0	0.00 0	0.00 0	47.29 491,816	47.29
USR Rad Safety Engineer (3ea)	31200	HR	N/A	0.00	0.00 0	40.29 1,257,048	0.00 0	0.00 0	0.00 0	40.29 1,257,048	40.29
USR Compliance Manager	10400	HR	N/A	0.00	0.00 0	32.13 334,152	0.00 0	0.00 0	0.00 0	32.13 334,152	32.13
USR T&D Coordinator	10400	HR	N/A	0.00	0.00 0	25.95 269,880	0.00 0	0.00 0	0.00 0	25.95 269,880	25.95
USR Project Control Engineer	10400	HR	N/A	0.00	0.00 0	35.99 374,296	0.00 0	0.00 0	0.00 0	35.99 374,296	35.99
USR Project Accountant	10400	HR	N/A	0.00	0.00 0	46.39 482,456	0.00 0	0.00 0	0.00 0	46.39 482,456	46.39

0. 5.	Prime Contract	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR	Purshasing Man					0.00	41.36	0.00	0.00	0.00	41.36	
	ager	10400	HR	N/A	0.00	0	430,144	0	0	0	430,144	41.36
USR	Sr. Purshasing					0.00	27.08	0.00	0.00	0.00	27.08	
	Agent	10400	HR	N/A	0.00	0	281,632	0	0	0	281,632	27.08
USR	Sr. Adin Asst.					0.00	21.16	0.00	0.00	0.00	21.16	
		10400	HR	N/A	0.00	0	220,064	0	0	0	220,064	21.16
USR	Network Admin.					0.00	26.49	0.00	0.00	0.00	26.49	
		10400	HR	N/A	0.00	0	275,496	0	0	0	275,496	26.49
USR	Database Desig					0.00	26.49	0.00	0.00	0.00	26.49	
	ner	10400	HR	N/A	0.00	0	275,496	0	0	0	275,496	26.49
USR	Regulatory Spe					0.00	35.90	0.00	0.00	0.00	35.90	
	cialist	10400	HR	N/A	0.00	0	373,360	0	0	0	373,360	35.90
TOTAL	Field Office P					0	8,249,696	0	0	0	8,249,696	

0. 5. Prime Contract	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
0. 5. 0. 6. Home Office Personnel								
USR Project Manage		0.00	54.16	0.00	0.00	0.00	54.16	
r (432hrs/yr)	2160.00 HR	0.00 0	116,986	0	0	0	116,986	54.16
USR Contract Manag		0.00	39.32	0.00	0.00	0.00	39.32	
er (416hrs/yr)	2080.00 HR	0.00 0	81,786	0	0	0	81,786	39.32
USR Subcontract Ad		0.00	44.89	0.00	0.00	0.00	44.89	
min. (208hrs/y	1040.00 HR	0.00 0	46,686	0	0	0	46,686	44.89
r)								
USR QCQ Manager (1		0.00	49.10	0.00	0.00	0.00	49.10	
24hrs/yr)	620.00 HR	0.00 0	30,442	0	0	0	30,442	49.10
USR H&S Manager (2		0.00	40.62	0.00	0.00	0.00	40.62	
48hrs/yr)	1240.00 HR	0.00 0	50,369	0	0	0	50,369	40.62
USR Regulatory Spe		0.00	35.90	0.00	0.00	0.00	35.90	
cialist	1040.00 HR	0.00 0	37,336	0	0	0	37,336	35.90
(208hrs/yr)								
USR Records Admin.		0.00	16.76	0.00	0.00	0.00	16.76	
(208hrs/yr)	1040.00 HR	0.00 0	17,430	0	0	0	17,430	16.76
TOTAL Home Office Pe		0	381,034	0	0	0	381,034	

0. 5. Prime Contract	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
0. 5. 0.10. PPE - Level D Modified											
In addition to PPE a crew will be considered for 1day/wk for decontamination purposes. 8hrs x 52wks x 5.5yrs = 2288hrs											
USR PPE Safety Supplies	5.00	YR	N/A	0.00	1.00	0.00	0.00	0.00	233000.00	233000.00	233000.00
					5	0	0	0	1,165,000	1,165,000	
TOTAL PPE - Level D					5	0	0	0	1,165,000	1,165,000	
TOTAL Overhead Items					5	9,072,522	554,400	417,000	2,112,690	12,156,612	

01XXX. G. Rights of Entr	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

01XXX. REAL ESTATE ANALYSIS/DOCUMENTS

01XXX. G. Rights of Entry/Temporary Permit

This alternative is assumed to have no real estate interest other than Right's of Entry per memo dated 4 Apr 01; Generic Cost Estimate for North County Feasibility Study.

The following Rights of Entry (ROE) are considered;
- 17 ROE for 28 properties with some removal action
- 39 ROE for 40 properties with no expected removal but not yet evaluated in accordance with MARSSIM
- 11 ROE 21 properties previously remediated by DOE requiring additional investigation
- 212 ROE for 212 properties along suspect haul routes not yet investigated and along CWC Reaches B and C

01XXX. G.01. Rights of Entry Aquisition

USR	Rights of Entr				0.00	0.00	0.00	0.00	500.00	500.00	
	y	279.00	EA	0.00	0	0	0	0	139,500	139,500	500.00
TOTAL	Rights of Entr				0	0	0	0	139,500	139,500	

01XXX. G. Rights of Entr	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
01XXX. G.02. Damages											
USR Damages					0.00	0.00	0.00	0.00	500.00	500.00	
	279.00	EA		0.00	0	0	0	0	139,500	139,500	500.00
TOTAL Damages					0	0	0	0	139,500	139,500	
TOTAL Rights of Entr					0	0	0	0	279,000	279,000	
TOTAL REAL ESTATE AN					0	0	0	0	279,000	279,000	

32XXX.10. Project Manage	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
32XXX. PROJ. MANG.& PRE-REMEDIAL ACTION											
32XXX.10. Project Management											
USR Project Manage					0.00	0.00	0.00	0.00	4164000	4164000.00	
ment (3%)	1.00	LS		0.00	0	0	0	0	4,164,000	4,164,000	4164000.00
TOTAL Project Manage					0	0	0	0	4,164,000	4,164,000	

32XXX.20. Investigations	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
32XXX.20. Investigations (PRP)											
USR PRP (1%)					0.00	0.00	0.00	0.00	1388000	1388000.00	
	1.00	LS		0.00	0	0	0	0	1,388,000	1,388,000	1388000.00
TOTAL Investigations					0	0	0	0	1,388,000	1,388,000	

32XXX.30. Remedial Desig	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
32XXX.30. Remedial Design											
USR Remedial Desig					0.00	0.00	0.00	0.00	11105000	11105000.00	
n (8%)	1.00	LS		0.00	0	0	0	0	11105000	11,105,000	11105000.00
TOTAL Remedial Desig					0	0	0	0	11105000	11,105,000	

32XXX.40. Remedial Actio	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
32XXX.40. Remedial Action Contracting											
USR Remedial Actio					0.00	0.00	0.00	0.00	1388000	1388000.00	
n Contracting (1%)	1.00	LS		0.00	0	0	0	0	1,388,000	1,388,000	1388000.00
TOTAL Remedial Actio					0	0	0	0	1,388,000	1,388,000	
TOTAL PROJ. MANG.& P					0	0	0	0	18045000	18,045,000	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX. HTRW REMEDIAL ACTION (CONSTRUCT)

Account 33XXX includes HTRW remedial action (construction) work for all programs and includes operation which occurs during construction (remedial action). Account 33XXX excludes project management at all phases and excludes pre construction investigations and remedial design which are all in Account 32XXX. Account 33XXX excludes post construction Operation and Maintenance (O&M) which is in Account 34XXX.

331XX.01. Mobilize and Preparatory Work

Assumptions:

Assume 8 contracts for the purpose of mobilization, 6 contracts for the SLAPS VP's and 2 contracts for HISS/Futura. No additional Mob. is considered for the SLAPS contract which is already in place. Allthough the type of equipment to be mobilized for each contract will most likely be different, for estimating purposes assume the same equipment to be mobilized. Pile driving equipment assumed to be mobed to two sites only. Equipment is assumed to be mobilized from the St. Louis area.

Use 40hrs per each mobilzation event including setup time. Use 8hrs/pc of const. equip./ea. mob. event for operating time and 32hrs standby. Use full operating time for all other equipment and labor.

Const. Equip. -
Operating time = 8hrs/pc x 8ea = 64hrs/ea
Standby time = 32hrs/pc x 8ea = 256hrs/ea

Mobilization crew - (crew to be used for operating time only)

Truck w/Lowboy	Truck Driver
Mechanics truck	Mechanic
Pickup truck	Operator
	Laborer

Duration = 8hrs x 8-contracts x 7pc's of equip. = 448hrs

331XX.01.01. Mob Construction Equip & Fac

331XX.01.01.05. Permits

Assume 8 contracts, 6 contracts for the SLAPS VP's and 2 contracts for HISS/Futura. No additional Mob. is considered for the SLAPS contract which is already in place. Cost per contract is assumed to cover all permits required for mobilization.

USR PM Permits (all i				0.00	0.00	0.00	0.00	500.00	500.00		
nclusive)	8.00	EA	0.00	0	0	0	0	4,000	4,000	500.00	
TOTAL Permits				0	0	0	0	4,000	4,000		

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.01.07. Construction Equipment											
UPB PM TRK,WTR,OF-HY,					0.00	0.00	61.38	0.00	0.00	61.38	
6000GAL,W/CAT 621E	64.00	HR	T60KI002	1.00	0	0	3,928	0	0	3,928	61.38
UPB PM TRK,WTR,OF-HY,					0.00	0.00	15.28	0.00	0.00	15.28	
6000GAL,W/CAT 621E	256.00	HR	T60KI002	1.00	0	0	3,911	0	0	3,911	15.28
UPB PM HYD EXCAV, CRW					0.00	0.00	134.41	0.00	0.00	134.41	
LR, 3.125CY BK T	64.00	HR	H25CA008	0.00	0	0	8,602	0	0	8,602	134.41
UPB PM HYD EXCAV, CRW					0.00	0.00	36.79	0.00	0.00	36.79	
LR, 3.125CY BK T	256.00	HR	H25CA008	0.00	0	0	9,419	0	0	9,419	36.79
MIL PM ROLLER,VIB,SD,					0.00	0.00	29.67	0.00	0.00	29.67	
S/P,13.0T,66"W ,PAD	64.00	HR	R50DY002	1.00	0	0	1,899	0	0	1,899	29.67
MIL PM ROLLER,VIB,SD,					0.00	0.00	6.41	0.00	0.00	6.41	
S/P,13.0T,66"W ,PAD	256.00	HR	R50DY002	1.00	0	0	1,642	0	0	1,642	6.41
MAP PM DOZER,CWLR, D-					0.00	0.00	49.71	0.00	0.00	49.71	
6H PS,W/BLADE (ADD ATTACHMENTS)	64.00	HR	T15CA010	1.00	0	0	3,182	0	0	3,182	49.71
MAP PM DOZER,CWLR, D-					0.00	0.00	10.52	0.00	0.00	10.52	
6H PS,W/BLADE (ADD ATTACHMENTS)	256.00	HR	T15CA010	1.00	0	0	2,694	0	0	2,694	10.52
MAP PM DOZER,CWLR, D-					0.00	0.00	60.94	0.00	0.00	60.94	
8R PS,W/BLADE (ADD ATTACHMENTS)	64.00	HR	T15CA016	1.00	0	0	3,900	0	0	3,900	60.94
MAP PM DOZER,CWLR, D-					0.00	0.00	15.62	0.00	0.00	15.62	
8R PS,W/BLADE (ADD ATTACHMENTS)	256.00	HR	T15CA016	1.00	0	0	3,998	0	0	3,998	15.62
UPB PM LDR,FE, WH, 4.					0.00	0.00	60.99	0.00	0.00	60.99	
50 CY, ARTIC, 966E (2ea)	128.00	HR	L40CA006	1.00	0	0	7,807	0	0	7,807	60.99

331XX.01.	Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
UPB PM	LDR,FE, WH, 4.					0.00	0.00	15.67	0.00	0.00	15.67	
	50 CY, ARTIC, 966E (2ea)	512.00	HR	L40CA006	1.00	0	0	8,021	0	0	8,021	15.67
USR PM	CR,ME,CWLR,LIF					0.00	0.00	91.24	0.00	0.00	91.24	
	TING, 85T/160' BOOM	16.00	HR	C85AM010	1.00	0	0	1,460	0	0	1,460	91.24
USR PM	CR,ME,CWLR,LIF					0.00	0.00	30.43	0.00	0.00	30.43	
	TING, 85T/160' BOOM	64.00	HR	C85AM010	1.00	0	0	1,947	0	0	1,947	30.43
USR PM	PILE HAMMER,VI					0.00	0.00	63.45	0.00	0.00	63.45	
	B,116T FORCE D RIVE (ADD LEADS & CRANE)	16.00	HR	P30MK003	1.00	0	0	1,015	0	0	1,015	63.45
USR PM	PILE HAMMER,VI					0.00	0.00	11.95	0.00	0.00	11.95	
	B,116T FORCE D RIVE (ADD LEADS & CRANE)	64.00	HR	P30MK003	1.00	0	0	765	0	0	765	11.95
UPB PM	TRLR,LOWBOY, 4					0.00	0.00	6.88	0.00	0.00	6.88	
	0T, 3 AXLE (ADD TOWING TRUCK)	448.00	HR	T45XX015	1.00	0	0	3,084	0	0	3,084	6.88
UPB PM	TRK,HWY, 46,00					0.00	0.00	35.40	0.00	0.00	35.40	
	0 GVW, 6X4, 3 AXLE	448.00	HR	T50FO018	1.00	0	0	15,860	0	0	15,860	35.40
MIL PM	TRK,HWY,10,000					0.00	0.00	7.97	0.00	0.00	7.97	
	GVW,4X2, 1T-PI CKUP	448.00	HR	T50FO005	1.00	0	0	3,571	0	0	3,571	7.97
MIL PM	Outside Equip.					1.00	44.95	0.00	0.00	0.00	44.95	
	Operators, He avy	448.00	HR	X-EQOPRHVY	1.00	448	20,139	0	0	0	20,139	44.95
MIL PM	Outside Equip.					1.00	42.23	0.00	0.00	0.00	42.23	
	Operators, Mechanic	448.00	HR	X-EQOPRMED	1.00	448	18,921	0	0	0	18,921	42.23
MIL PM	Outside Truck					1.00	37.59	0.00	0.00	0.00	37.59	
	Drivers, Heavy	448.00	HR	X-TRKDVRHV	1.00	448	16,839	0	0	0	16,839	37.59

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
MIL PM Outside Labore					1.00	37.86	0.00	0.00	0.00	37.86	
rs, (Semi-Skil	896.00	HR	X-LABORER	1.00	896	33,922	0	0	0	33,922	37.86
led)											
- 2ea											
TOTAL Construction E					2,240	89,822	86,705	0	0	176,527	
TOTAL Mob Constructi					2,240	89,822	86,705	0	4,000	180,527	

331XX.01. Mobilize and P

331XX.01.03. Submittals/Implementation Plans

Submittal/implementation plans is work incurred during remedial action for obtaining all necessary plans and permits. These include QA/QC plans, work plans, shop drawings, demolition plans, environmental control plans, pollution control plans, site safety and health plans, site security plan, materials handling/transportation/disposal plan and all local, state, and federal permits.

Assume one of each plan per contract. (2ea)

331XX.01.03.04. Environmental Protection Plan

	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
FOP PM Engineers, Civ					1.00	26.31	0.00	0.00	0.00	26.31	
il	320.00	HR	FC-ENGCI	1.00	320	8,420	0	0	0	8,420	26.31
RAD PM Certified Indu					1.00	50.68	0.00	0.00	0.00	50.68	
strial Hygieni	160.00	HR	FH-CIDEYG	1.00	160	8,108	0	0	0	8,108	50.68
st											
TOTAL Environmental	8.00	EA			480	16,528	0	0	0	16,528	2066.06

331XX.01.03.05. Sedimintation Control Plan

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
FOP PM Engineers, Civ					1.00	26.31	0.00	0.00	0.00	26.31	
il	320.00	HR	FC-ENGCI	1.00	320	8,420	0	0	0	8,420	26.31
FOP PM Geologist					1.00	27.16	0.00	0.00	0.00	27.16	
	160.00	HR	FC-ENCGE	1.00	160	4,345	0	0	0	4,345	27.16
TOTAL Sedimintation	8.00	EA			480	12,765	0	0	0	12,765	1595.68

331XX.01. Mobilize and P

331XX.01.03.08. Site Safety and Health Plan

	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
RAD PM Site Safety &					1.00	44.60	0.00	0.00	0.00	44.60	
Health Officer	448.00	HR	FH-HEALTO	1.00	448	19,981	0	0	0	19,981	44.60
RAD PM Certified Indu					1.00	50.68	0.00	0.00	0.00	50.68	
strial Hygieni	192.00	HR	FH-CIDEYG	1.00	192	9,730	0	0	0	9,730	50.67
st											
TOTAL Site Safety an	8.00	EA			640	29,710	0	0	0	29,710	3713.80

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.03.13. General Site Work Plan											
FOP PM Engineers, Civ					1.00	26.31	0.00	0.00	0.00	26.31	
il	320.00	HR	FC-ENGCI	1.00	320	8,420	0	0	0	8,420	26.31
TOTAL General Site W	8.00	EA			320	8,420	0	0	0	8,420	1052.56

331XX.01.03.14. Quality Control Plan

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
FOP PM Engineers, Qua					1.00	27.16	0.00	0.00	0.00	27.16	
lity Control	320.00	HR	FC-ENGQC	1.00	320	8,690	0	0	0	8,690	27.16
TOTAL Quality Contro	8.00	EA			320	8,690	0	0	0	8,690	1086.23

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.03.38. Permits											
USR PM Site Permits (					0.00	0.00	0.00	0.00	750.00	750.00	
all inclusive)	8.00	EA		0.00	0	0	0	0	6,000	6,000	750.00
TOTAL Permits	8.00	EA			0	0	0	0	6,000	6,000	750.00
TOTAL Submittals/Imp					2,240	76,115	0	0	6,000	82,115	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.01.04. Setup/Construct Temp Facilities

Setup/construct temporary facilities during remedial action includes procurement, setup, and construction of office trailers, storage areas, fencing, access roads, decontamination facilities, decontamination staging areas and other temporary facilities.

331XX.01.04.01. Office Trailers (contractor)

Assume one setup/hookup per each contract.

USR PM Deliver and Se					0.00	0.00	0.00	0.00	1500.00	1500.00	
tup/Hookup	8.00	EA		0.00	0	0	0	0	12,000	12,000	1500.00
TOTAL Office Trailer	8.00	EA			0	0	0	0	12,000	12,000	1500.00

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.04.02. Storage Facilities											
Assume that a staging area will be set up for a an office trailer, tool trailer and any other equipment or materials to be left onsite											
This item is considered a one time cost @ 2 locations to be utilized for alll contracts.											
USR PM Staging Area					0.00	0.00	0.00	0.00	5000.00	5000.00	
	2.00	EA		0.00	0	0	0	0	10,000	10,000	5000.00
TOTAL Storage Facili	2.00	EA			0	0	0	0	10,000	10,000	5000.00

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.04.10. Toilets											
Assume 2 portable toilets to be delivered per each contract. (16ea)											
USR PM Portable Toile					0.00	0.00	0.00	0.00	100.00	100.00	
ts	16.00	EA		0.00	0	0	0	0	1,600	1,600	100.00
TOTAL Toilets	16.00	EA			0	0	0	0	1,600	1,600	100.00

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.04.11. Barricades											
Assume a lump sum cost per contract.											
USR PM Barricades					0.00	0.00	0.00	0.00	1500.00	1500.00	
	8.00	EA		0.00	0	0	0	0	12,000	12,000	1500.00
TOTAL Barricades					0	0	0	0	12,000	12,000	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.04.28. Signs											
Assume two construction signs per contract.											
USR PM Project Signs					0.00	0.00	0.00	0.00	345.00	345.00	
	16.00	EA		0.00	0	0	0	0	5,520	5,520	345.00
TOTAL Signs	16.00	EA			0	0	0	0	5,520	5,520	345.00
TOTAL Setup/Construc					0	0	0	0	41,120	41,120	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.05. Construct Temporary Utilities											
Temporary utilities are power and lighting, telephone, water and sewer services that will be in place only during construction or remedial action. It is assumed that all utilities are presently in-place on site and only a temp. hookup fee will be charged for each utility .											
331XX.01.05.02. Power Connection/Distribution											
USR PM Temp. power ho					0.00	0.00	0.00	0.00	500.00	500.00	
okup/contract	8.00	EA		0.00	0	0	0	0	4,000	4,000	500.00
TOTAL Power Connecti					0	0	0	0	4,000	4,000	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.05.03. Telephone/Communication Dist.											
USR PM Connection Fee					0.00	0.00	0.00	0.00	100.00	100.00	
(per contract)	8.00	EA		0.00	0	0	0	0	800	800	100.00
TOTAL Telephone/Comm					0	0	0	0	800	800	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.05.04. Water Connection/Distribution											
USR PM Connection Fee					0.00	0.00	0.00	0.00	500.00	500.00	
	8.00	EA		0.00	0	0	0	0	4,000	4,000	500.00
TOTAL Water Connecti					0	0	0	0	4,000	4,000	

331XX.01. Mobilize and P	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.01.05.05. Sewer Connection/Distribution											
USR PM Connection Fee					0.00	0.00	0.00	0.00	300.00	300.00	
	8.00	EA		0.00	0	0	0	0	2,400	2,400	300.00
TOTAL Sewer Connecti					0	0	0	0	2,400	2,400	
TOTAL Construct Temp					0	0	0	0	11,200	11,200	
TOTAL Mobilize and P					4,480	165,936	86,705	0	62,320	314,961	

331XX.02. Monitor'g,Samp	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.02. Monitor'g,Samplng,Test &Analysis
Costs considered are based on historical data for previous fiscal years and include but are not limited to, air particle sampling, ground water sampling, storm water sampling, surface water sampling, sediment sampling, and all reqired environmental reports/documentation.

331XX.02.90. Environmental Monitoring

USR PM	Environmental				0.00	0.00	0.00	0.00	627560.00	627560.00	
	Monitoring	5.00	YR	0.00	0	0	0	0	3,137,800	3,137,800	627560.00
TOTAL	Environmental				0	0	0	0	3,137,800	3,137,800	

331XX.02. Monitor'g,Samp	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.02.91. Additional Labor & Services											
USR PM Lab. Sampling					0.00	0.00	0.00	0.00	48000.00	48000.00	
Services	5.00	YR		0.00	0	0	0	0	240,000	240,000	48000.00
USR PM EDI - HP Techs					0.00	0.00	0.00	0.00	1083638	1083638.00	
	5.00	YR		0.00	0	0	0	0	5,418,190	5,418,190	1083638.00
USR PM Rad Instrument					0.00	0.00	0.00	0.00	207905.00	207905.00	
& Supplies	5.00	YR		0.00	0	0	0	0	1,039,525	1,039,525	207905.00
TOTAL Additional Lab					0	0	0	0	6,697,715	6,697,715	
TOTAL Monitor'g,Samp					0	0	0	0	9,835,515	9,835,515	

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.03. Site Work

Construction during remedial action. Includes stripping topsoil, excavation, backfill, compaction, fine grading, hauling spoil, importation of borrow material and topsoil. Excludes any work involving contaminated or hazardous materials.

Personal protection is not required for any of the site work. Production rates assume normal productivity for these items.

331XX.03.03. Earthwork

Assumptions:
It is assumed that all required borrow will come from Ft. Bell Quarry which is located near Hwy. 67 and the Missouri River. Overburden material from this quarry has been used for previous contracts. The quantity of borrow material required takes into consideration 20% over-excavation and a material swell factor of 25% . Compaction of fill material is assumed to be placed in loose lifts not to exceed 8-inches thick and compacted to at least 95% of the Standard Proctor max. dry density.

Factors:
Over-Excavation = 20%
Swell = 25%

Volumes -
Excavation(including over-excavation) = 278,416cy
Borrow Required = 348,020cy
*For quantity details reference notes under 08 Solids Collect and Containment

331XX.03.03.03. Backfill

AF PM	Fill, spread b				0.01	0.49	0.45	0.00	0.00	0.94	
	orrow w/dozer	348020	CY	CODTB10B	125.00	4,176	170,286	155,252	0	0	325,538	0.94
TOTAL	Backfill	348020	CY			4,176	170,286	155,252	0	0	325,538	0.94

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.03.03.04. Borrow

For the basis of borrow costs reference government estimates for the following WAD's; (cost basis for in-siti quantity)

Contract No. DACW45-96-D-0007
Task Order # KC-01/WAD 10, FY2000
$498,000/120,000cy's = $4.16/cy (includes some development)
Task Order # KC-01/WAD 10, FY2001
$199,400/50,000cy's = $3.99/cy

USE $4.00/cy for borrow material FOB quarry

USR PM	Borrow Materia				0.00	0.00	0.00	4.00	0.00	4.00	
	l	278416	CY	0.00	0	0	0	1,113,664	0	1,113,664	4.00
TOTAL	Borrow	278416	CY		0	0	0	1,113,664	0	1,113,664	4.00

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.03.05. Hauling											
AF PM Hauling, hwy h					0.05	1.88	1.97	0.00	0.00	3.85	
aulers, 12 CY, 12 mile round trip @ base wide rate	348020	CY	COEIB34B	20.00	17,401	654,069	684,695	0	0	1,338,763	3.85
TOTAL Hauling	348020	CY			17,401	654,069	684,695	0	0	1,338,763	3.85

331XX.03.03.08. Compaction

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
AF PM Compaction, ri					0.01	0.20	0.13	0.00	0.00	0.33	
ding, 8" lifts , 2 passes, sheepsfoot/wobbly wheel roller	348020	CY	COFCB32F	600.00	1,740	68,247	45,382	0	0	113,629	0.33
USR PM Compaction Wat					0.01	0.38	0.39	0.20	0.00	0.97	
er Price $.005 /Gal ($0.454/100 Liters)	348020	CY	COFWK	174.25	3,480	132,387	135,484	69,604	0	337,475	0.97
TOTAL Compaction	348020	CY			5,220	200,634	180,866	69,604	0	451,104	1.30
TOTAL Earthwork	278416	CY			26,798	1,024,989	1,020,812	1,183,268	0	3,229,069	11.60

331XX.03. Site Work	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.03.04. Roads

This Item is for replacing asphalt roads at Slaps VP's. Assume the following for replacement cross-section; 3" Wearing Coarse, 4" Binder Coarse, and 9" Base w/Geotextile. Road to be replaced is based on the action level. Action Level = 100 285 1775

Pershall Road	1,865sy
Hazelwood Road	1,417sy
Latty Road	1,186sy
Frost Avenue	1,475sy
McDonnell Boulavard	4,410sy
Banshee Road	954sy
Total	11,307sy

331XX.03.04.01. Bituminous Surfacing

MIL PM Asphaltic conc			0.10	4.05	1.17	26.67	0.00	31.90	
pavement, highway, binder course, 4" thic	2083.00 TON COKCB25	106.25	216	8,441	2,445	55,554	0	66,440	31.90
MIL PM Asphaltic conc			0.12	4.73	1.65	29.00	0.00	35.38	
pavement, highway, wearing course, 3" thick	1562.00 TON COKCB25B	100.00	187	7,385	2,584	45,298	0	55,268	35.38
TOTAL Bituminous Sur	3645.00 TON		403	15,827	5,029	100,852	0	121,707	33.39

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.04.02. Prime Coat											
MIL PM Surface treatm					0.01	0.27	0.17	3.25	0.00	3.68	
ent, prime coa t, bituminous, 0.28 gal/SY	837.00	CSF	COKBB45	300.00	6	223	140	2,720	0	3,083	3.68
TOTAL Prime Coat	2604.00	GAL			6	223	140	2,720	0	3,083	1.18

331XX.03.04.05. Base Course

331XX.03. Site Work	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
B MIL PM Base course, c		0.02	0.86	0.55	2.50	0.00	3.91	
ompacted to 9" deep, crushed 3/4" stone, large areas	9300.00 SY COFGB36B	375.00 198	7,964	5,148	23,250	0	36,361	3.91
TOTAL Base Course	3720.00 TON	198	7,964	5,148	23,250	0	36,361	9.77

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.04.06. Geotextile Fabric											
CIV PM Geotextile fab					0.02	0.74	0.10	1.29	0.00	2.13	
ric, 120 mil thick, non-woven polypropylene	9300.00	SY	ULABA2	150.00	186	6,863	925	11,997	0	19,786	2.13
TOTAL Geotextile Fab	9300.00	SY			186	6,863	925	11,997	0	19,786	2.13

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.04.11. Striping											
MIL PM Lines on pvmt,					2.40	90.11	14.61	90.00	0.00	194.72	
acrylic waterborne, white or yellow, 4" wide	12.21	MLF	CLABB78	2.50	29	1,100	178	1,099	0	2,378	194.72
TOTAL Striping	12210	LF			29	1,100	178	1,099	0	2,378	0.19

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.03.04.90. Pavement Removal

Remove and dispose of offsite 9,300sy of asphalt with some base at approx.
1' thick = 3,100cy

L MIL PM	Site dml, bitu				0.15	6.02	2.64	0.00	0.00	8.66	
	minous, paveme	9300.00	SY	CLADB38	32.34	1,438	56,005	24,514	0	0	80,518	8.66
	nt										
	removal, roads										
TOTAL	Pavement Remov	9300.00	SY			1,438	56,005	24,514	0	0	80,518	8.66

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.04.91. Hauling of Pavement for Disposal											
AF PM Hauling, hwy h					0.05	1.88	1.97	0.00	0.00	3.85	
aulers, 12 CY, 12 mile round trip @ base wide rate	4030.00	CY	COEIB34B	20.00	202	7,574	7,929	0	0	15,503	3.85
USR PM Landfill Tippi					0.05	1.88	1.97	0.00	200.00	203.85	
ng Fee for Const. Debris/Truck Load	336.00	EA	COEIB34B	20.00	17	631	661	0	67,200	68,493	203.85
TOTAL Hauling of Pav	4030.00	CY			218	8,205	8,590	0	67,200	83,995	20.84

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.04.92. Traffic Control											
Assume traffic control to be required for a 3 month duration or 520hrs.											
Database crew only considers 25% actual work time.											
USR PM Flag Crew W/Pi					0.25	9.46	1.28	0.00	0.00	10.74	
ckup	520.00	HRS	XFLAC	1.00	130	4,922	663	0	0	5,585	10.74
TOTAL Traffic Contro					130	4,922	663	0	0	5,585	
TOTAL Roads	11307	SY			2,608	101,108	45,188	139,918	67,200	353,414	31.26

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.03.90. Railroads

Based on information provided by the field it appears there are 14 locations with approximately 41,630lf of railroad track to be removed and reinstalled. Some of the locations have multiple tracks. Material prices consider 75% salvage on track and 50% reuse of the ballast.
Tthe amount of track to be replaced for this alternative is based on a volume fraction of 7% . The volume fration has been determined using supplemental criteria relative to free release criteria.

331XX.03.90. 5. Railroad Track Removal

MIL PM	Railroad, remo				0.62	24.23	7.23	0.00	0.00	31.45	
	ve existing tr 2900.00 LF	CLABB13		11.25	1,804	70,253	20,963	0	0	91,216	31.45
	ack										
					-------	---------	---------	---------	---------	----------	
TOTAL	Railroad Track				1,804	70,253	20,963	0	0	91,216	

331XX.03.90.10. Railroad Track Reinstallation

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
M MIL PM Railroad, 115					0.04	1.68	0.50	2.99	0.00	5.17	
lb prime rail, ARA-A & AREA	2900.00	LF	CLABB13	162.50	125	4,864	1,451	8,671	0	14,986	5.17
M AF PM Railroad, ball					0.40	15.22	0.86	4.09	0.00	20.17	
ast, crushed stone, alternate pricing method	2900.00	LF	CLABB14	15.00	1,160	44,126	2,505	11,861	0	58,492	20.17
USR PM Miscellaneous					0.00	0.00	0.00	5.00	0.00	5.00	
Materials and Supplies	2900.00	LF		0.00	0	0	0	14,500	0	14,500	5.00
TOTAL Railroad Track					1,285	48,989	3,956	35,032	0	87,978	
TOTAL Railroads	2900.00	LF			3,089	119,242	24,919	35,032	0	179,193	61.79

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.03.91. Sheetpile Shoring

Current assumptions are that sheetpile shoring will be required at two locations along McDonnell Blvd. From Sta. 9+00 to 10+50 and Sta.13+00 to 20+00.

Sheetpile Quantities for PZ22 -
Sta. 9+00 to 10+50 = 150' x 20.6' = 3090sf
Sta. 13+00 to 17+50 = 450' x 20' = 9000sf
Sta. 17+50 to 19+00 = 150' x 27.5' = 4125sf
Sta. 19+00 to 20+00 = 100' x 20.5' = 2050sf

Total = 18265sf

L MIL PM	Sheet piling,				8.86	383.66	149.58	210.82	0.00	744.06	
	stl,drive,extr	200.92	TON	CPIDB40	0.90	1,781	77,083	30,053	42,357	0	149,494	744.06
	ct&salvage no										
TOTAL	Sheetpile Shor	18265	SF			1,781	77,083	30,053	42,357	0	149,494	8.18

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.92. Additional Labor & Services											
331XX.03.92.15. Backfill											
USR PM Engineering Ma					0.00	52.09	0.00	0.00	0.00	52.09	
nager (100hrs/	500.00	HR		0.00	0	26,045	0	0	0	26,045	52.09
yr)											
USR PM Lead Engineer					0.00	46.23	0.00	0.00	0.00	46.23	
(280hrs/yr)	1400.00	HR		0.00	0	64,722	0	0	0	64,722	46.23
USR PM Engineer (230h					0.00	34.05	0.00	0.00	0.00	34.05	
rs/yr)	1150.00	HR		0.00	0	39,158	0	0	0	39,158	34.05
USR PM Surveying Serv					0.00	0.00	0.00	0.00	50000.00	50000.00	
ices	5.00	YR		0.00	0	0	0	0	250,000	250,000	50000.00
USR PM Compaction Tes					0.00	0.00	0.00	0.00	23500.00	23500.00	
ting	5.00	YR		0.00	0	0	0	0	117,500	117,500	23500.00
TOTAL Backfill					0	129,925	0	0	367,500	497,425	
TOTAL Additional Lab					0	129,925	0	0	367,500	497,425	

331XX.03. Site Work	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.03.93. Misc. Utility Relocations											
Based on current field data assume one event/year for the 5year project duration for RA work.											
USR PM Site Utility R					0.00	0.00	0.00	0.00	50000.00	50000.00	
elocations	5.00	EA		0.00	0	0	0	0	250,000	250,000	50000.00
TOTAL Misc. Utility					0	0	0	0	250,000	250,000	
TOTAL Site Work					34,276	1,452,347	1,120,972	1,400,575	684,700	4,658,594	

331XX.05. Surface Water	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.05. Surface Water Collect & Control											
331XX.05.92. Additional Labor & Services											
331XX.05.92. 5. Water Management											
USR PM Engineering Manager (100hrs/yr)	500.00	HR		0.00	0.00	52.09	0.00	0.00	0.00	52.09	
				0.00	0	26,045	0	0	0	26,045	52.09
USR PM Engineer (330hrs/yr)	1650.00	HR		0.00	0.00	34.05	0.00	0.00	0.00	34.05	
				0.00	0	56,182	0	0	0	56,182	34.05
USR PM Lead Engineer (480hrs/yr)	2400.00	HR		0.00	0.00	46.23	0.00	0.00	0.00	46.23	
				0.00	0	110,952	0	0	0	110,952	46.23
USR PM Construction Engineer (1250hrs/yr)	6250.00	HR		0.00	0.00	36.56	0.00	0.00	0.00	36.56	
				0.00	0	228,500	0	0	0	228,500	36.56
USR PM Principle Engineer (200hrs/yr)	1000.00	HR		0.00	0.00	69.65	0.00	0.00	0.00	69.65	
				0.00	0	69,650	0	0	0	69,650	69.65
USR PM Support Engineer (1210hrs/yr)	6050.00	HR		0.00	0.00	64.00	0.00	0.00	0.00	64.00	
				0.00	0	387,200	0	0	0	387,200	64.00
TOTAL Water Manageme					0	878,530	0	0	0	878,530	

331XX.05. Surface Water

331XX.05.92.10. Water Treatment

	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR PM Engineering Manager (100hrs/yr)	500.00	HR		0.00	0.00	52.09	0.00	0.00	0.00	52.09	
				0.00	0	26,045	0	0	0	26,045	52.09
USR PM Lead Engineer (480hrs/yr)	2400.00	HR		0.00	0.00	46.23	0.00	0.00	0.00	46.23	
				0.00	0	110,952	0	0	0	110,952	46.23
USR PM Consulting Services	5.00	YR		0.00	0.00	0.00	0.00	0.00	10000.00	10000.00	
				0.00	0	0	0	0	50,000	50,000	10000.00
USR PM Testing & Analysis	5.00	YR		0.00	0.00	0.00	0.00	0.00	20000.00	20000.00	
				0.00	0	0	0	0	100,000	100,000	20000.00
USR PM EDI - HP Tech	5.00	YR		0.00	0.00	0.00	0.00	0.00	14758.00	14758.00	
				0.00	0	0	0	0	73,790	73,790	14758.00
USR PM Insitu. lining sed. basin discharge pipe	5.00	YR		0.00	0.00	0.00	0.00	0.00	20000.00	20000.00	
				0.00	0	0	0	0	100,000	100,000	20000.00
USR PM Permit Coordinator (400hrs/yr)	2000.00	HR		0.00	0.00	65.00	0.00	0.00	0.00	65.00	
				0.00	0	130,000	0	0	0	130,000	65.00
USR PM Chemical Engineer (1040hrs/yr)	5200.00	HR		0.00	0.00	65.00	0.00	0.00	0.00	65.00	
				0.00	0	338,000	0	0	0	338,000	65.00
USR PM Resin Change Out	5.00	YR		0.00	0.00	0.00	0.00	0.00	128500.00	128500.00	
				0.00	0	0	0	0	642,500	642,500	128500.00
USR PM Bag Filters	5.00	YR		0.00	0.00	0.00	0.00	1000.00	0.00	1000.00	
				0.00	0	0	0	5,000	0	5,000	1000.00
USR PM Misc. Pvc/Hose Ftg.'s etc...	5.00	YR		0.00	0.00	0.00	0.00	12000.00	0.00	12000.00	
				0.00	0	0	0	60,000	0	60,000	12000.00
USR PM Freeze Protection	5.00	YR		0.00	0.00	0.00	0.00	0.00	10000.00	10000.00	
				0.00	0	0	0	0	50,000	50,000	10000.00

331XX.05. Surface Water	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
TOTAL Water Treatmen					0	604,997	0	65,000	1,016,290	1,686,287	
TOTAL Additional Lab					0	1,483,527	0	65,000	1,016,290	2,564,817	
TOTAL Surface Water					0	1,483,527	0	65,000	1,016,290	2,564,817	

331XX.08. Solids Collect	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.08. Solids Collect and Containment
Parameters/Assumptions:

Beneficial reuse is not considered for this estimate, therefore all excavated material is assumed to be disposed offsite. Material excavated at the SLAPS site is assumed to be hauled to the rail spur by scrapers. All other excavated material will be loaded into trucks, hauled to the rail spur and stockpiled on loading pad for loading into rail cars.

Factors:
Over-Excavation = 20%
Swell = 25%

Excavation:
Impacted InSiti Volume to be Removed -

Location	Insitu Volume	Excav. Volume (+20 overexcavation)	Trans/Disposal/ Backfill Volume (+25% swell)
SLAPS	102,618	123,142	153,927
SLAPS VP's	27,871	33,445	41,806
HISS/Futura	55,808	66,970	83,712
- Piles	0	0	0
- Futura Buildings	0	0	0
LATTY VP's	41,751	50,101	62,627
SLAPS VP Roads	718	862	1,077
SLAPS VP Railroads	353	424	530
Latty Roads	0	0	0
Latty Railroads	0	0	0
Coldwater Creek VP's	2,377	2,852	3,565
Coldwater Creek	517	620	776
Total	232,013	278,416	348,020

Total Excavated Volume (InSitu) = 278,416 cy (incl. over-excavation)
Total Excavated Volume (ExSitu) = 348,020 cy

InSitu Volume used for excavation
ExSitu Volume used for, hauling, loading into rail cars, spreading & compaction of backfill.

Production Rate:
Due to ineffeciencies assumed for this type of work, production rates are adjusted by an efficiency factor as well as the HTRW productivity factor.
Database production rates for excavation are based on BCY's.(InSiti)
Assume level of protection to be Level D Modified
Efficiency Factor = 75%
HTRW Productivity factor = 82%

331XX.08. Solids Collect

331XX.08.01. Contaminated Soil Collection

Includes the removal during remedial action of solid contaminated soil HTRW waste by front end loader, backhoe, gradall, clamshell, dragline or other mechanical means.
Assume bulk excavation to be acomplished using scrapers and dozers(SLAPS).
All other material will be loaded directly into trucks and hauled to the rail spur for disposal.
PPE is not considered for hauling.

331XX.08.01.02. Excavation

Production rates:
Excavation by Hyd.Excavator = 162.5cy/hr x .75 x .82 = 100cy/hr
Excavation by Scraper = 112.5cy/hr x .75 x.82 = 69cy/hr
Excavation by Dozer = 115cy/hr x .75 x .82 = 71cy/hr

USE 70cy/hr for scapers & dozers

		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
L CIV PM	Excavate & loa					0.02	0.82	1.25	0.00	0.00	2.07	
	d, hydr excava	155274	CY	CODEB12D	100.00	3,105	127,682	194,341	0	0	322,023	2.07
	tor, 3.5 CY, medium matl											
L MIL PM	Excavation, bu					0.03	1.05	1.76	0.00	0.00	2.82	
	lk, scraper, 25 BCY	123142	CY	CODSB33E	70.00	3,165	129,890	217,247	0	0	347,137	2.82
L CIV PM	Excavating, bu					0.02	0.87	1.19	0.00	0.00	2.06	
	lk, medium mat l, 300' push, dozer, open site, 335 HP	123142	CY	CODTB10M	70.00	2,635	107,601	146,243	0	0	253,845	2.06
TOTAL	Excavation	278416	CY			8,905	365,173	557,831	0	0	923,005	3.32

331XX.08. Solids Collect	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.08.01.03. Hauling											
MIL PM Hauling, hwy h					0.03	0.94	0.98	0.00	0.00	1.92	
aulers, 12 CY, 1 mi round trip @ 20 MPH (4.2 cyc/hr)	348020	CY	COEIB34B	40.00	8,701	327,034	342,347	0	0	669,382	1.92
TOTAL Hauling	348020	CY			8,701	327,034	342,347	0	0	669,382	1.92

331XX.08. Solids Collect

331XX.08.01.90. Additional Labor & Services

	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR PM Engineering Manager (100hrs/yr)	500.00	HR		0.00	0.00	52.09	0.00	0.00	0.00	52.09	
				0.00	0	26,045	0	0	0	26,045	52.09
USR PM Lead Engineer (280hrs/yr)	1400.00	HR		0.00	0.00	46.23	0.00	0.00	0.00	46.23	
				0.00	0	64,722	0	0	0	64,722	46.23
USR PM Principle Engineer (330hrs/yr)	1650.00	HR		0.00	0.00	34.05	0.00	0.00	0.00	34.05	
				0.00	0	56,182	0	0	0	56,182	34.05
USR PM Field Engineer (2080hrs/yr)	10400	HR		0.00	0.00	66.00	0.00	0.00	0.00	66.00	
				0.00	0	686,400	0	0	0	686,400	66.00
USR PM Field Engineer (2080hrs/yr)	10400	HR		0.00	0.00	66.00	0.00	0.00	0.00	66.00	
				0.00	0	686,400	0	0	0	686,400	66.00
USR PM Surveying Services	5.00	YR		0.00	0.00	0.00	0.00	0.00	70000.00	70000.00	
				0.00	0	0	0	0	350,000	350,000	70000.00
USR PM Geotech Services	5.00	YR		0.00	0.00	0.00	0.00	0.00	20500.00	20500.00	
				0.00	0	0	0	0	102,500	102,500	20500.00
TOTAL Additional Lab					0	1,519,750	0	0	452,500	1,972,250	
TOTAL Contaminated S	278416	CY			17,606	2,211,957	900,179	0	452,500	3,564,636	12.80
TOTAL Solids Collect					17,606	2,211,957	900,179	0	452,500	3,564,636	

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.19. Disposal (Commercial)

Parameters/Assumptions:

As sufficient quantities of contaminated material is stockpiled at the rail spur it will be loaded into the gondola cars and shipped to Envirocare of Utah. Rail availability is considered to be unconstrained, all gondola cars are available as required.

Reference 08 Solids Collect. and Containment notes for quantities.
Assumptions:
Gondola Capacity = 80 lcy
Gondola liner = $450/ea
Absorbent Material = $20 /car
Rail Transportation = $ 6,850 /car
Commercial Disposal Fees -
  Envirocare - Bulk Soil = $ 104/cy
  Envirocare - Mixed Waste = $458/cy
  Envirosafe - Bulk Soil = $ $85/cy
  Envirosafe - Mixed Waste = $110/cy
Assume level of protection to be Level D Modified.

Disposal Quantities by Location -
Slaps -
  Bulk Soil
    Envirosafe 115,445cy
    Envirocare 38,482cy
Slaps VP's -
  Bulk Soil
    Envirosafe 82,785cy
    Envirocare 27,595cy
Hiss/Futura -
  Bulk Soil
    Envirosafe 31,392cy
    Envirocare 31,392cy
  Mixed Waste
    Envirosafe 10,464cy
    Envirocare 10,464cy
Futura Buildings -
  Bulk Soil
    Envirosafe 0cy
    Envirocare 0cy
  Mixed Waste
    Envirosafe 0cy
    Envirocare 0cy

Summary -
  Envirosafe
    Bulksoil 229,623cy
    Mixed Waste 10,464cy
  Envirocare

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

Bulksoil 97,469cy
Mixed Waste 10,464cy

331XX.19.21. Transport to Storage/Disp Facil

Transport to storage/disposal facility during remedial action includes equipment, materials, and labor for hauling, loading and unloading of solid wastes.

331XX.19.21.01. Loading of Solids

Assume F.E.Loader to load material into gondola cars from stockpile pad. The gondola cars have a capacity of approximately 80cy's and will be lined with a disposable liner. Liner is estimated to cost approximately $450/car.

ExSitu Quantity to be used for loading into gondola cars.
Total ExSitu Quant. = 348,020cy

Production Rate:
Assume that 6 rail cars can be loaded per day. (site wide average)
6ea/day @ 80cy/ea = 480cy/day or 60cy/hr
348,020cy / 60cy/hr = 5,800hrs
348,020cy / 80cy/car = 4,351 rail cars

Use two F.E.Loaders, one to move the material around and one to load the cars, six laborers (working foreman), four to line the gondolas and two to close up after loading and a Health Physicist Technician for 1/2hr per rail car for inspection.

EP PM	LDR,FE, WH, 5.				0.00	0.00	55.71	0.00	0.00	55.71	
	00 CY, ARTIC, 970F(2ea)	11600 HR	L40CA017	1.00	0	0	646,268	0	0	646,268	55.71
MIL PM	Outside Equip.				1.00	44.95	0.00	0.00	0.00	44.95	
	Operators, Heavy(2ea)	11600 HR	X-EQOPRHVY	1.00	11,600	521,464	0	0	0	521,464	44.95
MIL PM	Outside Labore				1.00	38.86	0.00	0.00	0.00	38.86	
	rs Foreman	5800.00 HR	X-LABORER	1.00	5,800	225,386	0	0	0	225,386	38.86
MIL PM	Outside Labore				1.00	37.86	0.00	0.00	0.00	37.86	
	rs (5ea)	29000 HR	X-LABORER	1.00	29,000	1,097,928	0	0	0	1,097,928	37.86
USR PM	Disposable lin				0.00	0.00	0.00	450.00	0.00	450.00	
	er	4351.00 EA		0.00	0	0	0	1,957,950	0	1,957,950	450.00

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR PM Absorbent Mate					0.00	0.00	0.00	20.00	0.00	20.00	
rial	4351.00	EA		0.00	0	0	0	87,020	0	87,020	20.00
TOTAL Loading of Sol	348020	CY			46,400	1,844,778	646,268	2,044,970	0	4,536,017	13.03

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.21.90. Transportation Costs											
USR PM Rail Trans. Co					0.00	0.00	0.00	0.00	6850.00	6850.00	
st (per rail c	4351.00	EA		0.00	0	0	0	0	29804350	29,804,350	6850.00
ar)											
TOTAL Transportation	348020	CY			0	0	0	0	29804350	29,804,350	85.64
TOTAL Transport to S	348020	CY			46,400	1,844,778	646,268	2,044,970	29804350	34,340,367	98.67

331XX.19. Disposal (Comm

331XX.19.22. Disposal Fees and Taxes

Provides for all fees and taxes charged during remedial action for the disposal of wastes. These include fees and taxes charged at third party/commercial facilities.

331XX.19.22.01. Landfill/Burial Grounds

	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR PM Envirosafe - Bulk Soil	229623	CY		0.00	0.00	0.00	0.00	0.00	85.00	85.00	
				0.00	0	0	0	0	19517955	19,517,955	85.00
USR PM Envirosafe - Mixed Waste	10464	CY		0.00	0.00	0.00	0.00	0.00	123.00	123.00	
				0.00	0	0	0	0	1,287,072	1,287,072	123.00
USR PM Envirocare - Bulk Soil	97469	CY		0.00	0.00	0.00	0.00	0.00	97.00	97.00	
				0.00	0	0	0	0	9,454,493	9,454,493	97.00
USR PM Envirocare - Mixed Waste	10464	CY		0.00	0.00	0.00	0.00	0.00	484.00	484.00	
				0.00	0	0	0	0	5,064,576	5,064,576	484.00
TOTAL Landfill/Buria	348020	CY			0	0	0	0	35324096	35,324,096	101.50
TOTAL Disposal Fees	348020	CY			0	0	0	0	35324096	35,324,096	101.50

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.90. Transportation and Disposal of Building Decon. Material											
Costs for building decon/roof remediation is based on the proposal for the GIFREHC building ($3,000,000) and only considers transportation and disposal of roofing material.											
331XX.19.90.01. VP-1L (Wagner Brake)											
USR PM Transportation					0.00	0.00	0.00	0.00	18.75	18.75	
& Disposal of Remediated roofing Material	225300	SF		0.00	0	0	0	0	4,224,375	4,224,375	18.75
TOTAL VP-1L (Wagner					0	0	0	0	4,224,375	4,224,375	

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.90.02. VP-2L (GIFREHC)											
USR PM Transportation					0.00	0.00	0.00	0.00	18.75	18.75	
& Disposal of Remediated roofing Material	160000	SF		0.00	0	0	0	0	3,000,000	3,000,000	18.75
TOTAL VP-2L (GIFREH					0	0	0	0	3,000,000	3,000,000	

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.90.03. VP-3L											
USR PM Transportation					0.00	0.00	0.00	0.00	18.75	18.75	
& Disposal of Remediated roofing Material	131100	SF		0.00	0	0	0	0	2,458,125	2,458,125	18.75
TOTAL VP-3L					0	0	0	0	2,458,125	2,458,125	

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.90.04. VP-4L											
USR PM Transportation					0.00	0.00	0.00	0.00	18.75	18.75	
& Disposal of Remediated roofing Material	73400	SF		0.00	0	0	0	0	1,376,250	1,376,250	18.75
TOTAL VP-4L					0	0	0	0	1,376,250	1,376,250	

331XX.19. Disposal (Comm	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.19.90.05. VP-5L											
USR PM Transportation					0.00	0.00	0.00	0.00	18.75	18.75	
& Disposal of Remediated roofing Material	81600	SF		0.00	0	0	0	0	1,530,000	1,530,000	18.75
TOTAL VP-5L					0	0	0	0	1,530,000	1,530,000	
TOTAL Transportation					0	0	0	0	12588750	12,588,750	
TOTAL Disposal (Comm					46,400	1,844,778	646,268	2,044,970	77717196	82,253,213	

331XX.20. Site Restorati	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.20. Site Restoration
North County Areas -
Slaps = 22.7 acres
HISS = 11 acres
VP's = 53 acres
Total North County (unrestricted) = 86.7 acres , assume 75% for restoration

Total assumed acreage to be restored = 65 acres

331XX.20.01. Earthwork

331XX.20.01.07. Grading

L USR PM Subgrade, Fine				8.00	324.37	131.55	0.00	0.00	455.92	
Grading +/- . 1'	65.00	ACR	COFGA	0.25	520	21,084	8,550	0	0	29,635	455.92
L USR PM Rough Grade wi				1.67	70.72	104.83	0.00	0.00	175.55	
th Dozer	65.00	ACR	CODTG	0.75	108	4,597	6,814	0	0	11,411	175.55
TOTAL Grading	65.00	ACR			628	25,681	15,364	0	0	41,045	631.47
TOTAL Earthwork					628	25,681	15,364	0	0	41,045	

331XX.20. Site Restorati

331XX.20.04. Revegetation And Planting

Revegetation and planting provides for the complete restoration of areas affected by remedial action construction. This includes fine grading and leveling of topsoil(refer. earthwork), seeding, mulching, fertilizer, sodding, erosion control, shrubs, and trees.

331XX.20.04.01. Seeding/Mulch/Fertilizer

		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR PM	18.36 Lb/1000					1.02	38.50	39.40	22.65	0.00	100.55	
	SF Fertilizer, Sprayed from Truck	65.00	ACR	COFWK	1.72	66	2,503	2,561	1,472	0	6,536	100.55
B USR PM	Mechanical Seeding	65.00	ACR	ULABE	0.50	2.50 163	95.15 6,185	0.00 0	750.20 48,763	0.00 0	845.35 54,948	845.35
AF PM	Watering, water by truck	65.00	ACR	COFWB59	1.43	0.70 45	26.20 1,703	31.81 2,068	0.87 57	0.00 0	58.88 3,827	58.88
TOTAL	Seeding/Mulch/	65.00	ACR			274	10,390	4,629	50,292	0	65,311	1004.78

331XX.20. Site Restorati	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.20.04.02. Miscelaneous Landscaping											
USR PM Misc. Landscap					0.00	0.00	0.00	0.00	500.00	500.00	
ing	65.00	ACR		0.00	0	0	0	0	32,500	32,500	500.00
TOTAL Miscelaneous L	65.00	ACR			0	0	0	0	32,500	32,500	500.00
TOTAL Revegetation A					274	10,390	4,629	50,292	32,500	97,811	

331XX.20. Site Restorati	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.20.92. Site Cleanup											
USR PM Site Debris Cl					6.40	250.47	95.77	0.00	0.00	346.24	
ean-Up & Remov al	65.00	AC	COETF	0.63	416	16,280	6,225	0	0	22,505	346.24
TOTAL Site Cleanup					416	16,280	6,225	0	0	22,505	
TOTAL Site Restorati					1,318	52,352	26,218	50,292	32,500	161,362	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.21. Demobilization

The same assumptions and durations considered for Mobilization and Prepatory Work will be used for Demobilzation unless specified otherwise. Time for decon of equipment is considered part of demob. time.

Reference notes under 01 Mobilize and Preporatory work for general assumptions.

331XX.21.01. Removal Of Temporary Facilities

Removal during remedial action of temporary facilities includes demobilization and dismantling of office trailers, storage and decontamination facilities, and other temporary facilities.

331XX.21.01.01. Office Trailers (contr.'s only)

USR PM Disconnect and					0.00	0.00	0.00	0.00	750.00	750.00	
Remove	8.00	EA		0.00	0	0	0	0	6,000	6,000	750.00
TOTAL Office Trailer	8.00	EA			0	0	0	0	6,000	6,000	750.00

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.01.02. Storage Facilities											
Assume the staging areas to be removed after the completion of the last contract.											
USR PM Removal of Sta					0.00	0.00	0.00	0.00	5000.00	5000.00	
ging Area	1.00	LS		0.00	0	0	0	0	5,000	5,000	5000.00
TOTAL Storage Facili	2.00	EA			0	0	0	0	5,000	5,000	2500.00

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.01.05. Decon. Fac. for Const. Equip.											
Decon. facility is presently in place at the SLAPS site. Assume the decon. facility to be removed after the completion of the last contract. Assume 25% of the original estimated cost for removal.											
USR PM Remove Deconta					0.00	0.00	0.00	0.00	15000.00	15000.00	
mination Facil	1.00	EA		0.00	0	0	0	0	15,000	15,000	15000.00
ity											
TOTAL Decon. Fac. f					0	0	0	0	15,000	15,000	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.01.10. Toilets											
Assume 2 portable toilets to be removed per each contract. (16ea)											
USR PM Portable Toile					0.00	0.00	0.00	0.00	100.00	100.00	
ts	16.00	EA		0.00	0	0	0	0	1,600	1,600	100.00
TOTAL Toilets	16.00	EA			0	0	0	0	1,600	1,600	100.00

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.01.11. Barricades											
Assume a lump sum cost per contract for removal.											
USR PM Remove Barrica					0.00	0.00	0.00	0.00	1500.00	1500.00	
des	8.00	EA		0.00	0	0	0	0	12,000	12,000	1500.00
TOTAL Barricades					0	0	0	0	12,000	12,000	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.01.28. Signs											
Assume a cost per contract for removal.											
USR PM Remove Project					0.00	0.00	0.00	0.00	100.00	100.00	
Signs	16.00	EA		0.00	0	0	0	0	1,600	1,600	100.00
TOTAL Signs	16.00	EA			0	0	0	0	1,600	1,600	100.00
TOTAL Removal Of Tem					0	0	0	0	41,200	41,200	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.21.02. Removal Of Temporary Utilities

Provides for the dismantling and disconnection of project utilities during remedial action including site power and lighting, telephone/communication service, water, sewer and gas service.

331XX.21.02.02. Power Connection/Distribution

USR PM	Temp. power di				0.00	0.00	0.00	0.00	500.00	500.00	
	sconnect/contr	8.00	EA	0.00	0	0	0	0	4,000	4,000	500.00
	act										
TOTAL	Power Connecti				0	0	0	0	4,000	4,000	

331XX.21.02.03. Telephone/Communication Dist.

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
L USR PM Disconnection					0.06	2.46	1.88	0.00	50.00	54.34	
Fee (per contr act)	8.00	EA	COETW	60.00	0	20	15	0	400	435	54.34
TOTAL Telephone/Comm					0	20	15	0	400	435	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.02.04. Water Connection/Distribution											
USR PM Disconnection					0.00	0.00	0.00	0.00	500.00	500.00	
Fee	8.00	EA		0.00	0	0	0	0	4,000	4,000	500.00
TOTAL Water Connecti					0	0	0	0	4,000	4,000	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.02.05. Sewer Connection/Distribution											
USR PM Disconnection					0.00	0.00	0.00	0.00	300.00	300.00	
Fee	8.00	EA		0.00	0	0	0	0	2,400	2,400	300.00
TOTAL Sewer Connecti					0	0	0	0	2,400	2,400	
TOTAL Removal Of Tem					0	20	15	0	10,800	10,835	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

331XX.21.04. Demob of Construction Equip/Facl

Work associated with demobilization of remedial action construction equipment and temporary facilities. Includes transportation, manifests, tolls, permits, escort vehicles, drivers, and equipment operators.

331XX.21.04.05. Permits

USR PM Permits (all i					0.00	0.00	0.00	0.00	500.00	500.00	
nclusive)	8.00	EA		0.00	0	0	0	0	4,000	4,000	500.00
TOTAL Permits					0	0	0	0	4,000	4,000	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.04.07. Demob. of Construction Equipment											
UPB PM TRK,WTR,OF-HY, 6000GAL,W/CAT 621E	64.00	HR	T60KI002	1.00	0.00 0	0.00 0	61.38 3,928	0.00 0	0.00 0	61.38 3,928	61.38
UPB PM TRK,WTR,OF-HY, 6000GAL,W/CAT 621E	256.00	HR	T60KI002	1.00	0.00 0	0.00 0	15.28 3,911	0.00 0	0.00 0	15.28 3,911	15.28
UPB PM HYD EXCAV, CRW LR, 3.125CY BK T	32.00	HR	H25CA008	0.00	0.00 0	0.00 0	134.41 4,301	0.00 0	0.00 0	134.41 4,301	134.41
UPB PM HYD EXCAV, CRW LR, 3.125CY BK T	256.00	HR	H25CA008	0.00	0.00 0	0.00 0	36.79 9,419	0.00 0	0.00 0	36.79 9,419	36.79
MIL PM ROLLER,VIB,SD, S/P,13.0T,66"W ,PAD	64.00	HR	R50DY002	1.00	0.00 0	0.00 0	29.67 1,899	0.00 0	0.00 0	29.67 1,899	29.67
MIL PM ROLLER,VIB,SD, S/P,13.0T,66"W ,PAD	256.00	HR	R50DY002	1.00	0.00 0	0.00 0	6.41 1,642	0.00 0	0.00 0	6.41 1,642	6.41
MAP PM DOZER,CWLR, D-6H PS,W/BLADE (ADD ATTACHMENTS)	64.00	HR	T15CA010	1.00	0.00 0	0.00 0	49.71 3,182	0.00 0	0.00 0	49.71 3,182	49.71
MAP PM DOZER,CWLR, D-6H PS,W/BLADE (ADD ATTACHMENTS)	256.00	HR	T15CA010	1.00	0.00 0	0.00 0	10.52 2,694	0.00 0	0.00 0	10.52 2,694	10.52
MAP PM DOZER,CWLR, D-8R PS,W/BLADE (ADD ATTACHMENTS)	64.00	HR	T15CA016	1.00	0.00 0	0.00 0	60.94 3,900	0.00 0	0.00 0	60.94 3,900	60.94
MAP PM DOZER,CWLR, D-8R PS,W/BLADE (ADD ATTACHMENTS)	256.00	HR	T15CA016	1.00	0.00 0	0.00 0	15.62 3,998	0.00 0	0.00 0	15.62 3,998	15.62
MIL PM SCRAPER,SELF, 21-31CY, 37.5T , PS (2ea)	128.00	HR	S15CA002	1.00	0.00 0	0.00 0	98.56 12,615	0.00 0	0.00 0	98.56 12,615	98.56

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
MIL PM SCRAPER,SELF,					0.00	0.00	27.94	0.00	0.00	27.94	
21-31CY, 37.5T	512.00	HR	S15CA002	1.00	0	0	14,307	0	0	14,307	27.94
, PS											
(2ea)											
UPB PM LDR,FE, WH, 4.					0.00	0.00	60.99	0.00	0.00	60.99	
50 CY, ARTIC,	128.00	HR	L40CA006	1.00	0	0	7,807	0	0	7,807	60.99
966E											
(2ea)											
UPB PM LDR,FE, WH, 4.					0.00	0.00	15.67	0.00	0.00	15.67	
50 CY, ARTIC,	512.00	HR	L40CA006	1.00	0	0	8,021	0	0	8,021	15.67
966E											
(2ea)											
USR PM CR,ME,CWLR,LIF					0.00	0.00	91.24	0.00	0.00	91.24	
TING, 85T/160'	16.00	HR	C85AM010	1.00	0	0	1,460	0	0	1,460	91.24
BOOM											
USR PM CR,ME,CWLR,LIF					0.00	0.00	30.43	0.00	0.00	30.43	
TING, 85T/160'	64.00	HR	C85AM010	1.00	0	0	1,947	0	0	1,947	30.43
BOOM											
USR PM PILE HAMMER,VI					0.00	0.00	63.45	0.00	0.00	63.45	
B,116T FORCE D	16.00	HR	P30MK003	1.00	0	0	1,015	0	0	1,015	63.45
RIVE											
(ADD LEADS & CRANE)											
USR PM PILE HAMMER,VI					0.00	0.00	11.95	0.00	0.00	11.95	
B,116T FORCE D	64.00	HR	P30MK003	1.00	0	0	765	0	0	765	11.95
RIVE											
(ADD LEADS & CRANE)											
UPB PM TRLR,LOWBOY, 4					0.00	0.00	6.88	0.00	0.00	6.88	
0T, 3 AXLE	80.00	HR	T45XX015	1.00	0	0	551	0	0	551	6.88
(ADD TOWING TRUCK)											
UPB PM TRK,HWY, 46,00					0.00	0.00	35.40	0.00	0.00	35.40	
0 GVW, 6X4, 3	80.00	HR	T50FO018	1.00	0	0	2,832	0	0	2,832	35.40
AXLE											
MIL PM TRK,HWY,10,000					0.00	0.00	7.97	0.00	0.00	7.97	
GVW,4X2, 1T-PI	80.00	HR	T50FO005	1.00	0	0	638	0	0	638	7.97
CKUP											

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
MIL PM Outside Equip.					1.00	44.95	0.00	0.00	0.00	44.95	
Operators, Heavy	80.00	HR	X-EQOPRHVY	1.00	80	3,596	0	0	0	3,596	44.95
MIL PM Outside Equip.					1.00	42.23	0.00	0.00	0.00	42.23	
Operators, Medium	80.00	HR	X-EQOPRMED	1.00	80	3,379	0	0	0	3,379	42.23
MIL PM Outside Truck					1.00	37.59	0.00	0.00	0.00	37.59	
Drivers, Heavy	80.00	HR	X-TRKDVRHV	1.00	80	3,007	0	0	0	3,007	37.59
MIL PM Outside Laborers, (Semi-Skilled) - 2ea	160.00	HR	X-LABORER	1.00	160	6,058	0	0	0	6,058	37.86
TOTAL Demob. of Cons					400	16,040	90,832	0	0	106,871	

331XX.21. Demobilization

331XX.21.04.90. Decon. of Construction Equipment

It is assumed that all equipment will be mobed., decontaminated, and demobed for each contract. Decontaminate 7pc.'s/contract x 8 contracts = 56pc's of equipment . Decontamination of construction equipment is assumed to be spread over the 5 year duration considered this study. Use 2days/pc. of equip.

Decon. Crew and Equipment -

Mechanics Truck
Compressor
Power Washer
Misc. Small Tools

Operator/Mechanic
Laborers -2ea

		QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
MIL PM	TRK,HWY,10,000 GVW,4X2, 1T-PI CKUP	896.00	HR	T50FO005	1.00	0.00 0	0.00 0	7.97 7,143	0.00 0	0.00 0	7.97 7,143	7.97
MIL PM	Outside Equip. Operators, Mechanic	896.00	HR	X-EQOPRMED	1.00	1.00 896	42.23 37,841	0.00 0	0.00 0	0.00 0	42.23 37,841	42.23
MIL PM	Outside Labore rs, (Semi-Skil led) - 2ea	1792.00	HR	X-LABORER	1.00	1.00 1,792	37.86 67,844	0.00 0	0.00 0	0.00 0	37.86 67,844	37.86
NON PM	SMALL TOOLS	896.00	HR	XMIXX020	1.00	0.00 0	0.00 0	1.57 1,407	0.00 0	0.00 0	1.57 1,407	1.57
MAP PM	WATER BLASTR, HOT WTR, 3000 PSI TRLR MTD	896.00	HR	W25SD004	1.00	0.00 0	0.00 0	8.48 7,598	0.00 0	0.00 0	8.48 7,598	8.48
EP PM	AIR COMPR, 250 CFM, 100 PSI (ADD HOSES & ATTACHMENTS)	896.00	HR	A15SR005	1.00	0.00 0	0.00 0	7.55 6,763	0.00 0	0.00 0	7.55 6,763	7.55
TOTAL	Decon. of Cons					2,688	105,686	22,911	0	0	128,597	
TOTAL	Demob of Const					3,088	121,725	113,743	0	4,000	239,468	

331XX.21. Demobilization	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
331XX.21.06. Submittals											
Submittals are incurred for obtaining all necessary site clean closure documentation. These include all final reports, punch lists, project acceptance, final QA/QC reports and As-Built Drawings during remedial action .											
Assume a engineer and technicion for 80hrs/contract or 160hr/ea for contract closeout.											
331XX.21.06.03. Project Acceptance											
Assume 40hrs/ea contract for contract close-out											
FOP PM Field Engineer					1.00	27.16	0.00	0.00	0.00	27.16	
	320.00	HR	FC-FLDER	1.00	320	8,690	0	0	0	8,690	27.16
FOP PM Field Constr.Q					1.00	19.35	0.00	0.00	0.00	19.35	
C.Technician	320.00	HR	FC-FLABT	1.00	320	6,191	0	0	0	6,191	19.35
TOTAL Project Accept	8.00	EA			640	14,881	0	0	0	14,881	1860.14
TOTAL Submittals					640	14,881	0	0	0	14,881	
TOTAL Demobilization					3,728	136,626	113,758	0	56,000	306,384	
TOTAL HTRW REMEDIAL					107,809	7,347,523	2,894,100	3,560,837	89857021	103,659,481	

332XX.01. Engineering Du	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
332XX. ENGINEERING DURING CONSTRUCTION								
332XX.01. Engineering During Construction								
USR Engineering Du		0.00	0.00	0.00	0.00	1388000	1388000.00	
ring Construct	1.00 LS	0.00 0	0	0	0	1,388,000	1,388,000	1388000.00
ion								
(1%)								
TOTAL Engineering Du		0	0	0	0	1,388,000	1,388,000	
TOTAL ENGINEERING DU		0	0	0	0	1,388,000	1,388,000	

333XX.01. CONSTRUCTION M	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
333XX. CONSTRUCTION MANAGEMENT (S&A)								
333XX.01. CONSTRUCTION MANAGEMENT (S&A)								
USR Construction M		0.00	0.00	0.00	0.00	8329000	8329000.00	
anagement (6%)	1.00 LS	0.00 0	0	0	0	8,329,000	8,329,000	8329000.00
TOTAL CONSTRUCTION M		0	0	0	0	8,329,000	8,329,000	
TOTAL CONSTRUCTION M		0	0	0	0	8,329,000	8,329,000	

34XXX.20. Operation, Mai	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST

34XXX. POST-REMEDIAL ACTION
(Post Remedial Action)
34XXX.20. Operation, Maint. & Monitoring
34XXX.20.01. Final Status Surveys
Costs were developed by field personnel and are based on projected manhours for individual tasks. The following items were considered ; walkover surveys, surveying in sample locations, sample collection, data analysis, preperation of reports, radiological analysis, QA/QC, metals analysis, on-site lab analysis and commercial lab analysis(off-site). Reference cost estimate backup data per file.
34XXX.20.01. 5. North County Properties

USR	Class 1 Survey				0.00	0.00	0.00	0.00	13200.00	13200.00	
	s	184.00	EA	0.00	0	0	0	0	2,428,800	2,428,800	13200.00
USR	Class 2 Survey				0.00	0.00	0.00	0.00	12600.00	12600.00	
	s	70.00	EA	0.00	0	0	0	0	882,000	882,000	12600.00
USR	Class 3 Survey				0.00	0.00	0.00	0.00	12600.00	12600.00	
	s	20.00	EA	0.00	0	0	0	0	252,000	252,000	12600.00
TOTAL	North County P				0	0	0	0	3,562,800	3,562,800	

34XXX.20.01.10. Coldwater Creek

34XXX.20. Operation, Mai	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
USR Class 1 Survey		0.00	0.00	0.00	0.00	13200.00	13200.00	
s	20.00 EA	0.00 0	0	0	0	264,000	264,000	13200.00
USR Class 2 Survey		0.00	0.00	0.00	0.00	12600.00	12600.00	
s	124.00 EA	0.00 0	0	0	0	1,562,400	1,562,400	12600.00
USR Class 3 Survey		0.00	0.00	0.00	0.00	12600.00	12600.00	
s	140.00 EA	0.00 0	0	0	0	1,764,000	1,764,000	12600.00
TOTAL Coldwater Cree		0	0	0	0	3,590,400	3,590,400	

34XXX.20. Operation, Mai	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
34XXX.20.01.15. North County Buildings								
USR Class 2 Survey		0.00	0.00	0.00	0.00	10100.00	10100.00	
s	89.00 EA	0.00 0	0	0	0	898,900	898,900	10100.00
USR Class 3 Survey		0.00	0.00	0.00	0.00	1600.00	1600.00	
s	40.00 EA	0.00 0	0	0	0	64,000	64,000	1600.00
TOTAL North County B		0	0	0	0	962,900	962,900	

34XXX.20. Operation, Mai	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
34XXX.20.01.20. Roads								
USR Class 2 Sample		0.00	0.00	0.00	0.00	1100.00	1100.00	
s	600.00 EA	0.00 0	0	0	0	660,000	660,000	1100.00
TOTAL Roads		0	0	0	0	660,000	660,000	
TOTAL Final Status S		0	0	0	0	8,776,100	8,776,100	

34XXX.20. Operation, Mai	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
34XXX.20.02. Monitoring											
Monitoring cost includes costs associated with monitoring, sampling, testing and maintenance. Costs used are based on the current annual monitoring costs and depend on the number of areas that require monitoring. Costs are allocated as follows; SLAPS 40%, HISS/Futura 40%, LATTY 10%, SLAPS-VP 5%, AND Coldwater Creek 5%.											
USR Monitoring					0.00	0.00	0.00	0.00	686000.00	686000.00	
	1.00	LS		0.00	0	0	0	0	686,000	686,000	686000.00
TOTAL Monitoring					0	0	0	0	686,000	686,000	

34XXX.20. Operation, Mai	QUANTY UOM CREW ID	OUTPUT MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
34XXX.20.03. Five Year Review								
The review consists of land use assessment, monitoring, testing and analysis, evaluation and risk assessment.								
USR Five Year Revi		0.00	0.00	0.00	0.00	40000.00	40000.00	
ew	1.00 LS	0.00 0	0	0	0	40,000	40,000	40000.00
TOTAL Five Year Revi		0	0	0	0	40,000	40,000	

34XXX.20. Operation, Mai	QUANTY	UOM	CREW ID	OUTPUT	MANHOUR	LABOR	EQUIPMNT	MATERIAL	UNITCOST	TOTAL COST	UNIT COST
34XXX.20.04. Post Remedial Site Supervision											
Site supervision includes mowing, site maintenance and routine inspection.											
USR Site Supervisi					0.00	0.00	0.00	0.00	237000.00	237000.00	
on	1.00	LS		0.00	0	0	0	0	237,000	237,000	237000.00
TOTAL Post Remedial					0	0	0	0	237,000	237,000	
TOTAL Operation, Mai					0	0	0	0	9,739,100	9,739,100	
TOTAL POST-REMEDIAL					0	0	0	0	9,739,100	9,739,100	
TOTAL Revised FSPP -					107,809	7,347,523	2,894,100	3,560,837	127637121	141,439,581	

** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	CLABB13	5 laborers + 1 crane, hydr, trk mtd, 60 ton			PROD =	100%		CREW HOURS =		276
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	4.00	HR	37.86	4.00	151.44			151.44
MIL	B-EQOPRCRNL	Equip. Operators, Crane/Shovel	1.00	HR	44.95	1.00	44.95			44.95
MIL	B-EQOPROILL	Equip. Operators, Oilers	1.00	HR	37.28	1.00	37.28			37.28
GEN	C80Z2280 E	CRANE, HYD, TRUCK MTD, 60 TON	1.00	HR	81.32			1.00	81.32	81.32
	TOTAL					7.00	272.53	1.00	81.32	353.85
	CLABB14	5 laborers + 1 loader, BH, wheel, 0.80 CY FE bkt			PROD =	100%		CREW HOURS =		193
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	4.00	HR	37.86	4.00	151.44			151.44
MIL	B-EQOPRLT L	Equip. Operators, Light	1.00	HR	37.94	1.00	37.94			37.94
GEN	L50Z4640 E	LOADER/BH, WH, 0.80 CY (0.6 M3)	1.00	HR	12.96			1.00	12.96	12.96
	TOTAL					6.00	228.24	1.00	12.96	241.19
	CLABB78	5 laborers + 1 line striper, 3-4 guns, S/P			PROD =	100%		CREW HOURS =		5
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	4.00	HR	37.86	4.00	151.44			151.44
MIL	B-TRKDVRLTL	Truck Drivers, Light	1.00	HR	34.98	1.00	34.98			34.98
GEN	L25Z4080 E	LINE STRIPER, 3-4 GUNS	1.00	HR	13.54			1.00	13.54	13.54
GEN	T50Z7400 E	TRUCK, 20,000 - 25,000 (9072 -	1.00	HR	14.21			1.00	14.21	14.21
GEN	T40Z7000 E	FLATBED,8' (2.4 M) X 20' (6.1 M	1.00	HR	1.03			1.00	1.03	1.03
GEN	T50Z7320 E	TRUCK, PICKUP, 8,800 (3992 KG)	1.00	HR	7.75			1.00	7.75	7.75
	TOTAL					6.00	225.28	4.00	36.53	261.81
	CLADB38	3 laborers + 1 hydraulic hammer, 1,000 ft-lbs			PROD =	100%		CREW HOURS =		288
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	2.00	HR	37.86	2.00	75.72			75.72
MIL	B-EQOPRLT L	Equip. Operators, Light	1.00	HR	37.94	1.00	37.94			37.94
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.00	HR	42.23	1.00	42.23			42.23
GEN	L50Z4640 E	LOADER/BH, WH, 0.80 CY (0.6 M3)	1.00	HR	12.96			1.00	12.96	12.96
GEN	H10Z3120 E	HYD HAMMER,1000 FT-LBS (1356N-M	1.00	HR	7.97			1.00	7.97	7.97
GEN	L40Z4410 E	LOADER, F/E, WHEEL, 4.00 CY	1.00	HR	60.99			1.00	60.99	60.99
GEN	H25Z3680 E	PAVEMENT-REMOVAL BUCKET, 36"	1.00	HR	3.33			1.00	3.33	3.33
	TOTAL					5.00	194.75	4.00	85.25	280.00
	CODEB12D	1 eqoprcrn + 1 hydr excavator, crawler, 3.70 CY			PROD =	100%		CREW HOURS =		1553
MIL	B-EQOPRCRNL	Equip. Operators, Crane/Shovel	1.00	HR	44.95	1.00	44.95			44.95
MIL	B-EQOPROILL	Equip. Operators, Oilers	1.00	HR	37.28	1.00	37.28			37.28
GEN	H25Z3210 E	HYD EXCV, CRAWLER, 3.50 CY	1.00	HR	125.16			1.00	125.16	125.16
	TOTAL					2.00	82.23	1.00	125.16	207.39

** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	CODSB33E	1 eqoprmed + 1 scraper, self propelled, 21-31 CY			PROD = 100%				CREW HOURS = 1759	
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.30	HR	42.23	1.30	54.90			54.90
MIL	B-LABORER L	Laborers, (Semi-Skilled)	0.50	HR	37.86	0.50	18.93			18.93
GEN	S15Z5980 E	SCRAPER, S/P, 21-31 CY	1.00	HR	98.56			1.00	98.56	98.56
GEN	T15Z6600 E	DOZER, CRWLR, 341-440 HP	0.30	HR	83.13			0.30	24.94	24.94
	TOTAL					1.80	73.83	1.30	123.50	197.33
	CODTB10B	1 eqoprmed + 1 dozer, crawler, 181-250 HP			PROD = 100%				CREW HOURS = 2784	
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.00	HR	42.23	1.00	42.23			42.23
MIL	B-LABORER L	Laborers, (Semi-Skilled)	0.50	HR	37.86	0.50	18.93			18.93
GEN	T15Z6520 E	DOZER, CRAWLER, 181-250 HP	1.00	HR	55.76			1.00	55.76	55.76
	TOTAL					1.50	61.16	1.00	55.76	116.92
	CODTB10M	1 eqoprmed + 1 dozer, crawler, 341-440 HP			PROD = 100%				CREW HOURS = 1759	
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.00	HR	42.23	1.00	42.23			42.23
MIL	B-LABORER L	Laborers, (Semi-Skilled)	0.50	HR	37.86	0.50	18.93			18.93
GEN	T15Z6600 E	DOZER, CRWLR, 341-440 HP	1.00	HR	83.13			1.00	83.13	83.13
	TOTAL					1.50	61.16	1.00	83.13	144.30
	CODTG	1 eqoprmed + 1 Dozer, Cat D-7H, 215 Hp			PROD = 100%				CREW HOURS = 87	
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.00	HR	42.23	1.00	42.23			42.23
MIL	B-EQOPRMEDF	Equip. Operators, Medium	0.25	HR	43.23	0.25	10.81			10.81
MIL	T10CA013 E	BLADE, UNIVERSAL, HYDR (FOR D7	1.00	HR	7.34			1.00	7.34	7.34
MIL	T15CA013 E	DOZER,CWLR, D-7H,PS (ADD BLADE	1.00	HR	71.28			1.00	71.28	71.28
	TOTAL					1.25	53.04	2.00	78.62	131.66
	COEIB34B	1 trkdvrhv + 1 truck, dump, 16-23.5 CY			PROD = 100%				CREW HOURS = 26320	
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
GEN	T50Z7420 E	TRUCK, 40,000 - 45,000 (18 144	1.00	HR	37.22			1.00	37.22	37.22
GEN	T40Z6860 E	REAR DUMP BODY,16-23.5 CY (12.2	1.00	HR	2.13			1.00	2.13	2.13
	TOTAL					1.00	37.59	2.00	39.35	76.94
	COETF	2 laborer + 1 8 Cy Dump Truck,Bckhoe/Loadr			PROD = 100%				CREW HOURS = 104	
MIL	B-LABORER L	Laborers, (Semi-Skilled)	2.00	HR	37.86	2.00	75.72			75.72
MIL	B-EQOPRMEDF	Equip. Operators, Medium	1.00	HR	43.23	1.00	43.23			43.23
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
MIL	L50CA003 E	LDR,BH,WH, 1.38CY FE BKT, 30"DI	1.00	HR	19.78			1.00	19.78	19.78
MIL	T40XX008 E	REAR DUMP BODY, 8 CY,(30,000 GV	1.00	HR	2.86			1.00	2.86	2.86
MIL	T50KE003 E	TRK,HWY, 46,000 GVW, 6X4, 3 AXL	1.00	HR	37.22			1.00	37.22	37.22
	TOTAL					4.00	156.54	3.00	59.86	216.40

** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
*	COETW	2 eqoprlt + 1 1 Cy Hydr. Exc.,Cwlr + Backhoe			PROD =	100%			CREW HOURS =	0
MIL	B-ELECTRN L	Electricians	0.33	HR	52.08	0.33	17.19			17.19
MIL	B-EQOPRMEDF	Equip. Operators, Medium	0.25	HR	43.23	0.25	10.81			10.81
MIL	B-EQOPRMEDL	Equip. Operators, Medium	2.00	HR	42.23	2.00	84.47			84.47
MIL	B-TRKDVRLTL	Truck Drivers, Light	1.00	HR	34.98	1.00	34.98			34.98
MIL	H25CA023 E	HYD EXCAV, CRWLR, 1.125CY BKT,	1.00	HR	40.45			1.00	40.45	40.45
MIL	L40CA004 E	LDR,FE, WH, 2.50 CY, ARTIC, 936	1.00	HR	32.43			1.00	32.43	32.43
MIL	T40XX008 E	REAR DUMP BODY, 8 CY,(30,000 GV	1.00	HR	2.86			1.00	2.86	2.86
MIL	T50KE003 E	TRK,HWY, 46,000 GVW, 6X4, 3 AXL	1.00	HR	37.22			1.00	37.22	37.22
	TOTAL					3.58	147.44	4.00	112.96	260.40
	COFCB32F	1 eqoprmed + 1 truck, water, off-hwg, 6,000 gal			PROD =	100%			CREW HOURS =	580
MIL	B-LABORER L	Laborers, (Semi-Skilled)	1.00	HR	37.86	1.00	37.86			37.86
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.00	HR	42.23	1.00	42.23			42.23
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
GEN	R30Z5645 E	ROLLER, STATIC, S/P,13 T (12 MT	1.00	HR	16.84			1.00	16.84	16.84
GEN	T60Z7920 E	TRUCK, WATER, OFF-HWY, 6000 GAL	1.00	HR	61.38			1.00	61.38	61.38
	TOTAL					3.00	117.68	2.00	78.22	195.90
	COFGA	1 eqoprmed + 1 Grader 12-G			PROD =	100%			CREW HOURS =	260
MIL	B-LABORER L	Laborers, (Semi-Skilled)	1.00	HR	37.86	1.00	37.86			37.86
MIL	B-EQOPRMEDF	Equip. Operators, Medium	1.00	HR	43.23	1.00	43.23			43.23
MIL	G15CA003 E	GRADER,MOTOR, ARTIC, CAT 12-G	1.00	HR	32.89			1.00	32.89	32.89
	TOTAL					2.00	81.09	1.00	32.89	113.98
	COFGB36B	4 eqoprmed + 1 dozer, crawler, 251-340 HP			PROD =	100%			CREW HOURS =	25
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	2.00	HR	37.86	2.00	75.72			75.72
MIL	B-EQOPRMEDL	Equip. Operators, Medium	4.00	HR	42.23	4.00	168.94			168.94
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
GEN	G15Z3080 E	GRADER, MOTOR, ARTICULATED	1.00	HR	30.33			1.00	30.33	30.33
GEN	L35Z4240 E	LOADER, F/E, CRWLR, 1.50 CY	1.00	HR	32.84			1.00	32.84	32.84
GEN	T15Z6570 E	DOZER, CRWLR, 300-340 HP	1.00	HR	69.94			1.00	69.94	69.94
GEN	R45Z5690 E	ROLLER, VIB, TANDEM, S/P 12 T	1.00	HR	40.76			1.00	40.76	40.76
GEN	T60Z7910 E	TRUCK, WATER, OFF-HWY, 5000 GAL	1.00	HR	33.67			1.00	33.67	33.67
	TOTAL					8.00	321.10	5.00	207.55	528.65
	COFWB59	1 trkdvrhv + 1 water tanker, 5,000 gal			PROD =	100%			CREW HOURS =	45
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
GEN	T50Z7520 E	TRUCK, 50,000-55,000 (22 680-24	1.00	HR	35.72			1.00	35.72	35.72
GEN	T45Z7280 E	TRAILER, WTR TANKER, 5000 GAL	1.00	HR	9.92			1.00	9.92	9.92
	TOTAL					1.00	37.59	2.00	45.64	83.23

** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	COFWK	1 trkdvrhv + 1 truck, water, off hwy, 6,000 gal			PROD = 100%			CREW HOURS =		2035
MIL	B-EQOPRLT F	Equip. Operators, Light	0.25	HR	38.94	0.25	9.73			9.73
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
MIL	B-EQOPRLT L	Equip. Operators, Light	0.50	HR	37.94	0.50	18.97			18.97
GEN	P55Z5200 E	PUMP, SUBMERSIBLE, 6" (152 MM)	1.00	HR	6.46			1.00	6.46	6.46
GEN	T60Z7920 E	TRUCK, WATER, OFF-HWY, 6000 GAL	1.00	HR	61.38			1.00	61.38	61.38
	TOTAL					1.75	66.29	2.00	67.84	134.13
	COKBB45	1 eqoprmed + 1 asphalt distributor, 3,000 gal			PROD = 100%			CREW HOURS =		3
MIL	B-EQOPRMEDL	Equip. Operators, Medium	1.00	HR	42.23	1.00	42.23			42.23
MIL	B-TRKDVRHVL	Truck Drivers, Heavy	1.00	HR	37.59	1.00	37.59			37.59
GEN	A25Z0580 E	ASPHALT DISTR,3000 GAL(11355L)	1.00	HR	15.58			1.00	15.58	15.58
GEN	T50Z7580 E	TRUCK, 40,000 - 45,000 (18 144	1.00	HR	34.75			1.00	34.75	34.75
	TOTAL					2.00	79.82	2.00	50.33	130.16
	COKCB25	8 laborers + 1 asph finisher, w/screed, 10' wide			PROD = 100%			CREW HOURS =		20
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	7.00	HR	37.86	7.00	265.02			265.02
MIL	B-EQOPRMEDL	Equip. Operators, Medium	3.00	HR	42.23	3.00	126.70			126.70
GEN	A30Z0640 E	ASPHALT FINISHER, 10' (3.1 M),W	1.00	HR	67.08			1.00	67.08	67.08
GEN	R45Z5690 E	ROLLER, VIB, TANDEM, S/P 12 T	1.00	HR	40.76			1.00	40.76	40.76
GEN	R30Z5645 E	ROLLER, STATIC, S/P,13 T (12 MT	1.00	HR	16.84			1.00	16.84	16.84
	TOTAL					11.00	430.58	3.00	124.69	555.27
	COKCB25B	8 laborers + 1 roller,vib,tandem,S/P,12Ton,84"w			PROD = 100%			CREW HOURS =		16
MIL	B-LABORER F	Laborers, (Semi-Skilled)	1.00	HR	38.86	1.00	38.86			38.86
MIL	B-LABORER L	Laborers, (Semi-Skilled)	7.00	HR	37.86	7.00	265.02			265.02
MIL	B-EQOPRMEDL	Equip. Operators, Medium	4.00	HR	42.23	4.00	168.94			168.94
GEN	A30Z0640 E	ASPHALT FINISHER, 10' (3.1 M),W	1.00	HR	67.08			1.00	67.08	67.08
GEN	R45Z5690 E	ROLLER, VIB, TANDEM, S/P 12 T	2.00	HR	40.76			2.00	81.53	81.53
GEN	R30Z5645 E	ROLLER, STATIC, S/P,13 T (12 MT	1.00	HR	16.84			1.00	16.84	16.84
	TOTAL					12.00	472.81	4.00	165.45	638.27
	CPIDB40	5 piledrvrs + 1 crane, crawler,drag/clam, 50 ton			PROD = 100%			CREW HOURS =		223
MIL	B-PILEDRVRF	Pile Drivers	1.00	HR	44.61	1.00	44.61			44.61
MIL	B-PILEDRVRL	Pile Drivers	4.00	HR	43.61	4.00	174.45			174.45
MIL	B-EQOPRCRNL	Equip. Operators, Crane/Shovel	2.00	HR	44.95	2.00	89.91			89.91
MIL	B-EQOPROILL	Equip. Operators, Oilers	1.00	HR	37.28	1.00	37.28			37.28
GEN	C85Z2395 E	CRANE, CRWLR, DRAG/CLAM, 2.0CY	1.00	HR	72.82			1.00	72.82	72.82
GEN	P30Z4920 E	PILE HAMMER,VIB,80T(73 MT) FORC	1.00	HR	62.18			1.00	62.18	62.18
	TOTAL					8.00	346.25	2.00	135.00	481.25

** CREW BACKUP **

SRC	ITEM ID	DESCRIPTION	NO.	UOM	RATE	**** LABOR **** HOURS	COST	**** EQUIP **** HOURS	COST	TOTAL COST
	ULABA2	2 laborers + 1 truck, flatbed, 20,000-25,000 GVW			PROD = 100%				CREW HOURS =	62
MIL	B-LABORER L	Laborers, (Semi-Skilled)	2.00	HR	37.86	2.00	75.72			75.72
MIL	B-TRKDVRLTL	Truck Drivers, Light	1.00	HR	34.98	1.00	34.98			34.98
GEN	T40Z6960 E	FLATBED,8' (2.4 M) X 12' (3.7 M	1.00	HR	0.72			1.00	0.72	0.72
GEN	T50Z7400 E	TRUCK, 20,000 - 25,000 (9072 -	1.00	HR	14.21			1.00	14.21	14.21
	TOTAL					3.00	110.70	2.00	14.93	125.63
	ULABE	1 laborer			PROD = 100%				CREW HOURS =	130
MIL	B-LABORER L	Laborers, (Semi-Skilled)	1.00	HR	37.86	1.00	37.86			37.86
MIL	B-LABORER F	Laborers, (Semi-Skilled)	0.25	HR	38.86	0.25	9.71			9.71
	TOTAL					1.25	47.57	0.00	0.00	47.57
	XFLAC	2 flagger + 1 Pilot Car			PROD = 100%				CREW HOURS =	520
MIL	T50GM001 E	TRK,HWY, 3,500GVW,4X2, COMPACT-	0.13	HR	4.86			0.13	0.63	0.63
MIL	X-LABORER L	Outside Laborers, (Semi-Skilled	0.25	HR	37.86	0.25	9.46			9.46
MIL	T50GM001 U	TRK,HWY, 3,500GVW,4X2, COMPACT-	0.75	HR	0.86			0.75	0.64	0.64
	TOTAL					0.25	9.46	0.88	1.28	10.74

ITEM ID	DESCRIPTION			
0. 5.	Prime Contractor			
01XXX. G.	Rights of Entry/Temporary Permit			
32XXX.10.	Project Management			
32XXX.20.	Investigations (PRP)			
32XXX.30.	Remedial Design			
32XXX.40.	Remedial Action Contracting			
331XX.01.	Mobilize and Preparatory Work			
331XX.02.	Monitor'g,Samplng,Test &Analysis			
331XX.03.	Site Work			
CLABB13	5 laborers + 1 crane, hydr, trk mtd, 60 ton	PROD = 100%	CREW HOURS =	276
CLABB14	5 laborers + 1 loader, BH, wheel, 0.80 CY FE bkt	PROD = 100%	CREW HOURS =	193
CLABB78	5 laborers + 1 line striper, 3-4 guns, S/P	PROD = 100%	CREW HOURS =	5
CLADB38	3 laborers + 1 hydraulic hammer, 1,000 ft-lbs	PROD = 100%	CREW HOURS =	288
CODTB10B	1 eqoprmed + 1 dozer, crawler, 181-250 HP	PROD = 100%	CREW HOURS =	2784
COEIB34B	1 trkdvrhv + 1 truck, dump, 16-23.5 CY	PROD = 100%	CREW HOURS =	17619
COFCB32F	1 eqoprmed + 1 truck, water, off-hwg, 6,000 gal	PROD = 100%	CREW HOURS =	580
COFGB36B	4 eqoprmed + 1 dozer, crawler, 251-340 HP	PROD = 100%	CREW HOURS =	25
COFWK	1 trkdvrhv + 1 truck, water, off hwy, 6,000 gal	PROD = 100%	CREW HOURS =	1997
COKBB45	1 eqoprmed + 1 asphalt distributor, 3,000 gal	PROD = 100%	CREW HOURS =	3
COKCB25	8 laborers + 1 asph finisher, w/screed, 10' wide	PROD = 100%	CREW HOURS =	20
COKCB25B	8 laborers + 1 roller,vib,tandem,S/P,12Ton,84"w	PROD = 100%	CREW HOURS =	16
CPIDB40	5 piledrvrs + 1 crane, crawler,drag/clam, 50 ton	PROD = 100%	CREW HOURS =	223
ULABA2	2 laborers + 1 truck, flatbed, 20,000-25,000 GVW	PROD = 100%	CREW HOURS =	62
XFLAC	2 flagger + 1 Pilot Car	PROD = 100%	CREW HOURS =	520
331XX.05.	Surface Water Collect & Control OR)			
331XX.08.	Solids Collect and Containment			
CODEB12D	1 eqoprcrn + 1 hydr excavator, crawler, 3.70 CY	PROD = 100%	CREW HOURS =	1553
CODSB33E	1 eqoprmed + 1 scraper, self propelled, 21-31 CY	PROD = 100%	CREW HOURS =	1759
CODTB10M	1 eqoprmed + 1 dozer, crawler, 341-440 HP	PROD = 100%	CREW HOURS =	1759
COEIB34B	1 trkdvrhv + 1 truck, dump, 16-23.5 CY	PROD = 100%	CREW HOURS =	8701
331XX.19.	Disposal (Commercial) RIES)			
331XX.20.	Site Restoration			
CODTG	1 eqoprmed + 1 Dozer, Cat D-7H, 215 Hp	PROD = 100%	CREW HOURS =	87
COETF	2 laborer + 1 8 Cy Dump Truck,Bckhoe/Loadr	PROD = 100%	CREW HOURS =	104
COFGA	1 eqoprmed + 1 Grader 12-G	PROD = 100%	CREW HOURS =	260
COFWB59	1 trkdvrhv + 1 water tanker, 5,000 gal	PROD = 100%	CREW HOURS =	45
COFWK	1 trkdvrhv + 1 truck, water, off hwy, 6,000 gal	PROD = 100%	CREW HOURS =	38
ULABE	1 laborer	PROD = 100%	CREW HOURS =	130
331XX.21.	Demobilization OR)			
* COETW	2 eqoprlt + 1 1 Cy Hydr. Exc.,Cwlr + Backhoe	PROD = 100%	CREW HOURS =	0
332XX.01.	Engineering During Construction			
333XX.01.	CONSTRUCTION MANAGEMENT (S&A)			
34XXX.20.	Operation, Maint. & Monitoring			

** LABOR BACKUP **

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
MIL	B-ELECTRN	Electricians	26.45	0.0%	43.2%	14.21	0.00	52.08	HR	11/30/00	27.92	0
MIL	B-EQOPRCRN	Equip. Operators, Crane/Shovel	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	2274
MIL	B-EQOPRLT	Equip. Operators, Light	19.02	0.0%	43.2%	10.71	0.00	37.94	HR	11/30/00	15.97	2007
MIL	B-EQOPRMED	Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	15.97	8394
MIL	B-EQOPROIL	Equip. Operators, Oilers	18.56	0.0%	43.2%	10.71	0.00	37.28	HR	11/30/00	15.97	2051
MIL	B-LABORER	Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	12.50	8074
MIL	B-PILEDRVR	Pile Drivers	26.49	0.0%	43.2%	5.69	0.00	43.61	HR	11/30/00	25.72	1113
MIL	B-TRKDVRHV	Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	11.56	29112
MIL	B-TRKDVRLT	Truck Drivers, Light	21.11	0.0%	43.2%	4.76	0.00	34.98	HR	11/30/00	9.51	67
FOP	FC-ENCGE	Geologist	19.89	0.0%	22.0%	2.89	0.00	27.16	HR	06/09/94	27.16	160
FOP	FC-ENGCI	Engineers, Civil	19.20	0.0%	22.0%	2.89	0.00	26.31	HR	06/09/94	26.31	960
FOP	FC-ENGQC	Engineers, Quality Control	19.89	0.0%	22.0%	2.89	0.00	27.16	HR	06/09/94	27.16	320
FOP	FC-FLABT	Field Constr.QC.\ Lab Technician	13.49	0.0%	22.0%	2.89	0.00	19.35	HR	06/09/94	19.35	320
FOP	FC-FLDER	Field Engineers	19.89	0.0%	22.0%	2.89	0.00	27.16	HR	06/09/94	27.16	320
RAD	FH-CIDEYG	Certified Industrial Hygienist	35.50	0.0%	35.0%	2.75	0.00	50.68	HR	06/09/94	50.68	352
RAD	FH-HEALTO	Site Safety & Health Officer	31.00	0.0%	35.0%	2.75	0.00	44.60	HR	06/09/94	44.60	448
MIL	X-EQOPRHVY	Outside Equip. Operators, Heavy	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	12128
MIL	X-EQOPRMED	Outside Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	21.21	1424
MIL	X-LABORER	Outside Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	9.72	37778
MIL	X-TRKDVRHV	Outside Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	19.23	528

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
		0. 5. Prime Contractor										
		01XXX. G. Rights of Entry/Temporary Permit										
		32XXX.10. Project Management										
		32XXX.20. Investigations (PRP)										
		32XXX.30. Remedial Design										
		32XXX.40. Remedial Action Contracting										
		331XX.01. Mobilize and Preparatory Work										
FOP	FC-ENCGE	Geologist	19.89	0.0%	22.0%	2.89	0.00	27.16	HR	06/09/94	27.16	160
FOP	FC-ENGCI	Engineers, Civil	19.20	0.0%	22.0%	2.89	0.00	26.31	HR	06/09/94	26.31	960
FOP	FC-ENGQC	Engineers, Quality Control	19.89	0.0%	22.0%	2.89	0.00	27.16	HR	06/09/94	27.16	320
RAD	FH-CIDEYG	Certified Industrial Hygienist	35.50	0.0%	35.0%	2.75	0.00	50.68	HR	06/09/94	50.68	352
RAD	FH-HEALTO	Site Safety & Health Officer	31.00	0.0%	35.0%	2.75	0.00	44.60	HR	06/09/94	44.60	448
MIL	X-EQOPRHVY	Outside Equip. Operators, Heavy	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	448
MIL	X-EQOPRMED	Outside Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	21.21	448
MIL	X-LABORER	Outside Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	9.72	896
MIL	X-TRKDVRHV	Outside Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	19.23	448
		331XX.02. Monitor'g,Samplng,Test &Analysis										
		331XX.03. Site Work										
MIL	B-EQOPRCRN	Equip. Operators, Crane/Shovel	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	721
MIL	B-EQOPRLT	Equip. Operators, Light	19.02	0.0%	43.2%	10.71	0.00	37.94	HR	11/30/00	15.97	1979
MIL	B-EQOPRMED	Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	15.97	3875
MIL	B-EQOPROIL	Equip. Operators, Oilers	18.56	0.0%	43.2%	10.71	0.00	37.28	HR	11/30/00	15.97	498
MIL	B-LABORER	Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	12.50	5684
MIL	B-PILEDRVR	Pile Drivers	26.49	0.0%	43.2%	5.69	0.00	43.61	HR	11/30/00	25.72	1113
MIL	B-TRKDVRHV	Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	11.56	20224
MIL	B-TRKDVRLT	Truck Drivers, Light	21.11	0.0%	43.2%	4.76	0.00	34.98	HR	11/30/00	9.51	67
MIL	X-LABORER	Outside Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	9.72	130
		331XX.05. Surface Water Collect & Control										
		331XX.08. Solids Collect and Containment										
MIL	B-EQOPRCRN	Equip. Operators, Crane/Shovel	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	1553
MIL	B-EQOPRMED	Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	15.97	4046
MIL	B-EQOPROIL	Equip. Operators, Oilers	18.56	0.0%	43.2%	10.71	0.00	37.28	HR	11/30/00	15.97	1553
MIL	B-LABORER	Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	12.50	1759
MIL	B-TRKDVRHV	Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	11.56	8701
		331XX.19. Disposal (Commercial)										
MIL	X-EQOPRHVY	Outside Equip. Operators, Heavy	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	11600
MIL	X-LABORER	Outside Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	9.72	34800
		331XX.20. Site Restoration										
MIL	B-EQOPRLT	Equip. Operators, Light	19.02	0.0%	43.2%	10.71	0.00	37.94	HR	11/30/00	15.97	28
MIL	B-EQOPRMED	Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	15.97	472
MIL	B-LABORER	Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	12.50	631
MIL	B-TRKDVRHV	Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	11.56	187
		331XX.21. Demobilization										
MIL	B-ELECTRN	Electricians	26.45	0.0%	43.2%	14.21	0.00	52.08	HR	11/30/00	27.92	0
MIL	B-EQOPRMED	Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	15.97	0
MIL	B-TRKDVRLT	Truck Drivers, Light	21.11	0.0%	43.2%	4.76	0.00	34.98	HR	11/30/00	9.51	0

** LABOR BACKUP - SYSTEM **

SRC	LABOR ID	DESCRIPTION	BASE	OVERTM	TXS/INS	FRNG	TRVL	RATE	UOM	UPDATE	**** TOTAL **** DEFAULT	HOURS
FOP	FC-FLABT	Field Constr.QC.\ Lab Technician	13.49	0.0%	22.0%	2.89	0.00	19.35	HR	06/09/94	19.35	320
FOP	FC-FLDER	Field Engineers	19.89	0.0%	22.0%	2.89	0.00	27.16	HR	06/09/94	27.16	320
MIL	X-EQOPRHVY	Outside Equip. Operators, Heavy	23.92	0.0%	43.2%	10.71	0.00	44.95	HR	11/30/00	23.41	80
MIL	X-EQOPRMED	Outside Equip. Operators, Medium	22.02	0.0%	43.2%	10.71	0.00	42.23	HR	11/30/00	21.21	976
MIL	X-LABORER	Outside Laborers, (Semi-Skilled)	22.01	0.0%	43.2%	6.35	0.00	37.86	HR	11/30/00	9.72	1952
MIL	X-TRKDVRHV	Outside Truck Drivers, Heavy	22.91	0.0%	43.2%	4.79	0.00	37.59	HR	11/30/00	19.23	80

332XX.01. Engineering During Construction
333XX.01. CONSTRUCTION MANAGEMENT (S&A)
34XXX.20. Operation, Maint. & Monitoring

** EQUIPMENT BACKUP **

SRC	ID.NO.	EQUIPMENT DESCRIPTION	DEPR	FCCM	FUEL	FOG	TR WR	TR REP	EQ REP	TOTAL RATE	** TOTAL ** HOURS
EP	A15SR005	AIR COMPR, 250 CFM, 100 PSI	1.54	0.46	2.87	0.96			1.73	7.55 HR	896
GEN	A25Z0580	ASPHALT DISTR, 3,000GAL (11355L)	5.52	1.21		1.80			7.05	15.58 HR	3
GEN	A30Z0640	ASPHALT PAVER, 10.0' (3.1M)W,SP	20.53	5.73	4.71	3.07	1.69	0.28	31.09	67.08 HR	35
GEN	C80Z2280	CRANE, HYD, TRUCK MTD, 65T	28.15	10.71	10.63	3.30	0.92	0.15	27.47	81.32 HR	276
EP	C85AM010	CR,ME,CWLR,LIFTING, 85T/160'BOOM	33.06	13.90	4.12	1.05			39.11	91.24 HR	160
GEN	C85Z2395	DRAGLINE/CLAMSHELL,CRWLR, 2.0CY	27.16	9.03	3.22	1.29			32.13	72.82 HR	223
EP	G15CA003	GRADER,MOTOR, ARTIC, CAT 12-H	10.60	4.34	3.99	1.60	0.47	0.08	11.82	32.89 HR	260
GEN	G15Z3080	GRADER, MOTOR, 135 HP (101KW)	9.66	3.96	3.85	1.54	0.47	0.08	10.78	30.33 HR	25
GEN	H10Z3120	HYD HAMMER, 1000FT-LBS (1356N-M)	2.64	0.45		1.00			3.88	7.97 HR	288
EP	H25CA023	HYD EXCAV, CRWLR, 45,320 LBS,	13.93	4.42	3.89	1.73			16.48	40.45 HR	0
GEN	H25Z3210	HYD EXCV, CRAWLER, 140,000LBS,	37.19	15.63	12.27	3.13			56.94	125.16 HR	1553
GEN	H25Z3680	BUCKET, PAVEMENT-REMOVAL, 36"	1.42	0.24					1.67	3.33 HR	288
GEN	L25Z4080	ROAD LINE STRIPER, 3-4 GUNS	3.13	0.76	2.17	1.60			5.88	13.54 HR	5
GEN	L35Z4240	LOADER, F/E, CRWLR, 1.50CY	8.93	1.96	2.98	1.32			17.65	32.84 HR	25
MAP	L40CA006	LDR,FE, WH, 4.50 CY, ARTIC, 966F	19.33	6.00	6.68	3.34	3.76	0.63	21.26	60.99 HR	1280
EP	L40CA017	LDR,FE, WH, 5.00 CY, ARTIC, 970F	18.28	5.87	7.59	2.70	3.14	0.52	17.61	55.71 HR	11600
GEN	L40Z4410	LOADER, F/E, WHEEL, 4.00CY	19.33	6.00	6.68	3.34	3.76	0.63	21.26	60.99 HR	288
EP	L50CA003	LDR,BH,WH, 1.38CY FE BKT, 30"DIP	6.08	1.84	2.70	1.02	0.46	0.08	7.60	19.78 HR	104
GEN	L50Z4640	LOADER/BCK-HOE,WH, 0.80CY(0.6M3)	3.73	1.17	1.82	0.69	0.72	0.12	4.70	12.96 HR	481
MAP	P30MK003	PILE HAMMER,VIB,107T FORCE DRIVE	16.44	3.74	9.87	3.72			29.69	63.45 HR	160
GEN	P30Z4920	PILE HAMMER,VIB, 80T (73MT)FORCE	16.02	3.64	9.87	3.72			28.93	62.18 HR	223
GEN	P55Z5200	PUMP, SUBM, 6" DIA, 1950GPM	1.15	0.34	2.54	1.35			1.08	6.46 HR	2035
GEN	R30Z5645	ROLLER, STATIC, 9 TIRES, SP,14T	5.95	1.34	2.43	0.67	0.34	0.06	6.06	16.84 HR	615
GEN	R45Z5690	ROLLER, VIB, DD, SP 12.0T	12.42	2.73	4.23	1.60			19.78	40.76 HR	76
MAP	R50DY002	ROLLER,VIB,SD,S/P,13.0T,66"W,PAD	8.89	1.97	4.15	1.57	0.18	0.03	12.89	29.67 HR	640
MAP	S15CA002	SCRAPER,SELF, 21-31CY, 37.5T, PS	30.52	12.69	12.83	4.84	8.33	1.39	27.96	98.56 HR	640
GEN	S15Z5980	SCRAPER, SP, 21-31CY (16-24M3)	30.52	12.69	12.83	4.84	8.33	1.39	27.96	98.56 HR	1759
MAP	T10CA013	BLADE, UNIVERSAL, HYDR, D-7	2.97	0.80		0.08			3.48	7.34 HR	87
MAP	T15CA010	DOZER,CWLR, D-6H PS,W/BLADE	13.23	3.91	5.46	2.31			24.80	49.71 HR	640
MAP	T15CA016	DOZER,CWLR, D-8R PS,W/BLADE	16.21	7.51	10.10	3.36			23.75	60.94 HR	640
GEN	T15Z6520	DOZER, CRAWLER, 181-250HP	15.42	7.15	7.95	2.65			22.59	55.76 HR	2784
GEN	T15Z6570	DOZER, CRAWLER, 300-340HP	19.06	8.83	10.60	3.53			27.92	69.94 HR	25
GEN	T15Z6600	DOZER, CRAWLER, 341-440HP	22.29	10.33	13.41	4.47			32.64	83.13 HR	2287
GEN	T40Z6860	REAR DUMP BODY, 16-23.5CY (12.2-	0.95	0.21					0.97	2.13 HR	26320
GEN	T40Z6960	TRK FLATBED, 8'X 12'(2.4MX 3.7M)	0.34	0.08					0.30	0.72 HR	62
GEN	T40Z7000	TRK FLATBED, 8'X 20'(2.4MX 6.1M)	0.49	0.11					0.43	1.03 HR	5
EP	T45XX015	TRLR,LOWBOY, 40T, 3 AXLE	2.58	0.92		0.50	0.58	0.10	2.22	6.88 HR	528
GEN	T45Z7280	TRAILER, WATER TANKER, 5000GAL	2.93	1.02	1.91	0.53	0.45	0.07	3.00	9.92 HR	45
EP	T50FO005	TRK,HWY,10,000GVW,4X2, 1T-PICKUP	1.96	0.45	2.28	0.76	0.46	0.08	2.00	7.97 HR	1424
EP	T50FO018	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	10.95	2.51	7.91	2.63	1.49	0.25	9.65	35.40 HR	528
MAP	T50GM001	TRK,HWY, 3,500GVW,4X2, COMPACT-P	1.19	0.26	1.53	0.51	0.14	0.02	1.20	4.86 HR	458
MAP	T50KE003	TRK,HWY, 50,000 GVW, 6X4, 3 AXLE	10.79	2.44	10.04	3.34	0.97	0.16	9.48	37.22 HR	104
GEN	T50Z7320	TRUCK, HWY 8,800 (3,992KG)GVW	1.93	0.43	2.28	0.76	0.34	0.06	1.96	7.75 HR	5
GEN	T50Z7400	TRUCK, HWY 25,000 (11,340KG)GVW	3.45	0.89	4.42	1.37	0.70	0.12	3.27	14.21 HR	67
GEN	T50Z7420	TRUCK, HWY 45,000 (20,412KG)GVW	10.79	2.44	10.04	3.34	0.97	0.16	9.48	37.22 HR	26320
GEN	T50Z7520	TRUCK, HWY 55,000 (24,948KG)GVW	10.07	2.28	10.04	3.34	0.97	0.16	8.85	35.72 HR	45
GEN	T50Z7580	TRUCK, HWY 45,000 (20,412KG)GVW	10.68	2.45	7.91	2.63	1.43	0.24	9.41	34.75 HR	3
MAP	T60KI002	TRK,WTR,OF-HY, 6000GAL,W/CAT621E	18.24	6.16	10.02	3.78	3.45	0.57	19.16	61.38 HR	640
GEN	T60Z7910	TRUCK, OFF-HWY, WATER, 5000GAL	10.15	3.42	5.31	2.01	1.82	0.30	10.66	33.67 HR	25
GEN	T60Z7920	TRUCK, OFF-HWY, WATER, 6000GAL	18.24	6.16	10.02	3.78	3.45	0.57	19.16	61.38 HR	2615
MAP	W25SD004	WATER BLASTR, HOT WTR, 3000 PSI	1.95	0.24	2.43	0.67	0.03	0.01	3.16	8.48 HR	896

** EQUIPMENT BACKUP **

SRC	ID.NO.	EQUIPMENT DESCRIPTION	DEPR	FCCM	FUEL	FOG	TR WR	TR REP	EQ REP	TOTAL RATE	** TOTAL ** HOURS
NON	XMIXX020	SMALL TOOLS	0.50	0.22	0.16	0.07			0.63	1.57 HR	896

SRC	ID.NO.	EQUIPMENT DESCRIPTION	DEPR	FCCM	FUEL	FOG	TR WR	TR REP	EQ REP	TOTAL RATE	** TOTAL ** HOURS
		0. 5. Prime Contractor									
		01XXX. G. Rights of Entry/Temporary Permit									
		32XXX.10. Project Management									
		32XXX.20. Investigations (PRP)									
		32XXX.30. Remedial Design									
		32XXX.40. Remedial Action Contracting									
		331XX.01. Mobilize and Preparatory Work									
EP	C85AM010	CR,ME,CWLR,LIFTING, 85T/160'BOOM	33.06	13.90	4.12	1.05			39.11	91.24 HR	80
MAP	L40CA006	LDR,FE, WH, 4.50 CY, ARTIC, 966F	19.33	6.00	6.68	3.34	3.76	0.63	21.26	60.99 HR	640
MAP	P30MK003	PILE HAMMER,VIB,107T FORCE DRIVE	16.44	3.74	9.87	3.72			29.69	63.45 HR	80
MAP	R50DY002	ROLLER,VIB,SD,S/P,13.0T,66"W,PAD	8.89	1.97	4.15	1.57	0.18	0.03	12.89	29.67 HR	320
MAP	T15CA010	DOZER,CWLR, D-6H PS,W/BLADE	13.23	3.91	5.46	2.31			24.80	49.71 HR	320
MAP	T15CA016	DOZER,CWLR, D-8R PS,W/BLADE	16.21	7.51	10.10	3.36			23.75	60.94 HR	320
EP	T45XX015	TRLR,LOWBOY, 40T, 3 AXLE	2.58	0.92		0.50	0.58	0.10	2.22	6.88 HR	448
EP	T50FO005	TRK,HWY,10,000GVW,4X2, 1T-PICKUP	1.96	0.45	2.28	0.76	0.46	0.08	2.00	7.97 HR	448
EP	T50FO018	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	10.95	2.51	7.91	2.63	1.49	0.25	9.65	35.40 HR	448
MAP	T60KI002	TRK,WTR,OF-HY, 6000GAL,W/CAT621E	18.24	6.16	10.02	3.78	3.45	0.57	19.16	61.38 HR	320
		331XX.02. Monitor'g,Samplng,Test &Analysis									
		331XX.03. Site Work									
GEN	A25Z0580	ASPHALT DISTR, 3,000GAL (11355L)	5.52	1.21		1.80			7.05	15.58 HR	3
GEN	A30Z0640	ASPHALT PAVER, 10.0' (3.1M)W,SP	20.53	5.73	4.71	3.07	1.69	0.28	31.09	67.08 HR	35
GEN	C80Z2280	CRANE, HYD, TRUCK MTD, 65T	28.15	10.71	10.63	3.30	0.92	0.15	27.47	81.32 HR	276
GEN	C85Z2395	DRAGLINE/CLAMSHELL,CRWLR, 2.0CY	27.16	9.03	3.22	1.29			32.13	72.82 HR	223
GEN	G15Z3080	GRADER, MOTOR, 135 HP (101KW)	9.66	3.96	3.85	1.54	0.47	0.08	10.78	30.33 HR	25
GEN	H10Z3120	HYD HAMMER, 1000FT-LBS (1356N-M)	2.64	0.45		1.00			3.88	7.97 HR	288
GEN	H25Z3680	BUCKET, PAVEMENT-REMOVAL, 36"	1.42	0.24					1.67	3.33 HR	288
GEN	L25Z4080	ROAD LINE STRIPER, 3-4 GUNS	3.13	0.76	2.17	1.60			5.88	13.54 HR	5
GEN	L35Z4240	LOADER, F/E, CRWLR, 1.50CY	8.93	1.96	2.98	1.32			17.65	32.84 HR	25
GEN	L40Z4410	LOADER, F/E, WHEEL, 4.00CY	19.33	6.00	6.68	3.34	3.76	0.63	21.26	60.99 HR	288
GEN	L50Z4640	LOADER/BCK-HOE,WH, 0.80CY(0.6M3)	3.73	1.17	1.82	0.69	0.72	0.12	4.70	12.96 HR	481
GEN	P30Z4920	PILE HAMMER,VIB, 80T (73MT)FORCE	16.02	3.64	9.87	3.72			28.93	62.18 HR	223
GEN	P55Z5200	PUMP, SUBM, 6" DIA, 1950GPM	1.15	0.34	2.54	1.35			1.08	6.46 HR	1997
GEN	R30Z5645	ROLLER, STATIC, 9 TIRES, SP,14T	5.95	1.34	2.43	0.67	0.34	0.06	6.06	16.84 HR	615
GEN	R45Z5690	ROLLER, VIB, DD, SP 12.0T	12.42	2.73	4.23	1.60			19.78	40.76 HR	76
GEN	T15Z6520	DOZER, CRAWLER, 181-250HP	15.42	7.15	7.95	2.65			22.59	55.76 HR	2784
GEN	T15Z6570	DOZER, CRAWLER, 300-340HP	19.06	8.83	10.60	3.53			27.92	69.94 HR	25
GEN	T40Z6860	REAR DUMP BODY, 16-23.5CY (12.2-	0.95	0.21					0.97	2.13 HR	17619
GEN	T40Z6960	TRK FLATBED, 8'X 12'(2.4MX 3.7M)	0.34	0.08					0.30	0.72 HR	62
GEN	T40Z7000	TRK FLATBED, 8'X 20'(2.4MX 6.1M)	0.49	0.11					0.43	1.03 HR	5
MAP	T50GM001	TRK,HWY, 3,500GVW,4X2, COMPACT-P	1.19	0.26	1.53	0.51	0.14	0.02	1.20	4.86 HR	458
GEN	T50Z7320	TRUCK, HWY 8,800 (3,992KG)GVW	1.93	0.43	2.28	0.76	0.34	0.06	1.96	7.75 HR	5
GEN	T50Z7400	TRUCK, HWY 25,000 (11,340KG)GVW	3.45	0.89	4.42	1.37	0.70	0.12	3.27	14.21 HR	67
GEN	T50Z7420	TRUCK, HWY 45,000 (20,412KG)GVW	10.79	2.44	10.04	3.34	0.97	0.16	9.48	37.22 HR	17619
GEN	T50Z7580	TRUCK, HWY 45,000 (20,412KG)GVW	10.68	2.45	7.91	2.63	1.43	0.24	9.41	34.75 HR	3
GEN	T60Z7910	TRUCK, OFF-HWY, WATER, 5000GAL	10.15	3.42	5.31	2.01	1.82	0.30	10.66	33.67 HR	25
GEN	T60Z7920	TRUCK, OFF-HWY, WATER, 6000GAL	18.24	6.16	10.02	3.78	3.45	0.57	19.16	61.38 HR	2577
		331XX.05. Surface Water Collect & Control									
		331XX.08. Solids Collect and Containment									
GEN	H25Z3210	HYD EXCV, CRAWLER, 140,000LBS,	37.19	15.63	12.27	3.13			56.94	125.16 HR	1553

** EQUIPMENT BACKUP - SYSTEM **

SRC	ID.NO.	EQUIPMENT DESCRIPTION	DEPR	FCCM	FUEL	FOG	TR WR	TR REP	EQ REP	TOTAL RATE	** TOTAL ** HOURS
GEN	S15Z5980	SCRAPER, SP, 21-31CY (16-24M3)	30.52	12.69	12.83	4.84	8.33	1.39	27.96	98.56 HR	1759
GEN	T15Z6600	DOZER, CRAWLER, 341-440HP	22.29	10.33	13.41	4.47			32.64	83.13 HR	2287
GEN	T40Z6860	REAR DUMP BODY, 16-23.5CY (12.2-	0.95	0.21					0.97	2.13 HR	8701
GEN	T50Z7420	TRUCK, HWY 45,000 (20,412KG)GVW	10.79	2.44	10.04	3.34	0.97	0.16	9.48	37.22 HR	8701
331XX.19. Disposal (Commercial)											
EP	L40CA017	LDR,FE, WH, 5.00 CY, ARTIC, 970F	18.28	5.87	7.59	2.70	3.14	0.52	17.61	55.71 HR	11600
331XX.20. Site Restoration											
EP	G15CA003	GRADER,MOTOR, ARTIC, CAT 12-H	10.60	4.34	3.99	1.60	0.47	0.08	11.82	32.89 HR	260
EP	L50CA003	LDR,BH,WH, 1.38CY FE BKT, 30"DIP	6.08	1.84	2.70	1.02	0.46	0.08	7.60	19.78 HR	104
GEN	P55Z5200	PUMP, SUBM, 6" DIA, 1950GPM	1.15	0.34	2.54	1.35			1.08	6.46 HR	38
MAP	T10CA013	BLADE, UNIVERSAL, HYDR, D-7	2.97	0.80		0.08			3.48	7.34 HR	87
GEN	T45Z7280	TRAILER, WATER TANKER, 5000GAL	2.93	1.02	1.91	0.53	0.45	0.07	3.00	9.92 HR	45
MAP	T50KE003	TRK,HWY, 50,000 GVW, 6X4, 3 AXLE	10.79	2.44	10.04	3.34	0.97	0.16	9.48	37.22 HR	104
GEN	T50Z7520	TRUCK, HWY 55,000 (24,948KG)GVW	10.07	2.28	10.04	3.34	0.97	0.16	8.85	35.72 HR	45
GEN	T60Z7920	TRUCK, OFF-HWY, WATER, 6000GAL	18.24	6.16	10.02	3.78	3.45	0.57	19.16	61.38 HR	38
331XX.21. Demobilization											
EP	A15SR005	AIR COMPR, 250 CFM, 100 PSI	1.54	0.46	2.87	0.96			1.73	7.55 HR	896
EP	C85AM010	CR,ME,CWLR,LIFTING, 85T/160'BOOM	33.06	13.90	4.12	1.05			39.11	91.24 HR	80
EP	H25CA023	HYD EXCAV, CRWLR, 45,320 LBS,	13.93	4.42	3.89	1.73			16.48	40.45 HR	0
MAP	L40CA006	LDR,FE, WH, 4.50 CY, ARTIC, 966F	19.33	6.00	6.68	3.34	3.76	0.63	21.26	60.99 HR	640
MAP	P30MK003	PILE HAMMER,VIB,107T FORCE DRIVE	16.44	3.74	9.87	3.72			29.69	63.45 HR	80
MAP	R50DY002	ROLLER,VIB,SD,S/P,13.0T,66"W,PAD	8.89	1.97	4.15	1.57	0.18	0.03	12.89	29.67 HR	320
MAP	S15CA002	SCRAPER,SELF, 21-31CY, 37.5T, PS	30.52	12.69	12.83	4.84	8.33	1.39	27.96	98.56 HR	640
MAP	T15CA010	DOZER,CWLR, D-6H PS,W/BLADE	13.23	3.91	5.46	2.31			24.80	49.71 HR	320
MAP	T15CA016	DOZER,CWLR, D-8R PS,W/BLADE	16.21	7.51	10.10	3.36			23.75	60.94 HR	320
EP	T45XX015	TRLR,LOWBOY, 40T, 3 AXLE	2.58	0.92		0.50	0.58	0.10	2.22	6.88 HR	80
EP	T50FO005	TRK,HWY,10,000GVW,4X2, 1T-PICKUP	1.96	0.45	2.28	0.76	0.46	0.08	2.00	7.97 HR	976
EP	T50FO018	TRK,HWY, 46,000 GVW, 6X4, 3 AXLE	10.95	2.51	7.91	2.63	1.49	0.25	9.65	35.40 HR	80
MAP	T50KE003	TRK,HWY, 50,000 GVW, 6X4, 3 AXLE	10.79	2.44	10.04	3.34	0.97	0.16	9.48	37.22 HR	0
MAP	T60KI002	TRK,WTR,OF-HY, 6000GAL,W/CAT621E	18.24	6.16	10.02	3.78	3.45	0.57	19.16	61.38 HR	320
MAP	W25SD004	WATER BLASTR, HOT WTR, 3000 PSI	1.95	0.24	2.43	0.67	0.03	0.01	3.16	8.48 HR	896
NON	XMIXX020	SMALL TOOLS	0.50	0.22	0.16	0.07			0.63	1.57 HR	896

332XX.01. Engineering During Construction
333XX.01. CONSTRUCTION MANAGEMENT (S&A)
34XXX.20. Operation, Maint. & Monitoring

Cost Assumption Summary for Alternative 5

Cost Code	Cost Components	Assumptions
3XXX	**TOTAL COST**	Includes Design Contingencies (5%) **plus** Escalation Cost (Mid point of Construction, 2003) (7.3%) **plus** Post Remedial Action Escalation Cost (25.6%) (March 2008) **plus** Construction Contingencies (15%)
01XXX	**Real Estate Analysis/Documents**	
01XXX.G	Rights of Entry/Temp Permits	Rights of Entry (ROE) = 279; Unit Cost = 500
01XXX.G.02	Damages	Rights of Entry (ROE) = 279; Unit Cost = 500
32XXX	**Project Management & Pre-Remedial Action**	
32XXX.10	Project Management	3% of HTRW Remedial Action (Construct)
32XXX.20	Investigation (PRP)	PRP = 1% of HTRW Remedial Action (Construct)
32XXX.30	Remedial Design	8% of HTRW Remedial Action (Construct)
32XXX.40	Remedial Action Contracting	1% of HTRW Remedial Action (Construct)
331XX	**HTRW Remedial Action (Construct)**	
331XX.01	***Mobilize and Preparatory Work***	8 contracts for mobilization (6 for SLAPS & 2 for HISS/Futura) No additional mobilization for SLAPS contract which is already in place 40 hrs/mobilization event (8 hrs operation & 32 hrs standby) Mobilization Crews = Truck w/lowboy, Mechanics truck, Pickup truck, Truck Driver, Mechanic, Operator, Laborer
331XX.01.01	*Mob Construction Equip & Facilities*	
331XX.01.01.05	Permits	Cost per contract is same ($500) for all 8 contracts
331XX.01.01.07	Construction Equipment	***Name*** / ***Quantity*** / ***Operating Cost ($/hr)*** / ***Standby Cost ($/hr)***
		Water Truck / 1 / 61.38 / 15.28
		Hyd Excav CRW / 1 / 134.41 / 36.79
		Roller / 1 / 29.67 / 6.41
		Dozer, 6H PS / 1 / 49.71 / 10.52
		Dozer, 8R PS / 1 / 60.94 / 15.62
		FE Loader / 2 / 60.99 / 15.67
		Lifting CWLR / 1 / 91.24 (2 hrs) / 30.43
		VI Pile Hammer / 1 / 63.45 / 11.95
		Lowboy TRLR / 1 / 6.88 (80 hrs) / 15.67
		HWY Truck / 1 / 35.40 (80 hrs) / 7.97(80 hrs)
		Equip. Operator / 1 / 44.95 (80 hrs) / 42.23(80 hrs)
		Truck Driver / 1 / 37.59 (80 hrs) /
		Outside laborers / 2 / 37.86(80 hrs) /
331XX.01.03	*Submittals/Implementation Plan*	One plan for each contract
331XX.01.03.04	Environmental Protection Plan	1 Civil Engineer / 320 hrs / $26.31/hr
		1 Certified Industrial Hygienist / 160 hrs / $50.67/hr
331XX.01.03.05	Sedimentation Control Plan	1 Civil Engineer / 320 hrs / $26.31/hr
		1 Geologist / 160 hrs / $27.16/hr
331XX.01.03.08	Site Safety and Health Plan	1 Site Safety & Health Officer / 448 hrs / $44.60/hr
		1 Certified Industrial Hygienist / 192 hrs / $50.67/hr
331XX.01.03.13	General Site Work Plan	1 Civil Engineer / 320 hrs / $26.31/hr
331XX.01.03.14	Quality Control Plan	1 Quality Control Engineer / 320 hrs / $27.16/hr
331XX.01.03.38	Permits	Unit Cost = $750/contract; Total Permit = 8
331XX.01.04	*Setup/ Construct Temp Facilities*	
331XX.01.04.01	Office Trailers (Contractor)	One setup/hookup for each contract ($1500) (Deliver & Setup)
331XX.01.04.02	Storage Facilities	2 storage areas (1office and I tool trailer for each area) for all

Cost Code	Cost Components	Assumptions		
		contracts; (Unit cost = $5000)		
331XX.01.04.10	Toilets	2 portable toilets for each contract ($100/toilet)		
331XX.01.04.11	Barricades	Lump sum cost of $1500 for each contract		
331XX.01.04.28	Signs	2 construction signs per contract ($345/Sign)		
331XX.01.05	*Construct Temporary Utilities*	Assume all utilities are presently in-place on site and only a temporary hookup fee will be charged for each utility.		
331XX.01.05.02	Power Connection/Distribution	$500 for each contract		
331XX.01.05.03	Telephone/Communication Dist.	$100 for each contract		
331XX.01.05.04	Water Connection/Distribution	$500 for each contract		
331XX.01.05.05	Sewer Connection/Distribution	$300 for each contract		
331XX.02	***Monitoring, Sampling, Test, Analysis***	Costs are based on historical data for previous fiscal years. Monitoring Period = 5 Years		
331XX.02.90	Environmental Monitoring	Environmental Monitoring cost for each year = $627,560.		
331XX.02.91	Additional Labor & Sampling	Lab Sampling Services = $48,000/yr Health Physics Technician Cost = $1,083,638/yr Radiological Instrument & Supply Cost = $207,905/yr		
331XX.03	***Site Work***	Includes stripping topsoil, excavation, backfill, compaction, fine grading, hauling spoil, importation of borrow material and topsoil. Excludes work involving contaminated or hazardous materials. No personal protection is required. Normal productivity.		
331XX.03.03	*Earthwork*	All required borrow will come from Ft. Bell Quarry. Over-Excavation factor = 20%; Material Swell factor = 25 % Soil Excavation Volume = 278,416 CY; and Borrow required = 348,020 CY		
331XX.03.03.03	Backfill	Spreading Borrow with Dozer Cost = $0.94/CY Total Backfill = 348,020 CY		
331XX.03.03.04	Borrow	$4.00/CY for borrow material; Amount of Borrow = 308,446 CYs		
331XX.03.03.05	Hauling	Unit Cost (HWY Haulers) = $3.85/CY (348,020 CY)		
331XX.03.03.08	Compaction	Unit Cost (Wheel Roller) = $0.33/CY; Unit Cost (Water) = $0.974/CY; Compaction Volume = 348,020 CY		
331XX.03.04	*Roads*	Replacing asphalt roads at SLAPS VPs. Replacement cross-section: 3" Wearing Coarse, 4" Binder Coarse, and 9" Base with Geotextile. Roads to be replaced based on the supplementary cleanup criteria (100 pCi/g Ra-226, 285 pCi/g Th-230, 1,775 pCi/g U-238) Pershall Rd. = 1,865 SY; Hazelwood Rd. = 1,417 SY Latty Rd = 1,186 SY; Frost Avenue = 1,475 SY McDonnell Blvd = 4,410 SY; Banshee Rd = 954 SY Total =		
331XX.03.04.01	Bituminous Surfacing	*Material*	*Amount*	*Unit Cost (Labor + Mat)*
		4" Binder course	2083 Tons	$31.9/Ton
		3" Wearing course	1562 Tons	$35.38/Ton
331XX.03.04.02	Prime Coat	Bituminous Surface Treatment	2604 gal	$1.18/gallon
331XX.03.04.05	Base Course	Crushed Stone	3720 Tons	$9.77/Ton
331XX.03.04.06	Geotextile Fabric	120 mil Thick, non-woven polypropylene	9300 SY	$2.13/Ton
331XX.03.04.11	Striping	Acrylic Waterborne	12210 LF	$0.19/LF
331XX.03.04.90	Pavement Removal	Removal of Asphalt Road	9300 SY	$8.66/ SY
331XX.03.04.91	Hauling of Pavement for Disposal	Swell factor = 30%. So, total hauling of Pavement = 3,100 CY		

Cost Code	Cost Components	Assumptions		
		* 1.3 = 4,030 CY. Cost = Haulers cost (3.85/CY) + Landfill tipping fee ($203.85/CY)		
331XX.03.04.92	Traffic Control	Duration of Traffic Control = 3 months or 520 hrs. Database crew only considers 25% actual work time Unit Cost = $10.74/hr		
331XX.03.90	*Railroads*	14 locations with 2900 linear feet of railroad track to be removed and reinstalled. Material price Includes 75% salvage on track and 50% reuse of the ballast.		
331XX.03.90.5	Railroad Track Removal	Unit cost = $ 31.45/LF		
331XX.03.90.10	Railroad Track Reinstallation	Unit Cost Prime Rail = $5.17/LF; Ballast & Crushed stone = $20.17/LF Miscellaneous Materials & Supplies = $5.00/LF		
331XX.03.91	Sheetpile Shoring	Two locations along McDonnell Blvd. Total Quantities = 18256 SF; Unit Cost = $8.18/SF		
331XX.03.92	*Additional Labor & Services*	5 years		
331XX.03.92.15	Backfill	*Job Description*	*Time*	*Unit cost*
		1 Engineering Manager	500 hrs	$52.09/hr
		1 Lead Engineer	1400 hrs	$46.23 /hr
		1 Engineer	1150 hrs	$34.05 /hr
		Surveying Services	5 years	$5000/yr
		Compaction Testing	5 years	$12,500/yr
331XX.03.93	Misc. Utility Resources	Assume 1 event/year for the 5-year project. Unit cost = $50,000/yr		
331XX.05.	**Surface Water Collect & Control**			
331XX.05.92.	*Additional Labor & Services*			
331XX.03.92.5	Water Management	*Job Description*	*Hours/year*	*Unit cost ($/hr)*
		1 Engineering Manager	100	52.09
		1 Engineer	330	34.05
		1 Lead Engineer	480	46.23
		1 Construction Engineer	1250	36.56
		1 Principal Engineer	200	69.65
		1 Support Engineer	1210	64
331XX.03.92.10	Water Treatment	*Job*	*Time*	*Unit cost*
		1 Engineering Manager	100 hrs/yr	$52.09/hr
		1 Lead Engineer	480 hrs/yr	$46.23/hr
		Consulting Services	5 years	$10,000/yr
		Testing & Analysis	5 years	$20,000/yr
		EDI-HP Tech	5 years	$14,758/yr
		Insitu Lining Sedimentation Basin Discharge Pipe	5 years	$20,000/yr
		Permit Coordinator	400 hrs/yr	$65/hr
		1 Chemical Engineer	1040 hrs/yr	$65/hr
		Resin Change Out	5 years	$128,500/yr
		Bag Filters	5 years	$1,000/yr
		Misc. PVC, Hose, Fittings	5 years	$12,000/yr
		Freeze Protection	5 years	$10,000/yr
331XX.08	***Solids Collect and Containment***	All excavated material is assumed to be disposed offsite. Excavated SLAPS material to be hauled to the rail spur by scrapers. Other excavated material will be loaded into trucks, hauled to		

Cost Code	Cost Components	Assumptions			
		the rail spur & stockpiled on loading pad for loading into rail cars. Over-Excavation factor = 20%; Swell factor = 25%. Excavated volume (Insitu) = 239,013 CY. Excavated volume (Exsitu) = 348,020 CY (Used for hauling, loading into rail cars, spreading & compaction of backfill). Production Rate: Level of protection to be Level D Modified. Efficiency Factor = 75%; HTRW Productivity factor = 82%			
331XX.08.01	*Contaminated Soil Collection*	Bulk excavation to be accomplished using scrapers and dozers (SLAPS) and all other material will be loaded directly into trucks and hauled to the rail spur for disposal. PPE is not considered for hauling.			
331XX.08.01.02	Excavation	*Equipment*	*Amount of Soil (CY)*	*Unit Cost ($/CY)*	
		Hydraulic Excavator (100 cy/hr)	155,274	2.07	
		Scraper (70 cy/hr)	123,142	2.82	
		Doze (70 cy/hr)	123,142	2.06	
331XX.08.01.03	Hauling	Hwy Haulers	348,020	1.92	
331XX.08.01.90	Additional Labor & Services	*Job Description*	*Time*	*Unit Cost*	
		1 Engineering Manager	100 hrs/yr	$52.09/hr	
		1 Lead Engineer	280 hrs/yr	$46.23/hr	
		1 Principle Engineer	330 hrs/yr	$34.05/hr	
		1 Field Engineer	2080 hrs/yr	$66/hr	
		1 Field Engineer	2080 hrs/yr	$66/hr	
		Surveying Services	5 yr	$70,000/yr	
		Geotech Services	5 yr	$20,500/yr	
331XX.19	*Disposal (Commercial)*	The contaminated material will be loaded into the gondola cars and shipped to Envirocare of Utah. Rail and gondola cars are available as required. Gondola capacity = 80 CY Total Ex Situ Quantity = 348,020 CY 6 rail cars will be loaded per day. Total rail cars = 4,820.			
331XX.19.21	*Transportation to Storage/Disposal Facility*	Includes equipment, materials, and labor for hauling, loading and unloading of solid wastes			
331XX.19.21.01	Loading of Solids	*Equipment/Laborer*	*Quantity*	*Total Hrs*	*Unit Cost ($/hr)*
		F.E Loaders	2	6543	55.71
		Heavy Eqp. Operators	2	6543	44.95
		Foreman	1.	6543	38.86
		Outside Laborer	5	6543	37.86
		Disposable Liner	48202	-	$450/unit
		Absorbent Material	4820	-	$20/unit
331XX.19.21.90	Transportation Costs	Rail Transportation = $6,850/car			
331XX.19.22	*Disposal Fees and Taxes*				
331XX.19.22.01	Landfill/Burial Grounds		*Quantity (CY)*	*Unit Cost ($/CY)*	
		Envirosafe – Bulk Soil	229,623	85	
		Envirosafe – Mixed Waste	10,494	123	
		Envirocare – Bulk Soil	97,469	97	
		Envirocare – Mixed Waste	10,464	484	

Cost Code	Cost Components	Assumptions	
331XX.19.90	Transportation and Disposal of Building Decont. Material	Unit Cost = $18.75/SF	
331XX.19.90.01	VP-1L (Wagner)	Amount of Remediated Roofing Material = 225,300 SF	
331XX.19.90.02	VP-2L (GIFREHC)	Amount of Remediated Roofing Material = 160,000 SF	
331XX.19.90.03	VP-3L	Amount of Remediated Roofing Material = 131,100 SF	
331XX.19.90.04	VP-4L	Amount of Remediated Roofing Material = 73,400 SF	
331XX.19.90.05	VP-5L	Amount of Remediated Roofing Material = 81,600 SF	
331XX.20	*Site Restoration*	SLAPS = 22.7 acres; HISS = 11 acres; VPs = 53 acres; North County (unrestricted) = 86.7 acres; 75% for restoration. Total acreages to be restored = 65 acres	
331XX.20.01	Earthwork	The entire site will be graded, fertilized and seeded. Miscellaneous landscaping/planting is also assumed for the site.	
331XX.20.01.07	Grading	*Equipment*	*Unit Cost ($/acres)*
		Fine grading	455.92
		Rough grading with Dozer	175.55
331XX.20.04	Revegetation and Planting	65 acres	
331XX.20.04.01	Seeding/Mulch/Fertilizer	*Equipment*	*Unit Cost ($/acres)*
		Spraying Fertilizer	100.55
		Mechanical Seeding	845.35
		Watering by Truck	58.88
331XX.20.04.02	Miscellaneous Landscaping	Landscaping Cost = $500/acres	
331XX.20.92	Site Cleanup	Site Debris Cleanup & Removal Cost = $346.24/acres	
331XX.21	***Demobilization***	Same assumptions and duration for Mobilization and Preparatory work will be used. Time for decontamination of equipment is considered part of demobilization time.	
331XX.21.01	*Removal of Temporary Facilities*	Includes demobilization & dismantling of office trailers, storage, and decontamination of facilities and other temporary facilities.	
331XX.21.01.01	Office Trailers (Contractor) only	Disconnect & Remove Cost = $750/Contact	
331XX.21.01.02	Storage Facilities	Will be removed completion of last contract. Removal Cost = $2500/each storage area	
331XX.21.01.05	Decontamination Facility For Construction Equipment	The decontamination facility will be removed after the completion of last contract. 25% of the original estimated cost for removal; Cost = $15000	
331XX.21.01.10	Toilets	2 toilets for each contract to be removed; Removal Cost = $100/unit	
331XX.21.01.11	Barricades	Total Barricades= 8; Unit Removal Cost = $1500	
331XX.21.01.28	Signs	Total Signs = 16: Unit Sign Removal Cost = $100	
331XX.21.02	*Removal of Temporary Utilities*	Dismantling & disconnection of project utilities during remedial action.	
331XX.21.02.02	Power Connection/Distribution	Disconnect/Contract Cost = $500	
331XX.21.02.03	Telephone/Communication Dist.	Disconnection Fee = $54.34/contract	
331XX.21.02.04	Water Connection/Distribution	Disconnection Fee = $500/contract	
331XX.21.02.05	Sewer Connection/Distribution	Disconnection Fee = $300/contract	
331XX.21.04	*Demobilization of Construction Equipment/Facilities*	It includes transportation, manifests, tolls, permits, escort vehicles, drivers, and equipment operators.	
331XX.21.04.05	Permits	Cost = $500/contract	

Cost Code	Cost Components	Assumptions		
331XX.21.04.07	Demobilization Of Construction Equipment	*Equipment/ Laborer*	*Operating Cost ($/hr) & Hours*	*Stand by Cost ($/hr) & Hours*
		Water Truck	61.38 (64 hrs)	15.28 (256 hrs)
		Excav CRW	134.41 (32 hrs)	36.79 (256 hrs)
		Roller	29.67 (64 hrs)	6.41 (256 hrs)
		Dozer, 6H PS	49.71 (64 hrs)	10.52 (256 hrs)
		Dozer, 8R PS	60.94 (64 hrs)	15.62 (256 hrs)
		Self Scrapper (2 of them)	98.56 (128 hrs)	27.94 (512 hrs)
		FE Loader (2 of them)	60.99 (128 hrs)	15.67 (512 hrs)
		Lifting CWLR	91.24 (16 hrs)	30.43/hr (64 hrs)
		VI Pile Hammer	63.45 (16 hrs)	11.95 (64 hrs)
		Lowboy TRLR	6.88 (80 hrs)	
		HWY Truck	35.40 (80 hrs)	7.97 (80 hrs)
		Outside Equip. Operator	44.95 (80 hrs)	
		Outside Equip. Operator	42.23 (80 hrs)	
		Outside Truck Driver	37.59 (80 hrs)	
		Outside laborers (2 of them)	37.86 (160 hrs)	
331XX.21.04.90	Decontamination Of Construction Equipment	All equipment (56) will be decontaminated and demobilized for each contract. 2 days per piece of equipment. Decontamination will be performed over the 5 years duration.		
		Equipments/Laborer	*Total Hrs*	*Unit Cost ($/hr)*
		Mechanics Truck	896	7.97
		Equipment Operators	896	42.23
		Outside Laborers (2)	2 * 896	37.86
		Small Tools	896	1.57
		Power Washer	896	8.48

Cost Code	Cost Components	Assumptions		
		Compressor 896 7.55		
331XX.21.06	*Submittals*	1 Engineer and 1 Technician will work 80 hrs/contract.		
331XX.21.06.03	Project Acceptance	40 hrs/contract for contract closeout with 8 contracts = total hrs = 320. Unit Cost (Engineer) = $27.16/hr; Unit Cost (Technician) = $19.35/hr		
332XX	**Engineering During Construction**			
332XX.01	Total Engineering During Construction	1% of HTRW Remedial Action (Construct)		
333XX	**Construction Management (S&A)**			
333XX.01	Construction Management (S&A)	6% of HTRW Remedial Action (Construct)		
34XXX	**Post Remedial Action**			
34XXX.20	***Operation, Maintenance & Monitoring***			
34XXX.20.01	*Final Status Surveys*	Cost includes walkover surveys, surveying in sample locations, sample collection, data analysis, preparation of reports, radiological analysis, QA/QC, metals analysis, on-site lab analysis and commercial lab analysis (Off-site)		
34XXX.20.01.5	North Country Properties	***Survey Type***	***# of Survey Units***	***Unit Cost ($/Survey)***
		Class 1 Survey	184	13,200
		Class 2 Survey	70	12,600
		Class 3 Survey	20	12,600
34XXX.20.01.10	Coldwater Creek	Class 1 Survey	20	13,200
		Class 2 Survey	124	12,600
		Class 3 Survey	140	12,600
34XXX.20.01.15	North County Buildings	Class 2 Survey	89	10,100
		Class 3 Survey	40	1,600
34XXX.20.01.20	Roads	Class 2 Survey	600	1,100
34XXX.20.02	*Monitoring, Sampling, Test, Analysis*	Monitoring cost includes cost associated with monitoring, sampling, testing, and maintenance. Cost will be broken down for different sites as follows: SLAPS = 40%; HISS/Futura = 40%; Latty Ave = 10%; SLAPS VPs = 5%; and Coldwater Creek = 5%. For Alternative 5, monitoring assumed only for SLAPS VPs (roads, railroads, and bridges). Total annual costs for monitoring ($548,896) are multiplied by 5% to yield $27,445/yr for 25 years or a total monitoring cost of $686,000		
34XXX.20.03	*Five-Year Review.*	Cost includes cost associated with land use assessment, monitoring, testing and analysis, evaluation and risk assessment. Number of 5-year Reviews = 5 Review time = 3 months (520 hrs) of 4 persons No per diem or travel Number, Types and Cost of Labor = 1 Senior Scientist ($94/hr) 1 Junior Engineer ($65/hr) Attorney ($110/hr) Clerical ($36/hr)		

Cost Code	Cost Components	Assumptions
34XXX.20.04	*Post Remedial Site Supervision*	Includes mowing, site maintenance, and routine inspection. Number, Types and Cost of Labor = 1 Site Supervisor Manager ($72/hr) Total Supervision time = 62,400 hrs (30 person years) Misc. equipments cost = $10,000/yr

ON-SITE DISPOSAL CELL ESTIMATE WORK SHEET

PROJECT: FUSRAP - North County Feasibility Study DATE: 29-Apr-2003

SUBJECT: Alternative 5 with On-site Disposal Cell Option FILE: NCFSPPAlt.xls

Account No.	ITEM	QUANTITY	UNIT	UNIT PRICE	ESTIMATED AMOUNT
01XXX	REAL ESTATE ANALYSIS/DOCUMENTS				
G	Rights of Entry/Temporary Permit				
G.01	Rights of Entry Acquisition	279	EA	500.00	139,500
G.02	Damages	279	EA	500.00	139,500
32XXX	PROJ. MANG. & PRE-REMEDIAL ACTION				
10	Project Management	1	LS		1,706,747
20	Investigation (PRP)	1	LS		568,916
30	Remedial Design	1	LS		4,551,324
40	Remedial Action Contracting	1	LS		568,916
331XX	HTRW REMEDIAL ACTION (CONSTRUCT)				
01	Mobilize and Preparatory Work	1	LS		416,000
02	Monitor'g, Sampling, Test & Analysis				
02.90	Environmental Monitoring	1	LS		4,146,000
02.91	Additional Labor & Services	1	LS		8,849,000
03	Site Work				
03.03	Earthwork	308,446	CY	15.30	4,726,000
03.04	Roads	11,307	SY	41.30	466,979
03.90	Railroads	2,900	LF	81.60	236,640
03.91	Sheetpile Shoring	18,300	SF	10.80	197,640
03.92	Additional Labor & Services	1	LS		657,000
03.93	Misc. Utility Relocations	1	LS		330,000
05	Surface Water Collect & Control				
05.92	Additional Labor & Services	1	LS		3,389,000
08	Solids Collect and Containment				
08.01	Contaminated Soil Collection	308,446	CY	16.30	5,027,670
19	Disposal (On-site)				
19.XX	Disposal Cell Cost	1	LS*		27,832,625
20	Site Restoration	1	LS		213,000
21	Demobilization	1	LS		404,000
34XXX	POST-REMEDIAL ACTION				
20	Operation, Maint. & Monitoring				
20.01	Final Status Surveys	1	LS		8,776,000
20.02	Monitoring	1	LS		15,369,000
20.03	Five Year Review	1	LS		793,000
20.04	Post Remedial Site Supervision	1	LS		4,773,000

SUBTOTAL:		$94,277,456
CONTINGENCIES: (in %)	25	$23,600,000
ESCALATION: (in %)	7.3	$6,880,000
SUBTOTAL:----------		$124,700,000
E.D.C. (in %)----------	1	$1,250,000
C.M. (in %)----------	6	$7,480,000
TOTAL COST		**$133,430,000**

*See follow-up sheet for further details for disposal cell costs.

Estimation of Onsite Disposal Cell Cost

Cost Code	Cost Components	Estimated Amount
3XXX	**TOTAL COST**	27,832,625
01XXX	**Real Estate Analysis/Documents**	3,110,000
G	Rights of Entry/Temporary Permit	10,000
G.01	Rights of Entry Acquisition	3,000,000
G.02	Damages	0
G.03	Property Study	100,000
331XX	**HTRW Remedial Action (Cell Construction/Waste Placement)**	24,722,625
331XX.01	***Mobilize and Preparatory Work***	52,000
331XX.01.01	*Mob Construction Equip & Fac*	29,875
331XX.01.03	*Submittals/Implementation Plan*	13,500
331XX.01.04	*Setup/Constuct Temp Facilities*	6,750
331XX.01.05	*Construct Temporary Utilities*	1,875
331XX.02	***Monitoring, Sampling, Test, Analysis***	4,399,700
331XX.03	**Site Work*	4,631,200
331XX.03.03	*Earthwork*	3,060,000
331XX.03.04	*Access Roads*	250,000
331XX.03.05	*Anchor Trench & Leachate Piping*	81,000
331XX.03.06	*Construction Water Treatment Plant*	150,000
331XX.03.07	*Site Fencing*	100,000
331XX.03.08	*Gates*	3,200
331XX.03.92	*Additional Labor & Services*	657,000
331XX.03.93	*Misc. Utility Resources*	330,000
331XX.04	***Support Facilities***	415,000
331XX.04.01	*Scales/Acceptance Station*	90,000
331XX.04.02	*Parking Lot Construction*	50,000
331XX.04.03	*Decontamination Pad*	10,000
331XX.04.04	*Temporary Soil Stockpile Area*	200,000
331XX.04.06	*Personnel Decon Facility*	15,000
331XX.04.07	*Equipment Storage & Maintenance Building*	50,000
331XX.05	***Surface Water Collect and Containment***	423,625
331XX.05.92	*Additional Labor & Service*	423,625
331XX.06	***Leachate Treatment Plant***	585,000
331XX.06.01	*Construction*	570,000
331XX.06.02	*Effluent Permit*	15,000
331XX.07	***Cell Construction***	13,985,600
331XX.07.01	*'Excavation & Stockpiling of Impacted Soil within Cell Construction Footprint*	600,000
331XX.07.02	*Disposal Cell Construction*	3,589,600
331XX.07.03	*Additional Labor & Service*	6,088,000
331XX.08.02	*Placement of Impacted Soil in Cell*	3,708,000
331XX.20	***Site Restoration***	180,000
331XX.20.01	*Earthwork*	75,000
331XX.20.04	*Revegetation & Planting*	75,000
331XX.20.92	*Site Cleanup*	30,000
331XX.21	***Demobilization***	50,500
331XX.21.01	*Removal of Temporary Facilities*	6,750
331XX.21.02	*Removal of Temporary Utilities*	1,750
331XX.21.04	*Demob of Contrustion Equip/Fac*	39,500
331XX.21.06	*Submittals*	2,500

In Situ Volumes (yd3) for North County FS

Totals for Various Catagories and for Each Alternative at Bottom

		SOR>1 3D Modeled In Situ Volumes (yd3)								
		5/15(Ra226) 14/15(Th230) 50(U238)			25(Ra226) 70(Th230) 250(U238)			Contingency for Inaccessible Areas		
Property ID	Category	0-6 in	below 6 in	total	0-6 in	below 6 in	total	0-6 in	below 6 in	total
Coldwater Creek:East of VP-09©	Coldwater Creek	0	0	0	0	0	0	0	0	0
Coldwater Creek:Northwest of IA-09	Coldwater Creek	19	36	55	0	0	0	0	0	0
Coldwater Creek:West of IA-01	Coldwater Creek	44	419	462	7	34	42	0	0	0
VP-01(C): (09K120040	Coldwater Creek VPs	148	314	461	0	0	0	0	0	0
VP-02(C) (09K120040):East	Coldwater Creek VPs	3	1	5	0	0	0	0	0	0
VP-02(C) (09K120040):West	Coldwater Creek VPs	0	0	0	0	0	0	0	0	0
VP-03(C) :09K120040	Coldwater Creek VPs	155	368	524	0	0	0	0	0	0
VP-04(C):09K120127 East	Coldwater Creek VPs	0	0	0	0	0	0	0	0	0
VP-04(C):09K120127South	Coldwater Creek VPs	20	11	31	0	0	0	0	0	0
VP-04(C):09K120127 West	Coldwater Creek VPs	1	0	1	0	0	0	0	0	0
VP-05(C):09K120116	Coldwater Creek VPs	41	24	65	0	0	0	0	0	0
VP-06(C): 10K440104	Coldwater Creek VPs	0	0	0	0	0	0	0	0	0
VP-07(C): 10K440113	Coldwater Creek VPs	0	0	0	0	0	0	0	0	0
VP-08(C): 10K440074	Coldwater Creek VPs	91	1,200	1,291	0	0	0	0	0	0
VP-09(C): 10K420010	Coldwater Creek VPs	0	0	0	0	0	0	0	0	0
VP-10(C)	Coldwater Creek VPs	0	0	0	0	0	0	0	0	0
Futura:Accessible	HISS/Futura Subsurface	2,502	32,434	34,936	1,422	11,364	12,787	0	0	0
HISS Property	HISS/Futura Subsurface	3,946	16,925	20,872	1,493	5,465	6,958	0	0	0
VP-40A:RR	Latty RR	335	2,188	2,523	20	38	58	0	0	0
Parcel:10K530087	Latty VPs	406	2,038	2,444	113	391	504	0	0	0
VP-01(L): 10K530098	Latty VPs	132	60	192	10	2	12	0	0	0
VP-02(L):	Latty VPs	3,058	4,276	7,334	826	732	1,559	0	0	0
VP-03(L): 10K520022	Latty VPs	40	111	150	6	9	15	0	0	0
VP-04(L): 10K520044	Latty VPs	8	70	77	0	0	0	0	0	0
VP-05(L): 10K520033	Latty VPs	0	0	0	0	0	0	0	0	0
VP-06(L): 10K510067	Latty VPs	8	2	9	0	0	0	0	0	0
VP-40A Area (10L340041):North of VP-4	Latty VPs	0	0	0	0	0	0	0	0	0
VP-40A (10L340041):East	Latty VPs	4,534	26,816	31,350	1,180	4,538	5,718	0	0	0
VP-40A (10L340041):West(a)	Latty VPs	0	0	0	0	0	0	0	0	0
VP-40A (10L340041):West(b)	Latty VPs	167	26	193	0	0	0	0	0	0
IA-01	SLAPS	230	3,375	3,605	198	2,062	2,260	0	0	0
IA-02	SLAPS	640	11,710	12,350	536	4,715	5,252	0	0	0
IA-03	SLAPS	1,280	26,718	27,997	1,138	18,413	19,551	0	0	0
IA-04	SLAPS	0	0	0	0	0	0	0	0	0
IA-05	SLAPS	3,385	39,213	42,598	3,275	25,160	28,435	0	0	0
IA-06	SLAPS	600	7,118	7,718	176	949	1,124	0	0	0
IA-07	SLAPS	132	872	1,004	117	364	481	0	0	0
IA-08:North Ditch	SLAPS	724	4,149	4,873	180	1,397	1,577	0	0	0
IA-09:North Ditch	SLAPS	342	2,131	2,473	48	674	723	0	0	0
Ballfields:North of IA-09	SLAPS VPs	1	0	1	0	0	0	0	0	0
Coldwater Cr. Area:North of McDonnell	SLAPS VPs	66	83	150	1	0	1	0	0	0
IA-08:South Ditch	SLAPS VPs	251	3,627	3,877	92	556	649	0	0	0
IA-09:Ballfields	SLAPS VPs	2,366	15,222	17,588	396	5,292	5,687	0	0	0
IA-13:Airport Auth	SLAPS VPs	224	272	496	0	0	0	0	0	0
Norfolk Southern:East of Railroad(a)	SLAPS VPs	0	0	0	0	0	0	0	0	0
Norfolk Southern:East of Railroad(b)	SLAPS VPs	0	0	0	0	0	0	0	0	0
Norfolk Southern:South of Railroad	SLAPS VPs	0	0	0	0	0	0	0	0	0
Norfolk Southern:West of Railroad	SLAPS VPs	16	6	21	0	0	0	0	0	0
Parcel:10K130014	SLAPS VPs	16	10	26	0	0	0	0	0	0
Parcel:10K330421	SLAPS VPs	2	0	2	0	0	0	0	0	0
Pershall Rd:South Ditch	SLAPS VPs	404	953	1,357	57	26	84	0	0	0
VP-01: 10L220893	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-02: 10L240093	SLAPS VPs	1	0	1	0	0	0	0	0	0
VP-03:	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-04:	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-05	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-06: 10L330040	SLAPS VPs	1	0	1	0	0	0	0	0	0
VP-07: 10L330031	SLAPS VPs	3	1	4	0	0	0	0	0	0
VP-08: 10L330022	SLAPS VPs	35	14	49	0	0	0	0	0	0
VP-09: 10L330073	SLAPS VPs	43	32	75	3	0	3	0	0	0
VP-10	SLAPS VPs	69	38	107	60	36	96	0	0	0
VP-11: 10L340151	SLAPS VPs	1	0	1	0	0	0	0	0	0
VP-12: 10L340142	SLAPS VPs	296	359	655	111	70	181	0	0	0
VP-13: 10L310011	SLAPS VPs	262	417	679	37	32	69	0	0	0
VP-14: 11K510035	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-15: 11K520056	SLAPS VPs	49	55	104	0	0	0	0	0	0
VP-16	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-17: 10K210053	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-18: 10K230051	SLAPS VPs	19	70	90	0	0	0	0	0	0
VP-19: 10K230031	SLAPS VPs	0	0	0	0	0	0	0	0	0

		SOR>1 3D Modeled In Situ Volumes (yd3)								
		5/15(Ra226) 14/15(Th230) 50(U238)			25(Ra226) 70(Th230) 250(U238)			Contingency for Inaccessible Areas		
Property ID	Category	0-6 in	below 6 in	total	0-6 in	below 6 in	total	0-6 in	below 6 in	total
VP-20: 10K230040	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-21: 10K230073	SLAPS VPs	20	7	26	1	0	1	0	0	0
VP-22: 10K240106	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-23: 10K240094	SLAPS VPs	53	38	92	3	1	4	0	0	0
VP-24: 10K330232	SLAPS VPs	184	48	231	0	0	0	0	0	0
VP-25	SLAPS VPs	1	0	1	0	0	0	0	0	0
VP-25 Area: West of VP-25	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-26: 10K240207	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-27: 10K330030	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-28: 10K330351	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-29: 10K330223	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-30: 10K330232	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-31	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-31A: 10K330250	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-32: 10K330241	SLAPS VPs	62	189	251	0	0	0	0	0	0
VP-33: 10K330342	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-34: 10K330324	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-35: 10K610178	SLAPS VPs	16	4	19	0	0	0	0	0	0
VP-35A	SLAPS VPs	24	15	39	0	0	0	0	0	0
VP-36: 10K610189	SLAPS VPs	10	0	10	0	0	0	0	0	0
VP-37: 10K520066	SLAPS VPs	38	35	73	6	1	7	0	0	0
VP-38: 10K540097	SLAPS VPs	84	166	250	1	0	1	0	0	0
VP-39: 10K630363	SLAPS VPs	31	2	33	0	0	0	0	0	0
VP-40: 09K220140	SLAPS VPs	6	0	6	0	0	0	0	0	0
VP-41: 10K540031	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-42: 09K220041	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-43: 10K540075	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-44: 09K220030	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-45	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-46: 09K220074	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-47: 09K220085	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-48	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-48A	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-49	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-50	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-51	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-52	SLAPS VPs	1	0	1	0	0	0	0	0	0
VP-53	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-54	SLAPS VPs	1	0	1	0	0	0	0	0	0
VP-55	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-56	SLAPS VPs	19	361	380	1	0	1	0	0	0
VP-57: 09K140026	SLAPS VPs	26	144	170	0	0	0	0	0	0
VP-58: 09K140015	SLAPS VPs	214	765	980	21	60	81	0	0	0
VP-59	SLAPS VPs	5	19	24	0	0	0	0	0	0
VP-60: 09K130104	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-61	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-62: 09K130038	SLAPS VPs	0	0	0	0	0	0	0	0	0
VP-63: 10K430042	SLAPS VPs	0	0	0	0	0	0	0	0	0
Futura:Inaccess. 1	Under Futura buildings	145	100	245	0	0	0	0	0	0
Futura:Inaccess. 2	Under Futura buildings	534	12,517	13,051	521	6,866	7,387	89	2,256	2,346
Futura:Inaccess. 3	Under Futura buildings	564	2,522	3,085	246	151	397	6	12	18
Latty Ave	Under Latty Road	475	462	936	9	9	19	0	0	0
Latty Ave:East of Hazelwood	Under Latty Road	11	3	14	0	0	0	0	0	0
Byassee Road	Under SLAPS VP Roads	5	2	7	0	0	0	0	0	0
Eva Rd	Under SLAPS VP Roads	187	80	267	7	1	8	0	0	0
Frost Ave	Under SLAPS VP Roads	275	347	622	25	8	33	0	0	0
Hazelwood Ave	Under SLAPS VP Roads	740	1,162	1,902	149	180	328	65	16	80
IA-08:McDonnell Blvd	Under SLAPS VP Roads	1,633	13,165	14,798	664	2,627	3,291	145	284	429
IA-13:Banshee Road	Under SLAPS VP Roads	255	1,005	1,260	5	4	9	0	0	0
McDonnell Blvd:East Section(a)	Under SLAPS VP Roads	138	515	654	4	5	9	0	0	0
McDonnell Blvd:East Section(b)	Under SLAPS VP Roads	452	495	947	52	40	92	5	1	6
McDonnell Blvd:West Section	Under SLAPS VP Roads	995	6,982	7,977	273	1,033	1,306	42	67	109
Parcel:Road South of 09K210	Under SLAPS VP Roads	0	0	0	0	0	0	0	0	0
Pershall Rd:Inaccessible	Under SLAPS VP Roads	1,231	2,727	3,958	426	532	959	68	26	95
Road Row	Under SLAPS VP Roads	13	12	25	0	0	0	0	0	0
VP-55 Area:Area East of VP-55	Under SLAPS VP Roads	0	0	0	0	0	0	0	0	0
VP-56 Area:Road South of VP-56	Under SLAPS VP Roads	0	0	0	0	0	0	0	0	0
VP-59 Area:Road South of VP-59	Under SLAPS VP Roads	0	0	0	0	0	0	0	0	0
IA-12	Under SLAPS VP RR	2,912	11,928	14,839	834	2,686	3,520	80	272	351
Norfolk Southern:RR	Under SLAPS VP RR	666	1,348	2,014	78	195	273	1	0	1
VP-02(C):RR	Under SLAPS VP RR	3	1	4	0	0	0	0	0	0
VP-04(C):RR	Under SLAPS VP RR	9	6	15	0	0	0	0	0	0

		SOR>1 3D Modeled In Situ Volumes (yd3)								
		5/15(Ra226) 14/15(Th230) 50(U238)			25(Ra226) 70(Th230) 250(U238)			Contingency for Inaccessible Areas		
Property ID	Category	0-6 in	below 6 in	total	0-6 in	below 6 in	total	0-6 in	below 6 in	total
VP-07(C):RR	Under SLAPS VP RR	0	0	0	0	0	0	0	0	0
Parcel:09K110018	none	0	0	0	0	0	0	0	0	0
Parcel:09K110348	none	0	0	0	0	0	0	0	0	0
Parcel:09K110382	none	0	0	0	0	0	0	0	0	0
Parcel:09K110425	none	0	0	0	0	0	0	0	0	0
Parcel:09K120062	none	0	0	0	0	0	0	0	0	0
Parcel:09K120138	none	0	0	0	0	0	0	0	0	0
Parcel:09K130104a	none	0	0	0	0	0	0	0	0	0
Parcel:09K130104b	none	0	0	0	0	0	0	0	0	0
Parcel:09K210042	none	0	0	0	0	0	0	0	0	0
Parcel:09K210075	none	0	0	0	0	0	0	0	0	0
Parcel:09K210130	none	0	0	0	0	0	0	0	0	0
Parcel:09K210141	none	0	0	0	0	0	0	0	0	0
Parcel:09K210152	none	0	0	0	0	0	0	0	0	0
Parcel:09K210185	none	0	0	0	0	0	0	0	0	0
Parcel:09K210196	none	0	0	0	0	0	0	0	0	0
Parcel:10K140042	none	0	0	0	0	0	0	0	0	0
Parcel:10K240182	none	0	0	0	0	0	0	0	0	0
Parcel:10K240193	none	0	0	0	0	0	0	0	0	0
Parcel:10K410099	none	0	0	0	0	0	0	0	0	0
Parcel:10K440122	none	0	0	0	0	0	0	0	0	0
Parcel:10K510078	none	0	0	0	0	0	0	0	0	0
Parcel:10K520165	none	0	0	0	0	0	0	0	0	0
Parcel:10K530065	none	0	0	0	0	0	0	0	0	0
Parcel:10K530076	none	0	0	0	0	0	0	0	0	0
Parcel:10L340133	none	0	0	0	0	0	0	0	0	0
	total	39,151	260,935	300,087	14,831	96,719	111,551	501	2,934	3,435
	Coldwater Creek	62	455	517	7	34	42			
	Coldwater Creek VPs	458	1,919	2,377	0	0	0			
	HISS/Futura Subsurface	6,449	49,359	55,808	2,915	16,829	19,745			
	Latty RR	335	2,188	2,523	20	38	58	0	0	0
	Latty VPs	8,352	33,399	41,751	2,135	5,672	7,807			
	SLAPS	7,331	95,287	102,618	5,669	53,734	59,403			
	SLAPS VPs	4,920	22,951	27,871	792	6,073	6,865			
	Under Futura buildings	1,242	15,139	16,381	767	7,017	7,784	95	2,268	2,364
	Under Latty Road	486	465	950	9	9	19	0	0	0
	Under SLAPS VP Roads	5,925	26,492	32,416	1,604	4,430	6,035	325	394	718
	Under SLAPS VP RR	3,591	13,282	16,873	911	2,882	3,793	81	272	353
	total	39,150	260,935	300,086	14,831	96,719	111,551	501	2,934	3,435

Notes:

1) Volumes based upon models developed from 9/9/2002 database report, with the exception of PDI models.

2) Volumes include overburden requiring removal to access subsurface areas that exceed criteria.

3) Volumes do not include areas that have been remediated or that will be remediated by June 30, 2003

VOLUMES UNDER EACH ALTERNATIVE

Area	Alt 1	Alt 2[a]	Alt 3[b]	Alt 4	Alt 5[c]	Alt 6[d]
Coldwater Creek	0	0	466	0	517	517
Coldwater Creek VPs	0	2,377	2,377	0	2,377	2,377
HISS/Futura Subsurface	0	19,745	55,808	0	55,808	55,808
Latty RR	0	0	0	0	0	2,523
Latty VPs	0	41,751	41,751	0	41,751	41,751
SLAPS	0	59,403	59,403	0	102,618	102,618
SLAPS VPs	0	27,871	27,871	0	27,871	27,871
Under Futura buildings	0	2,364	2,364	0	0	16,381
Under Latty Road	0	0	0	0	0	950
Under SLAPS VP Roads	0	718	718	0	718	32,416
Under SLAPS VP RR	0	353	353	0	353	16,873
Total Insitu Volume	0	154,582	191,111	0	232,013	300,086
20% Over-excavation	0	185,498	229,333	0	278,416	360,103
25% Swell	0	231,873	286,666	0	348,020	450,128

Volumes for each alternative are based on the following assumptions:

[a] Volumes for Alternative 2 use 5/15, 14/15, 50/50 criteria for all VPs. The volumes for HISS/Futura subsurface and SLAPS use the 25/70/250 criteria
Under Alternative 2, CWC Sediments are not addressed

[b] Volumes for Alternative 3 use 5/15, 14/15, 50/50 criteria for all VPs, and use 25/70/250 criteria for SLAPS and HISS/Futura.
Under Alternative 3, the volume for CWC assumes that 10% will be addressed by phytoremediation (i.e, 90% of 5/15, 14/15, 50/50 CWC volumes were used)

c Volumes for Alternative 5 use the 5/15, 14/15, 50/50 criteria for all areas except roads, bridges, and railroads
and beneath the Futura Building, where it is assumed no remediation will occur until the soils become accessible.

d Volumes for Alternative 6 use the 5/15, 14/15, 50/50 criteria for all areas

As a contingency, an estimate of the volume of inaccessible soils (soils beneath roads, bridges, railroads, and under the Futura buildings) is included

APPENDIX D

DOSE AND RISK ANALYSIS

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D.0 INTRODUCTION

Potential health impacts from exposure to chemical contamination are assessed in support of the Feasibility Study (FS) for the Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis North County Site (North County Site). The potential health impacts include radiological dose, carcinogenic risk, and non-carcinogenic toxicity. This assessment includes both radionuclide and non-radiological constituents in an evaluation of baseline conditions that supplements the site Baseline Risk Assessment (BRA) (DOE, 1993). The supplemental evaluation is necessary because significant additional chemical data have been collected and because conditions have changed since the original BRA was issued. Nevertheless, the basic conclusion of the BRA is unchanged, i.e. there is a need for cleanup action at the site. Contaminants of potential concern (COPCs) are identified and site-specific remediation goals (RGs) are calculated in this evaluation (RGs are not presented in the BRA). A subset of the COPCs is also identified as contaminants of concern (COCs) for use in the FS. The COC subset is selected based on known links to FUSRAP-related activities. Site-specific RGs are used in Section 5 of the FS to semi-quantitatively evaluate health impacts from exposure to COCs under Alternatives 1 through 6. The assessment approach, including the evaluation of baseline conditions, is consistent with the approach outlined in the *Potential Contaminants of Concern Assessment Memorandum* (PAM) (USACE, 1999b). The PAM uses the latest risk assessment guidance from the U.S. Environmental Protection Agency (EPA), including updated cancer slope factors (CSFs) and exposure parameters.

This assessment evaluates risk from exposure to both radionuclides and non-radionuclides. Note that a CSF for a radionuclide is defined differently than a CSF for a non-radionuclide. EPA outlines these differences in EPA 1996a, some of which include the following:

- Radiological risk estimates are based primarily on human data – chemical risk estimates are based primarily on animal studies; and

- Radiological risk estimates are based on the central estimate of the mean – chemical risk estimates are based on the 95% upper confidence limit (UCL_{95}) of the mean.

Given these differences, incremental lifetime cancer risks (ILCRs) from radionuclides and non-radionuclides are assessed and presented separately. The addition of their risks was evaluated even though this action is not recommended. In addition, natural background radiation is already present at levels exceeding typical risk targets, and natural variability in these background levels may preclude the ability to quantify small incremental risks due to contamination (EPA, 1996a). Therefore, radiological risk calculations will use exposure concentrations representing specific activity above background.

D.1 SUMMARY OF BASELINE RISK

Baseline risks from exposure to site chemicals are evaluated using *Risk Assessment Guidance for Superfund Volume I, Human Health Evaluation Manual (Part A)* (RAGS, Part A) (EPA, 1989). The purpose of this evaluation is to identify COCs and to provide site-specific RGs for consideration by site planners. An evaluation (subsequent to the one provided in the BRA) is considered necessary because significant additional chemical data have been collected, site conditions have changed since the original BRA was issued, and the BRA does not provide RGs. For radionuclides, RESRAD Version 5.82 is used instead of standard RAGS equations to estimate potential health impacts. The RESRAD code uses methods similar to RAGS Part A, using Health Effects Assessment Summary Table (HEAST) slope factors to estimate carcinogenic risk and Federal Guidance Reports 11 and 12 to estimate radiological dose. A comparison of RESRAD versus strict RAGS Part A approaches is discussed in more detail in Section D.1.3.1.

The standard procedure for identifying COCs as outlined in RAGS Part A is to first identify potential chemicals of concern (PCOCs) based on background, risk, and weight of evidence screens. For any PCOCs identified, the next step is to perform site-specific risk calculations. If the total risk for a specified receptor and medium exceeds 10^{-4}, those carcinogenic chemicals with a risk greater than 10^{-6} are identified as COPCs. If the total hazard index (HI) for a specified receptor (e.g., resident) and medium (e.g., soil) exceeds 1.0, those noncarcinogenic chemicals with a hazard quotient (HQ) greater than 0.1 are also identified as COPCs. COCs are then identified as those COPCs which may be reasonably associated with uranium processing activities. Assuming COCs are identified, site-specific RGs are presented for the point of departure (i.e., 10^{-6}) or for a HQ of 0.1, as appropriate, and based on applicable or relevant and appropriate requirements (ARARs). Risk-based RGs are site-specific preliminary remediation goals (PRGs), which are modified versions of the generic PRGs used by EPA. Slight modifications to the standard procedure are required when addressing radiological contaminants in the North County Site properties. Figure D-1 illustrates how COCs are identified at the North County Site.

For North County properties, the likely PCOCs include radionuclides from the naturally occurring uranium, thorium, and actinium decay series. Because the availability of risk-based screening values for radionuclides is limited, and because background concentrations of some of these radionuclides produce a risk on the order of 10^{-4}, a risk screen is not performed to identify PCOCs. Instead, a site-wide background screen is performed, comparing site radiological data to an upper tolerance limit on the background distribution. All COPCs are identified from the subset of PCOCs using site-specific risk modeling. If a COPC is site-related, it is considered a COC. RGs are presented for all COCs.

Five exposure scenarios are considered in the evaluation of baseline risk including a site resident, an industrial worker, a maintenance worker, a recreational receptor/trespasser, and a construction/utility worker. The North County Site properties vary in both size and projected future land use. For this screening assessment, however, standard default values were used for the size and configuration.

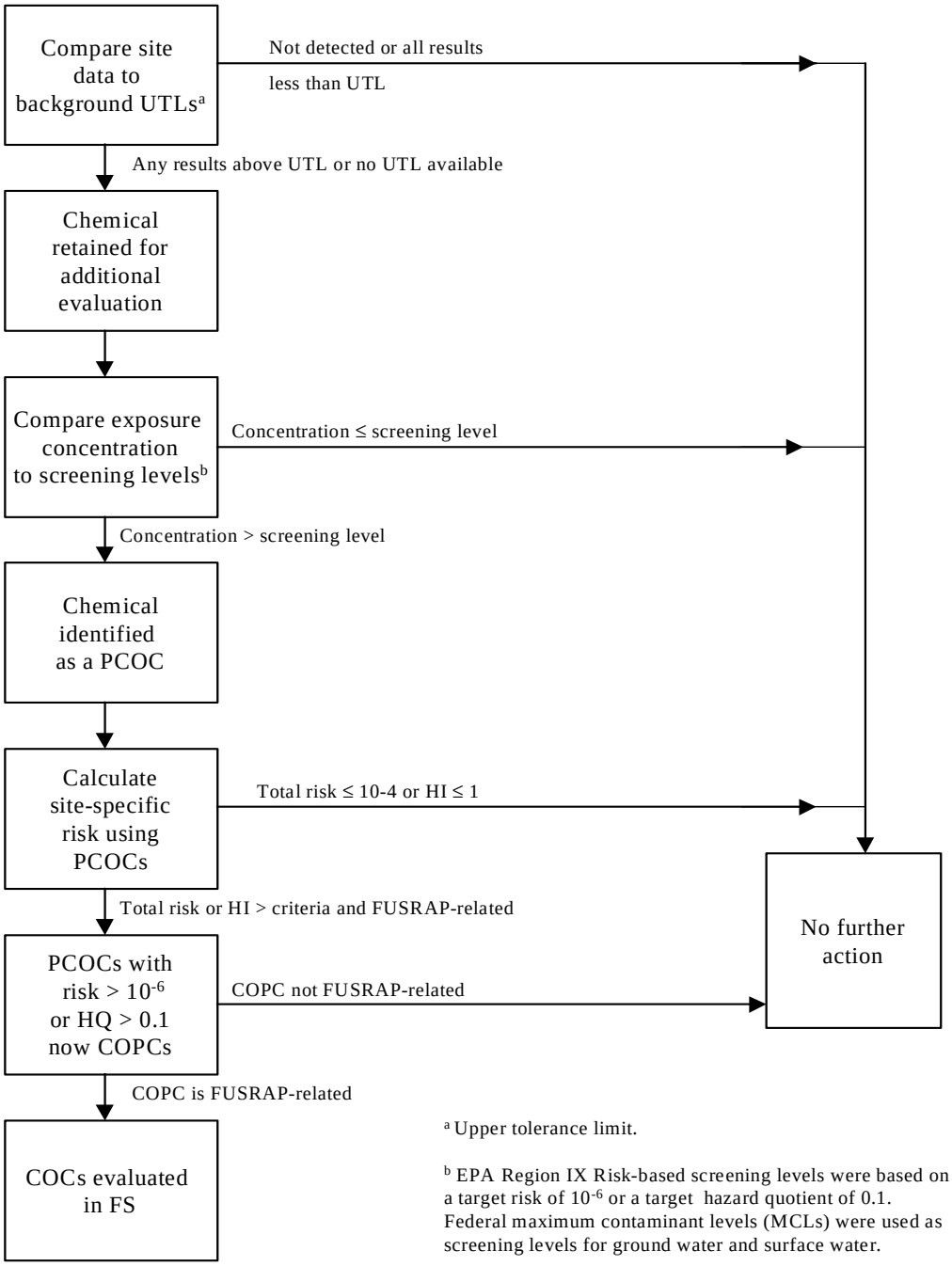

Figure D-1. Developing Contaminants of Concern

D.1.1 SELECTION OF CONTAMINANTS OF CONCERN

The site database contains radionuclide and non-radionuclide data that may or may not be site-related and may or may not be considered as COPCs (see Figure D-1). These data will be passed through data screens to "narrow down" the total list to be considered in the quantitative risk evaluation. These screens typically include a background screen, a risk screen, and a weight of evidence screen. Slight modifications to standard screening procedures are required when addressing radiological contaminants in the North County properties. Each screening approach, including any modifications to address radionuclides, is described below.

The background screen is performed by comparing the maximum detected chemical concentration against background criteria. Attachments 1 through 4 show the characterization of background for soil, ground water, surface water, and sediment, respectively. If the maximum detected concentration is below the corresponding background criteria, the chemical is not retained for additional evaluation. However, if the chemical is present at concentrations above background criteria, that chemical is retained and subjected to additional analyses. For this assessment, the background criterion is that concentration level below which at least 95% of the background sample concentrations in the distribution fall, with a confidence level of 95% [hereafter referred to as the upper tolerance level (UTL)]. To complete the background screen, all results in a given media and aggregate, where applicable, are compared to the chemical-specific UTL. Chemicals with no detection greater than the UTL are considered naturally occurring and not related to past waste disposal activities at the site. The background screen was performed using the entire North County database. For these initial screens chemicals are retained for the entire site and not by individual properties. This conservative approach was considered necessary given the limited data at some individual properties.

Having completed the background screen, chemicals are then compared to risk-based screening levels, or generic PRGs. The generic PRGs used in this FS are those developed by EPA Region IX. Note that the non-carcinogenic PRGs from Region IX are for a HI of 0.1 (versus 1.0). Thus, EPA Region IX has reduced these noncarcinogenic values by a factor of 10 from the HQ of 1.0 for screening purposes. Thus, the generic PRGs used are conservative screening values based on a HQ of 0.1 or a 10^{-6} risk. These levels are often referred to as the "point of departure".

Note that the Region IX PRGs are for non-radionuclides only. These PRGs (with the non-carcinogenic values modified as described above) are used for screening as follows. The tap water PRGs are used to screen detected ground water and surface water chemicals. The residential soil PRGs are used to screen chemicals detected in surface soil and sediment, while the industrial soil PRGs are used to screen detected subsurface soil chemicals. Chemicals with maximum detected concentrations less than the corresponding generic PRG are removed from further analyses. Because generic PRGs for radionuclides are not provided by Region IX, the risk screen is not performed on radionuclides. All radionuclides are further evaluated in the subsequent processes.

The final screen before identifying PCOCs is the weight of evidence screen. A weight of evidence screen is performed to determine which chemicals that pass through the background and risk screens should be included in site-specific risk calculations. Chemicals that are

infrequently detected are evaluated to determine if they truly are site-related (EPA, 1989). Unless the presence of an infrequently detected chemical is expected (based on historical site information), or is likely to identify the existence of a "hot spot," those chemicals with low frequency of detection are eliminated from additional analyses. The weight of evidence screen also eliminates those chemicals that are essential nutrients with low concentrations (EPA, 1989).

Any chemicals that pass through the background, risk, and weight of evidence screens are retained as PCOCs. However, all PCOCs may not be identified as COPCs until after a site-specific risk assessment is performed. If the total risk for a specified receptor (e.g., resident) and medium (e.g., soil) exceeds 10^{-4}, those individual PCOCs with a risk greater than 10^{-6} may be identified as carcinogenic COPCs for the site. If the total hazard for a specified receptor (e.g., resident) and medium (e.g., soil) exceeds 1.0, those individual PCOCs with a hazard quotient greater than 0.1 may be identified as non-carcinogenic COPCs for the site. As mentioned, radiological and non-radiological risks are calculated separately. Therefore, the identification of radiological COPCs will not depend on non-radiological PCOCs, and vice versa. The final step in selecting COCs to be used in the evaluation of alternatives is to determine what risk-based COPCs are linked to FUSRAP ore processing and waste disposal activities. Those COPCs which are determined to be site-related are retained for evaluation in the FS as COCs.

D.1.1.1 Radionuclide Screening

The St. Louis Site, including both the St. Louis Downtown Site (SLDS) and the North County Site, was designated into FUSRAP because elevated concentrations of radionuclides (as a result of processing uranium ore) were found at the site. Uranium ore is known to contain elevated concentrations of radionuclides from the three naturally occurring decay series, specifically the uranium, thorium and actinium series. The primary list of radiological contaminants is limited to long-lived radionuclides in these series (short-lived decay products are included in slope factors so that they need not be included explicitly). The list of long-lived radionuclides includes U-238, U-234, Th-230, Ra-226 and Pb-210 from the uranium series, Th-232, Ra-228 and Th-228 from the thorium series; and U-235, Pa-231 and Ac-227 from the actinium series.

The background screen indicates all long-lived members of the uranium, thorium and actinium series are present above background and are retained for various location across the North County, although at some properties they may not be present above screening levels or may be absent from the site database. The site database contains mostly data on U-238, Th-230, Ra-226 and Th-232 and limited data on remaining radionuclides. However, the relationship between radionuclides in these decay series is used to estimate the total source term. The site database also contains non-FUSRAP-related radionuclides including Am-241 and Cs-137 that are a result of fallout from past atmospheric weapons testing, and naturally occurring K-40. These are removed from consideration as a result of the background screen, and the fact that they are not FUSRAP-related.

For any given property, data for the complete list of long-lived radionuclides may not be available. Examples include properties with only Th-230 data, only Ra-226, Th-230, and Th-232 data, or only Ra-226, Th-230, Th-232, and U-238 data. In such cases, concentrations of other

FUSRAP-related radionuclides may be estimated based an observed relationship or site knowledge. Specifically, when site data are not available:

- Radionuclides in the thorium series are assumed to be in secular equilibrium because sufficient time has passed since the ore was processed to allow equilibrium to be achieved;

- Because the uranium was neither enriched nor depleted, uranium isotopes are assumed to be present in natural abundance (i.e., the ratios for U-238:U-235:U-234 = 1.0:0.046:1.0 by activity or 99.28%:0.711%:0.0055% by mass);

- Because there is evidence that the extraction process affected Pa-231 or Ac-227, these radionuclides are assumed to be present as described in Table 2.15 of the BRA [additional samples have been collected from the St. Louis Airport Site (SLAPS) to supplement Table 2.15 results]; and

- Pb-210 is assumed to be present relative to Ra-226 as described in Table 2.15 of the BRA. (Note that the BRA Table 2-15 data are summarized in Section D.1.2.2 of this Appendix).

Because a risk screen is not performed on radionuclides, all radionuclides that pass through the background screen are retained. Radionuclides that pass through the weight of evidence screen (see Section D.1.1.3) will be identified as PCOCs. Attachment 5 presents estimated radionuclide concentrations in surface and subsurface soil on a property-by-property basis after background is subtracted from the gross concentration. Consistent with Federal guidance risks and doses from radionuclides will be quantified only for those isotopes that are above background. Isotopes with an adjusted exposure concentration of 0.0 pCi/g are considered to be below background.

D.1.1.2 Non-Radionuclide Screening

The non-radiological screening to determine PCOCs is presented in Attachments 6 through 10 for surface soil, subsurface soil, ground water, surface water, and sediment, respectively. These attachments include exposure concentrations for each property. Attachments 8, 9, and 10 also include radionuclide data in non-soil media. Radionuclides in soil were presented separately from non-radionuclides given the overwhelming amount of radiological soil data relative to non-radiological data and because the risk model for radionuclides in soil requires the separation of data sets.

D.1.1.3 Weight of Evidence Screen

A weight of evidence screen is performed to determine which of those chemicals that pass through the background and risk screens are PCOCs. Chemicals that are infrequently detected are evaluated to determine if they can be eliminated as PCOCs for a given medium. Unless an infrequently detected chemical is expected (based on historical site information), or is likely to identify the existence of a “hotspot,” these chemicals with low frequency of detection are eliminated (EPA 1989).

Long-lived radionuclides from the uranium, thorium, and actinium series are the only radionuclides identified as PCOCs. All non-radionuclides that pass through the background screen, the risk screen, and the weight of evidence screen are identified as PCOCs. Attachments 6 through 10 present the screening and determination of PCOCs for surface soil, subsurface soil, ground water, surface water, and sediment, respectively (see far right column in each table). Table D-1 summarizes the PCOCs identified across all media.

Table D-1. Summary of Potential Chemicals of Concern (PCOCs) for Each Medium

PCOC	Surface Soil	Subsurface Soil	Ground Water	Surface Water	Sediment
		Quantitative PCOCs			
Inorganics					
Antimony	X	X			
Arsenic	X	X	X	X	X
Barium	X		X		
Boron	X		X		
Cadmium	X		X		
Chromium	X	X	X		
Fluoride			X	X	
Manganese	X	X	X		X
Molybdenum	X		X	X	
Nickel	X	X	X		
Nitrate	X		X	X	
Nitrite			X	X	
Selenium	X		X	X	X
Strontium			X		
Thallium	X	X	X		X
Uranium	X	X	X	X	
Vanadium	X		X		
Zinc	X				
Organics					
1,2-Dichloroethene	X	X	X		
Acetone				X	
Benz(a)anthracene	X				X
Benzo(a)pyrene	X				X
Benzo(b)fluoranthene	X				X
Benzo(k)fluoranthene					X
Bis(2-ethylhexyl)phthalate			X	X	
Chloroform			X		
Chloromethane			X		
Dibenz(a,h)anthracene	X				X
Dieldrin		X			
Dimethylbenzene	X	X	X	X	
Indeno(1,2,3-cd)pyrene	X				X
MCPA	X				
MCPP	X	X	X		
Methylene chloride				X	
PCB-1254	X				
Tetrachloroethene				X	
Trichloroethene			X	X	

Table D-1. Summary of Potential Chemicals of Concern (PCOCs) for Each Medium (Cont'd)

PCOC	Surface Soil	Subsurface Soil	Ground Water	Surface Water	Sediment
Radionuclides					
Actinium-227	X	X			
Lead-210	X	X			
Protactinium-231	X	X			
Radium-226	X	X			
Radium-228	X	X			
Thorium-228	X	X			
Thorium-230	X	X			
Thorium-232	X	X			
Uranium-234	X	X			
Uranium-235	X	X			
Uranium-238	X	X			
Qualitative PCOCs[a]					
Inorganics					
Aluminum	X			X	X
Ammonia			X	X	
Cerium					X
Cobalt	X	X			
Copper	X				
Lanthanum					X
Lead	X	X	X	X	
Lithium			X		
Neodymium					X
Niobium					X
Orthophosphate				X	
Silicon			X		
Sulfate	X	X	X	X	
Sulfide	X	X			
Thorium					X
Titanium	X	X	X	X	X
Organics					
1,2,3,5-Tetramethylbenzene				X	
1,2,3-Trimethylbenzene				X	
1,2,4-Trimethylbenzene				X	
1,3,5-Trimethylbenzene				X	
1-Ethyl-2-methylbenzene				X	
2-Methylnaphthalene	X	X			X
Benzo(ghi)perylene	X				X
Endosulfan I			X		
Endosulfan sulfate					X
Endrin ketone					X
Phenanthrene	X				X

[a] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively.

D.1.2 EXPOSURE ASSESSMENT

D.1.2.1 Land Use

This assessment considers approximately 100 individual properties or exposure units. Each exposure unit has a unique identifier (usually a city parcel number) so that data and exposure results may easily be tracked. These properties represent a wide range of physical characteristics (size, shape, etc.), current land uses, and projected future land uses. For the baseline assessment, however, the conservative standard default size is used and the land use is assumed to include all five potential receptors. That is, contamination on some properties may cover a small surface area (which would lower risk estimates) and may only reasonably expose a subset of individuals (e.g., utility workers). Property-specific and receptor-specific calculations will be part of the final status survey process.

D.1.2.2 Identification of Receptors and Primary Exposure Parameters

Table D-2 summarizes the potential receptors and the primary exposure parameters to be used in risk and dose calculations. The potential receptors modeled in this assessment include a resident, an industrial worker, a maintenance worker, a recreational receptor/trespasser, and a construction/utility (subsurface industrial) worker. Exposure pathways for all receptors include dermal contact (non-radionuclides only), direct gamma (radionuclides only), soil/sediment ingestion and dust inhalation. While ground-water data are evaluated, the drinking water pathway is not considered to be a viable pathway for the contaminated areas at the North County Site. The evaluation of ground water is presented for informational purposes only.

Erosion Rate

The following is an excerpt from the *Data Collection Handbook to Support Modeling the Impacts of Radioactive Material in Soil* (ANL, 1993) used to select the erosion rate for North County soils.

> *An erosion rate of 6×10^{-5} m/yr, leading to erosion of 0.06 m of soil in 1,000 yr, can be used for a site with a 2% slope if it can be reasonably shown that the farm/garden scenario is unreasonable; for example, if the site is, and will likely continue to be, unsuitable for agricultural use.*

Resident

The site resident is assumed to live on-site for 350 days per year for 30 years beginning from birth. Each day the resident is assumed to spend 16.4 hours indoors and 2.0 hours outdoors on-site (EPA, 1997). Because child and adult ingestion rates, body weights, and exposure durations vary, exposure to the resident via ingestion of soil/sediment is based on a weighted average of the respective child and adult parameters. The assumptions used in this weighted average are:

Table D-2. Exposure Parameters for each Medium and Receptor Evaluated

Parameter by Media/Pathway	Units	Industrial	Construction/ Utility	Recreational/ Trespasser	Maintenance Worker	Residential
Parameters Independent of Media/Pathway						
Exposure Frequency	days/year	250[c]	250 (10[a])	26[b]	26[b]	350[c]
Exposure Duration	years	25[c]	1.0	9.0	6.6[c]	30[c]
Indoor Exposure Frequency	hours/day	7.0	0.0	0.0	4.0	16.4[c]
Indoor Fraction	unitless	0.200	0.0	0.0	0.0119	0.655
Outdoor Exposure Frequency	hours/day	1.0	8.0	2.0	4.0	2.0[c]
Outdoor Fraction	unitless	0.0285	0.228 (0.00913[a])	0.00594	0.0119	0.0799
Contaminated Zone Thickness	meters	0.3	0.3	0.3	0.3	0.3
Cover Thickness	meters	0.0	0.0	0.0	0.0	0.0
Erosion Rate	meters/year	0.00006	0.00006	0.00006	0.00006	0.00006
Media Evaluated per Receptor						
Surface Soil	-	Yes	Yes	Yes	Yes	Yes
Subsurface Soil	-	No	Yes	No	No	No
Sediment	-	Yes	No	Yes	Yes	Yes
Ground Water	-	Yes	No	No	No	Yes
Surface Water	-	No	No	Yes	No	Yes
Surface Soil and Sediment *						
Incidental Ingestion						
Soil Ingestion Rate						
Adult	mg/day	50[c]	480[c]	NA	480[c]	100[c]
Child	mg/day	NA	NA	50[c]	NA	200[c]
Exposure Frequency	days/year	250	250 (10[a])	26[b]	26[b]	350
Exposure Duration	years					
Adult	years	25	1	NA	6.6[c]	24
Child	years	NA	NA	9[d]	NA	6
Body Weight						
Adult	kg	70	70	NA	70	70
Child	kg	NA	NA	50[d]	NA	50
Carcinogenic Averaging Time	days	25550	25550	25550	25550	25550
Non-carcinogenic Averaging Time	days	9125	365	3285	2409	10950
Dermal Contact						
Skin Area	m^2/event	0.57[e]	0.57[e]	0.34[e]	0.57[e]	0.57[e]
Adherence Factor	mg/cm^2	0.1[e]	0.28[e]	0.3[e]	0.035[e]	0.08[e]
Exposure Frequency	days/year	250	250 (10[a])	26[b]	26[b]	350
Exposure Duration	years	25	1[i]	9[d]	6.6[c]	30
Body Weight	kg	70	70	50[d]	70	70
Carcinogenic Averaging Time	days	25550	25550	25550	25550	25550
Non-carcinogenic Averaging Time	days	9125	365	3285	2409	10950
Inhalation of VOCs and Dust						
Inhalation Rate	m^3/hour	0.552[c,f]	1.3[c,h]	0.514[c,g]	1.3[c,h]	0.552[c,f]
Exposure Time	hours/day	8	8	2[i]	8	18.4[c,j]
Exposure Frequency	days/year	250	250 (10[a])	26[b]	26[d]	350
Exposure Duration	years	25	1	9[d]	6.6[c]	30
Body Weight	kg	70	70	50[d]	70	70
Carcinogenic Averaging Time	days	25550	25550	25550	25550	25550
Non-carcinogenic Averaging Time	days	9125	365	3285	2409	10950
External Radiation						
Gamma Shielding Factor[o]	unitless	0.4	0.4	NE	0.4	0.4
Subsurface Soil						
Incidental Ingestion						
Soil Ingestion Rate	mg/day	NE	480[c]	NE	NE	NE
Exposure Frequency	days/year	NE	250	NE	NE	NE
Exposure Duration	years	NE	1.0[i]	NE	NE	NE
Body Weight	kg	NE	70	NE	NE	NE

Table D-2. Exposure Parameters for each Medium and Receptor Evaluated (Cont'd)

Parameter by Media/Pathway	Units	Industrial	Construction/ Utility	Recreational/ Trespasser	Maintenance Worker	Residential
Carcinogenic Averaging Time	days	NE	25550	NE	NE	NE
Non-carcinogenic Averaging Time	days	NE	365	NE	NE	NE
Dermal Contact						
Skin Area	m^2/event	NE	0.57[e]	NE	NE	NE
Adherence Factor	mg/cm^2	NE	0.28[e]	NE	NE	NE
Exposure Frequency	days/year	NE	250	NE	NE	NE
Exposure Duration	years	NE	1[i]	NE	NE	NE
Body Weight	kg	NE	70	NE	NE	NE
Carcinogenic Averaging Time	days	NE	25550	NE	NE	NE
Non-carcinogenic Averaging Time	days	NE	365	NE	NE	NE
Inhalation of VOCs and Dust						
Inhalation Rate	m^3/hour	NE	1.3[c,h]	NE	NE	NE
Exposure Time	hours/day	NE	8	NE	NE	NE
Exposure Frequency	days/year	NE	250	NE	NE	NE
Exposure Duration	years	NE	1[i]	NE	NE	NE
Body Weight	kg	NE	70	NE	NE	NE
Carcinogenic Averaging Time	days	NE	25550	NE	NE	NE
Non-carcinogenic Averaging Time	days	NE	365	NE	NE	NE
Ground Water						
Drinking Water Ingestion						
Drinking Water Ingestion	L/day	1	NE	NE	NE	2.3[c]
Exposure Frequency	days/year	250	NE	NE	NE	350
Exposure Duration	years	25	NE	NE	NE	30
Body Weight	kg	70	NE	NE	NE	70
Carcinogenic Averaging Time	days	25550	NE	NE	NE	25550
Non-carcinogenic Averaging Time	days	9125	NE	NE	NE	10950
Dermal Contact while Showering						
Skin Area	m^2	NE	NE	NE	NE	2.2[e]
Exposure Time	hours/event	NE	NE	NE	NE	0.25[e]
Exposure Frequency	events/year	NE	NE	NE	NE	350
Exposure Duration	years	NE	NE	NE	NE	30
Body Weight	kg	NE	NE	NE	NE	70
Carcinogenic Averaging Time	days	NE	NE	NE	NE	25550
Non-carcinogenic Averaging Time	days	NE	NE	NE	NE	10950
Inhalation of VOCs during Household Water Use						
Intake Rate	mg/day	NE	NE	NE	NE	Chemical-Specific [k]
Exposure Frequency	events/year	NE	NE	NE	NE	350
Exposure Duration	years	NE	NE	NE	NE	30
Body Weight	kg	NE	NE	NE	NE	70
Carcinogenic Averaging Time	days	NE	NE	NE	NE	25550
Non-carcinogenic Averaging Time	days	NE	NE	NE	NE	10950
Surface Water						
Dermal Contact while Wading						
Skin Area	m^2	NE	NE	0.619[l]	NE	0.619[l]
Exposure Time	hours/event	NE	NE	2	NE	2
Exposure Frequency	events/year	NE	NE	5[m]	NE	26[b]
Exposure Duration	years	NE	NE	9[d]	NE	9[d]
Body Weight	kg	NE	NE	50[d]	NE	50[d]
Carcinogenic Averaging Time	days	NE	NE	25550	NE	25550
Non-carcinogenic Averaging Time	days	NE	NE	3285	NE	3285

Table D-2. Exposure Parameters for each Medium and Receptor Evaluated (Cont'd)

Parameter by Media/Pathway	Units	Industrial	Construction/ Utility	Recreational/ Trespasser	Maintenance Worker	Residential
Inhalation of VOCs						
Inhalation Rate	m^3/hour	NE	NE	0.514[c,g]	NE	0.514[c,g]
Exposure Time	hours/day	NE	NE	2	NE	2
Volatilization Factor	L/m^3	NE	NE	0.5[n]	NE	0.5[n]
Exposure Frequency	events/year	NE	NE	5[m]	NE	26[b]
Exposure Duration	years	NE	NE	9[d]	NE	9[d]
Body Weight	kg	NE	NE	50[d]	NE	50[d]
Carcinogenic Averaging Time	days	NE	NE	25550	NE	25550
Non-carcinogenic Averaging Time	days	NE	NE	3285	NE	3285

a Utility worker only – all other parameters the same for both construction and utility workers
b Assumes an average of one event every other week.
c EPA 1997, "Exposure Factors Handbook," Volumes I, II, and III, EPA/600/P-95/002Fa-c, EPA, Office of Research and Development, Washington, DC.
d Based on an exposure to a child 6 to 14 years old.
e EPA 1998, "Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance," Office of Emergency and Remedial Response, Washington, D.C.
f Average of male and female adult values.
g Average of males and females between 6 and 14 years of age.
h Hourly average for outdoor worker.
i Value from the 1993 Baseline Risk Assessment.
j Average time spent at home.
k Murphy, B.L. 1987. Total exposure from contaminated tap water, presented at the 80th Annual Meeting of the Association Dedicated to Air Pollution Control and Hazardous Waste Management. June 21-26, 1987.
l Average value for males and females between 6 and 14 years of age. Represents area for hands, legs, and feet.
m Assumes one event every other week during the summer months.
n EPA 1991, Appendix D of "Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals)," Office of Emergency and Remedial Response, Washington, D.C.
o EPA 1996b, "Reassessment of Radium and Thorium Soil Concentrations and Annual Dose Rates"

* Construction Worker is evaluated for exposure to surface soil, but not to sediment. All other receptors are evaluated for exposure to both surface soil and sediment.

NE = Not evaluated.
NA = Not applicable.

The ingestion of soil/sediment for the residential scenario incorporates a weighted-average of child and adult parameter values, which are from EPA 1997. No other scenario incorporates this weighted average. This approach was requested by Dave Crawford (USACE, Kansas City District).

Additional parameters that impact risk calculations include the relationship between radionuclides in site soils. For some properties, a complete set of radionuclides in not available. When this is the case, the relationships shown in BRA Table 2.15 are used (see below). For more details, see the BRA.

Radionuclides	SLAPS	Residential Vicinity Properties	HISS/Futura
Actinium-227	0.92 times Radium-226 value	0.007 times Thorium-230 value	1.1 times Radium-226 value
Lead-210	1.7 times Radium-226 value	0.014 times Thorium-230 value	2.4 times Radium-226 value
Ptroactinium-231	1.0 times Radium-226 value	0.008 times Thorium-230 value	1.3 times Radium-226 value
Radium-226	1.0 times Radium-226 value	0.007 times Thorium-230 value	1.0 times Radium-226 value
Radium-228	0.28 times Thorium-232 value	0.00036 times Thorium-230 value	0.08 times Thorium-232 value
Thorium-228	0.85 times Thorium-232 value	0.001 times Thorium-230 value	1.0 times Thorium-232 value
Thorium-230	1.0 times Thorium-230 value	1.0 times Thorium-230 value	1.0 times Thorium-230 value
Thorium-232	1.0 times Thorium-232 value	0.001 times Thorium-230 value	1.0 times Thorium-232 value
Uranium-234	1.0 times Uranium-238 value	0.012 times Thorium-230 value	1.0 times Uranium-238 value
Uranium-235	0.046 times Uranium-238 value	0.00052 times Thorium-230 value	0.046 times Uranium-238 value
Uranium-238	1.0 times Uranium-238 value	0.012 times Thorium-230 value	1.0 times Uranium-238 value

- The child weighs 50 kg and ingests 200 mg of soil or sediment per day, over a 6 year time period.

- The adult weighs 70 kg and ingests 100 mg of soil or sediment per day, over a 24 year time period.

This resident also is assumed to breathe at a rate of 0.552 m^3 of air per hour. No clean cover is assumed to be present so the resident is exposed to contaminants in surface soils. A shielding factor of 0.4 (60 percent reduction) is assumed for indoor exposures. A dust loading value of 100 $\mu g/m^3$ is also assumed.

Industrial Worker

The industrial worker is assumed to be on site for 7 hours per day while indoors and 1 hour per day while outdoors. The worker is at the site for 250 days per year for 25 years. It is assumed that the industrial worker ingests 50 mg of soil per day and breathes at a rate of 0.552 m^3 per hour. No clean cover is assumed to be present so the industrial worker is exposed to contaminants in surface soils. A shielding factor of 0.4 (60 percent reduction) is assumed for indoor exposures and a dust loading value of 0.1 mg/m^3 is also assumed.

Maintenance Worker

The maintenance worker is assumed to be on the site for 8 hours per week (4 hours inside and 4 hours outside) to mow, care for any landscaping and generally maintain the site. It is assumed that this individual is on-site for 26 total days per year. It is assumed that the worker holds the position for 6.6 years, has an inhalation rate of 1.3 m^3 per hour and a soil ingestion rate of 480 mg per day. The soil ingestion rate of 480 mg per day may be conservative for this receptor, but is used because the worker could participate in construction-like activities (e.g., landscaping). A shielding factor of 0.4 (60 percent reduction) is assumed for indoor exposures and a dust loading value of 0.1 mg/m^3 is assumed.

Recreational Receptor/Trespasser

The recreational receptor is assumed to be an older child (6-14 years old) who occasionally trespasses on the site. This individual is assumed to be on the site for 2 hour per day, 26 days per year for 9 years. An inhalation rate of 0.514 m^3 per hour, a soil ingestion rate of 50 mg per day and a mass loading of 0.1 mg/m^3 are assumed. The recreational receptor/trespasser is an outdoor exposure scenario only, so no shielding factor is required.

Construction/Utility Worker

The construction worker is an individual who digs into subsurface soils to complete construction-type activities (e.g., constructing a building foundation). It is assumed that the construction worker is exposed for 8 hours per day, 250 days per year for one year. An inhalation rate of 1.3 m^3 per hour, a soil ingestion rate of 480 mg per day and a mass loading of 0.1 mg/m^3 are assumed. The construction worker is an outdoor exposure scenario only, so no shielding factor is required. A utility worker may also be described using similar exposure parameters,

although the listed exposure frequency (see Table D-2) is considered too conservative. Input from local utilities suggests that a reasonable exposure frequency is 10 days or 80 hours per year verses 250 days or 2000 hours per year for the base construction worker (USACE, 1999a). For road, railroad, and bridge construction activities, the listed exposure frequency is again considered too conservative. A reasonable exposure frequency given the linear feet of potentially contaminated road and rail in North County is 90 days or 720 hours per year versus 250 days or 2000 hours per year for the base construction worker.

D.1.2.3 Exposure Concentration

Exposure concentrations of chemicals are developed using EPA guidance *Supplemental Guidance to RAGS: Calculating the Concentration Term* (EPA, 1992). The exposure concentration is a representative concentration to which a receptor will be exposed for a site and medium. The following describes the approach for calculating the exposure concentration term for use in risk assessment calculations.

As defined in RAGS Part A, the concentration term should be the smaller value between the maximum detected concentration and the upper 95% confidence limit on the mean (hereafter referred to as the UCL_{95}) (EPA, 1989). In order to calculate the UCL_{95}, the data's particular statistical distribution must be determined (e.g., normal vs. log-normal). After this determination is made, the UCL_{95} can be calculated appropriately and the exposure concentration term can then be determined. For non-radionuclides, the exposure concentration is defined as the smaller of the UCL_{95} and the maximum detected concentration. For radionuclides, the exposure concentration is defined as the smaller of the UCL_{95} and the maximum detected concentration, minus the average background concentration (i.e., net values).

Attachment 5 lists the radionuclide exposure concentrations in soil for each site property. These exposure concentrations represent the smaller of the UCL_{95} and maximum detected concentration, minus average site background values. Average background in the North County is estimated at 1.05 pCi/g for Ra-226, 1.66 pCi/g for Th-230, 1.11 pCi/g for Th-232 and 1.18 pCi/g for U-238. Some properties in Attachment 5 are listed without a source term. In these cases, the radionuclide concentrations are below background and risk calculations are not required. Data are broken into four depth intervals, including less than 0.5 ft (15 cm), greater than 0.5 ft (15 cm), less than 5 ft (1.5 m) for SLAPS only, and all depths. These depth intervals were selected as dictated by the exposure assessment method and the site database. Surface soils are defined as the top 5 ft for SLAPS, because the top several feet have been disturbed and some subsurface soil could be at the surface in the near future. This averaging technique increases the calculated dose and risk from the generally higher concentrations of material in the near surface soils.

Data from some properties is limited to one or a few radionuclides. When data are limited, missing radionuclides are added, to the extent possible, considering the following:

- A known relationship between parent and decay products;
- A relationship based on the site analysis of site data (e.g., Table 2.15 in the BRA and as shown at the bottom of Table D-2); or

- Best technical judgment.

There is no current method for adding non-radiological constituents that are absent from the database.

In some cases there is no sound basis for adding in radionuclides. For example, some sites have data for Th-230 only. At these sites, the Th-230 value is low (usually less than 10 pCi/g) and the BRA suggests that other radionuclides be considered at some small fraction of the Th-230 value. This step, however, would add the remaining radionuclides at levels below background and would, thus, complicate the source term calculation without adding to the actual source. In this case, the Th-230 data are considered without the addition of other radionuclides.

There are also properties with only Ra-226, Th-230 and Th-232 data (no U-238 value). It is currently difficult to predict the U-238 value through use of a radium or thorium surrogate. It is also known that the risk and dose from uranium in soil is at least an order of magnitude less than that from radium or thorium and the concentrations of uranium are relatively insignificant in the North County. This considered, the U-238 (or other uranium isotope) values are not estimated when no database value is given.

Similarly, there are sites where no Th-230 value is provided. In many cases, the radium, uranium, etc., concentrations appear to be near or below background. It is known, however, that Th-230 is the radionuclide found in the highest concentrations in the North County Site. A possible next step could be to estimate a Th-230 concentration at a significantly higher concentration than the other site radionuclide concentrations. Doing so may incorrectly introduce a source of contamination (with a high level of uncertainty) and, thus, identify a property as requiring remediation when it does not. While it may be considered conservative to estimate a Th-230 value, this assessment assumes that the uncertainty in such a step is too high, and those properties should instead be considered for additional characterization.

Attachments 6 through 10 list the non-radionuclide exposure concentrations for each site property, for surface soil, subsurface soil, ground water, surface water, and sediment, respectively. Attachments 6 through 10 also list radiological exposure concentrations for radionuclides for all media.

D.1.3 RISK CHARACTERIZATION

D.1.3.1 Methodology

RESRAD Version 5.82 is used to estimate potential health impacts due to exposure to radiological PCOCs in soil and sediment. The RESRAD code uses methods similar to RAGS guidance. RESRAD uses Federal Guidance Reports 11 and 12 to estimate dose and HEAST slope factors to estimate risk. The major differences in RESRAD and the RAGS Part A methods include the following:

- RESRAD models into the future taking into account source removal by radiological decay, leaching, erosion, etc., and radiological ingrowth – RAGS does not;
- RESRAD considers site-specific conditions such as rainfall, soil density, etc. that may impact results – RAGS does not; and
- RESRAD considers the source geometry taking into account the thickness and surface area of soil contamination – RAGS does not.

To estimate risk from exposure to radiological PCOCs, the parameter values listed in Table D-2 and the soil concentrations listed in Attachment 5 were entered into the RESRAD code. A total risk is estimated for years zero (0.0) to 1,000. This approach is necessary to consider the ingrowth of Ra-226 over time. That is, Th-230 does not typically drive risk or dose. Th-230 does, however, decay into Ra-226 that typically does drive risk and dose. To be conservative, dose and risk calculations are performed assuming that up to 1,000 years of Ra-226 ingrowth has occurred.

The methodology for estimating risk from exposure to non-radionuclides is consistent with the methods outlined in the PAM (USACE, 1999b). Standard RAGS equations were used with the parameter values listed in Table D-2. Toxicity values and other chemical-specific parameters used to quantify risks and hazards are presented for the PCOCs in Attachment 11.

D.1.3.2 Uncertainties

Exposure parameters were selected to provide a conservative, yet reasonable, estimate of potential risks to each receptor. Site-specific measurements and data were used, as appropriate, to describe site conditions as accurately as possible. Where site-specific data were not available, parameter values were chosen to provide reasonably conservative estimates of risk, or standard default values recommended by the Exposure Factors Handbook (EPA, 1997) were used. The model assumes that contamination is always spread over a large area and is never covered. Final status surveys and post-remediation risk/dose assessments for each property will consider property-specific characteristics such as surface area and depth below ground surface.

The accuracy of exposure calculations is ultimately limited to the accuracy of the site data and risk models. The data used in the assessment include results from several characterization efforts and include different target analytes, analysis methods, and reporting requirements. The data in this assessment is used assuming the best knowledge of the distribution of contaminants in site soils with the goal of providing conservative, yet reasonable,

estimates of risk. The models used to calculate risks and doses are approved by EPA and are assumed to provide a reasonable prediction of site exposures.

Lifetime cancer risk estimates are provided for exposure to chemical contaminants and are compared to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) target risk range of 10^{-6} to 10^{-4}. Radiological risk slope factors have been developed primarily using data from groups such as the Japanese atomic bomb survivors. These individuals received large doses of radiation over a short period of time. By contrast, potential receptors in this assessment receive relatively small radiological doses over a long period of time. Although cancerous effects have only been detected at doses several orders of magnitude larger than those estimated at the North County Site, it is assumed that the slope factors apply to both large and small radiological doses. Non-radiological CSFs are developed mostly from animal studies, and slope factors for radionuclides and non-radiological incorporate several differences that may result in incompatibility. EPA, therefore, acknowledges a large (undefined) uncertainty in risk estimates and recommends that radiological and chemical risks be presented separately (EPA, 1996a).

A series of reports published by the National Research Council's Committee on the Biological Effects of Ionizing Radiation (BEIR) lists additional uncertainties resulting from the use of CSFs for radionuclides. BEIR reports point out that cancer risks from exposure to radionuclides at environmental levels (typical background radiation produces approximately 300 mrem/yr) are very difficult to distinguish from background cancer rates. In addition, the calculation of CSFs is based on radium dial painter studies, atomic bomb survivor studies, etc., each considering doses many orders of magnitude higher than those received at environmental levels. The applicability of the linear no-threshold model has been debated by many professional societies. However, the linear no-threshold model (i.e., assuming risk is linear with exposure and is possible for even the smallest doses) has been adopted by all relevant United States regulating agencies. Using this model, risks at environmental levels are calculated even at dose levels a small fraction of background.

The use of standard default assumptions for property size and that all modeled receptors are equally likely produces conservative dose and risk results. That is, contamination on some properties may cover a small surface area (which would lower dose estimates) and may only reasonably expose a subset of individuals (e.g., utility workers). Property-specific and receptor-specific calculations will be part of the final status survey process.

In October 1999, Washington State University, under contract to the USACE, published a report titled *Determination of the In Vitro Dissolution Rates of Selected Radionuclides in Soils and Subsequent ICRP 30 Solubility Classification for Dosimetry* (sic) that may be used to support radiological dose and risk estimates. In vitro dissolution rates are broken into three class: D, W and Y with Class D being the most soluble and Class Y being the least soluble. RESRAD assumes by default that all radionuclides are present as Class Y because Class Y would cause the calculated dose and risk estimates to be higher. RESRAD models can be adjusted to reflect the site-specific conditions, if appropriate. Of the three radionuclides studied, Pa-231 and Th-230 are found to be Class Y and only U-238 demonstrates Class W or D characteristics. However, U-238 also shows some Class Y characteristics. To be conservative (i.e., to assure that the calculated

dose and risk are not underestimated), all radionuclides including U-238 are modeled with a Class Y solubility (the RESRAD default).

D.1.3.3 Results

Table D-3 presents the total risk for the reasonable maximum exposure (RME) receptor expected to occur under current and future land use. The limiting RME case occurs for the SLAPS property. Radiological dose and risk estimates are provided with exposure concentrations for soil, for each property and depth grouping, in Attachment 12. This attachment/table includes dose and risk estimates for year 0.0 and year 1,000 as discussed in Section D.1.3.1. The dose assigned to a property is defined as the maximum dose from years 0.0 or 1,000. The risk assigned to a property is defined as the maximum risk from years 0.0 or 1,000. Table D-4a and Table D-4b summarize the results listed in Attachment 12 into major groupings [e.g., vicinity properties (VPs), SLAPS, etc.]. This risk is based on the characterization data. However, some properties have undergone, or are currently undergoing removal actions. Risk results from these properties have been or will be updated as part of the final status survey process.

Attachment 12 lists the dose and risk contributions from all radionuclides for which a non-zero exposure concentration is estimated. As outlined in Section D.1.2.3, some properties may not have concentrations above background, or may not have sufficient data to estimate the concentration of all radionuclides. Radionuclides with no exposure concentration are not listed in this attachment. Attachment 12 also lists dose and risk estimates for a range of depth intervals. These intervals were selected based on data limitations and are evaluated on a property-by-property basis.

Results show that, in general, doses and risks from year zero are significantly larger than those from year 1,000. This occurs because of a combination of factors related to the removal of radionuclides from the contaminated lens. A lens thickness of 0.3 meters is assumed as a typical site-wide value. RESRAD default distribution coefficients were also used and when combined with the stated lens thickness, non-radium radionuclides are effectively removed from the contaminated lens. Analysis has shown that if distribution coefficients are increased by an order of magnitude, non-radium radionuclides remain in the contaminated lens enough to contribute significantly to dose/risk at year 1,000. However, the default distribution coefficients were used in the final model given the high uncertainty and considering that the model is conservative by design. Risk and dose results are presented as conservative averages for each property or exposure unit. While some results may be acceptable to human health, remediation may still be required if concentrations exceed RGs, or if during the final status survey smaller areas containing concentrations above health-based limits are identified.

Potential receptors evaluated include a resident, the industrial worker, maintenance worker, a recreational/trespasser, a utility worker, and construction worker. The current use conditions in the North County Site are summarized by aggregating similar groups of properties or considering major individual properties as follows:

- Industrial, utility, and maintenance worker use for vicinity properties, including investigation areas (IAs)-9, 10, 11, and 13;

Table D-3. RME Receptors Risk Summary

Carcinogens

Scenario Timeframe: Current
Receptor Population: Maintenance Worker
Receptor Age: Adult
Receptor Location: SLAPS

Medium	Exposure Medium	Exposure Route-Pathway	Contaminant of Concern	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Route Total
Soil	Soil	Soil On-Site - Direct Contact	None [a]	Note b	Note b	Note b	Note b	Note b
	Dust	Soil On-Site – Inhalation of Soil as Dust	None [a]	Note b	Note b	Note b	Note b	Note b
							Chemical Soil Risk Total	Note b

Medium	Exposure Medium	Exposure Route-Pathway	Contaminant of Concern	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Route Total
Soil	Soil/Dust	Soil On-Site - Direct Contact and Inhalation of Soil as Dust	Radionuclides	Note c	Note c	-	Note c	4.8E-05
							Radiological Soil Risk Total	4.8E-05

Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult/Child
Receptor Location: SLAPS

Medium	Exposure Medium	Exposure Route-Pathway	Contaminant of Concern	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Route Total
Soil	Soil	Soil On-Site - Direct Contact	Arsenic [d]	8.0E-05	doesn't apply to direct contact	6.6E-07	doesn't apply to direct contact	8.1E-05
	Dust	Soil On-Site - Inhalation of Soil as Dust	Arsenic [d]	doesn't apply to inhalation	4.6E-08	doesn't apply to inhalation	doesn't apply to inhalation	4.6E-08
							Chemical Soil Risk Total	8.1E-05

Medium	Exposure Medium	Exposure Route-Pathway	Contaminant of Concern	Carcinogenic Risk				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Route Total
Soil	Soil/Dust	Soil On-Site - Direct Contact and Inhalation of Soil as Dust	Radionuclides	Note c	Note c	-	Note c	3.7E-03
							Radiological Soil Risk Total	3.7E-03
							Total Risk	Note e

Table D-3. Risk Characterization Summary (Cont'd)

Medium	Exposure Medium	Exposure Route-Pathway	Contaminant of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
Non-Carcinogens								
Scenario Timeframe:	Current							
Receptor Population:	Maintenance Worker							
Receptor Age:	Adult							
Receptor Location:	SLAPS							
Medium	**Exposure Medium**	**Exposure Route-Pathway**	**Chemical of Concern [f]**	**Primary Target Organ(s)**	**Non-Carcinogenic Hazard Quotient**			
					Ingestion	**Inhalation**	**Dermal**	**Exposure Route Total**
Soil	Soil	Soil On-Site - Direct Contact	Arsenic	Cardiovascular, Skin/Hair	1.1E-01	doesn't apply to direct contact	1.1E-04	1.1E-01
		Soil On-Site - Direct Contact	Nickel	Lungs, Immune System	4.2E-02	doesn't apply to direct contact	6.5E-05	4.3E-02
		Soil On-Site - Direct Contact	Thallium	CNS, Skin/Hair	2.0E-03	doesn't apply to direct contact	4.2E-06	2.0E-03
		Soil On-Site - Direct Contact	Vanadium	Lungs	2.0E-02	doesn't apply to direct contact	8.4E-04	2.1E-02
	Dust	Soil On-Site – Inhalation of Soil as Dust	Arsenic	Cardiovascular, Skin/Hair	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Nickel	Lungs, Immune System	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Thallium	CNS, Skin/Hair	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Vanadium	Lungs	doesn't apply to inhalation	-	doesn't apply to inhalation	-
Chemical Soil Hazard Index Total								1.7E-01
Cardiovascular System Total Hazard Index								1.1E-01
Central Nervous System (CNS) Total Hazard Index								2.0E-03
Immune System Total Hazard Index								4.3E-02
Respiratory System (Lungs) Total Hazard Index								6.3E-02
Skin/Hair Total Hazard Index								1.1E-01
					Ingestion	**Inhalation**	**Dermal**	**Exposure Route Total**
Soil	Soil/Dust	Soil On-Site - Direct Contact and Inhalation of Soil as Dust	Radionuclides	Note g	Note g	Note g	Note g	Note g
Radiological Soil Total Dose (mrem/yr)								2.2E+01

Table D-3. Risk Characterization Summary (Cont'd)

Non-Carcinogens								
Scenario Timeframe:	Future							
Receptor Population:	Resident							
Receptor Age:	Adult/Child							
Receptor Location:	SLAPS							
					Non-Carcinogenic Hazard Quotient			
Medium	**Exposure Medium**	**Exposure Route-Pathway**	**Contaminant of Concern [h]**	**Primary Target Organ(s)**	**Ingestion**	**Inhalation**	**Dermal**	**Exposure Route Total**
Soil	Soil	Soil On-Site - Direct Contact	Arsenic	Cardiovascular, Skin/Hair	4.2E-01	doesn't apply to direct contact	3.4E-03	4.2E-01
		Soil On-Site - Direct Contact	Barium	Cardiovascular	9.8E-02	doesn't apply to direct contact	4.7E-03	1.0E-01
		Soil On-Site - Direct Contact	Chromium	Lungs	3.8E-01	doesn't apply to direct contact	6.4E-02	4.5E-01
		Soil On-Site - Direct Contact	Nickel	Lungs, Immune System	1.6E-01	doesn't apply to direct contact	2.0E-03	1.6E-01
		Soil On-Site - Direct Contact	Thallium	CNS, Skin/Hair	7.7E-02	doesn't apply to direct contact	1.3E-03	7.8E-02
		Soil On-Site - Direct Contact	Vanadium	Lungs	7.7E-02	doesn't apply to direct contact	2.6E-02	1.0E-01
		Soil On-Site - Direct Contact	Zinc	Blood	5.2E-03	doesn't apply to direct contact	8.8E-05	5.3E-03
	Dust	Soil On-Site - Inhalation of Soil as Dust	Arsenic	Cardiovascular, Skin/Hair	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Barium	Cardiovascular	doesn't apply to inhalation	2.7E-03	doesn't apply to inhalation	2.7E-03
		Soil On-Site - Inhalation of Soil as Dust	Chromium	Lungs	doesn't apply to inhalation	2.3E-03	doesn't apply to inhalation	2.3E-03
		Soil On-Site - Inhalation of Soil as Dust	Nickel	Lungs, Immune System	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Thallium	CNS, Skin/Hair	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Vanadium	Lungs	doesn't apply to inhalation	-	doesn't apply to inhalation	-
		Soil On-Site - Inhalation of Soil as Dust	Zinc	Blood	doesn't apply to inhalation	-	doesn't apply to inhalation	-
							Chemical Soil Hazard Index Total	1.3E+00
							Blood Total Hazard Index	5.3E-03
							Cardiovascular System Total Hazard Index	5.2E-01
							Central Nervous System (CNS) Total Hazard Index	7.8E-02
							Immune System Total Hazard Index	1.6E-01
							Respiratory System (Lungs) Total Hazard Index	7.1E-01
							Skin/Hair Total Hazard Index	5.0E-01

Table D-3. Risk Characterization Summary (Cont'd)

Medium	Exposure Medium	Exposure Point	Contaminant of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Route Total
Soil	Soil/Dust	Soil On-Site - Direct Contact and Inhalation of Soil as Dust	Radionuclides	Note g	Note g	Note g	Note g	Note g

Radiological Soil Total Dose (mrem/yr) 3.2E+02

Notes:

[a] No Contaminants of Concern (COC) were identified for this property or any other property for the Maintenance Worker receptor.

[b] Not applicable since there are no COCs.

[c] The risk for radionuclides was calculated based only as a total across applicable exposure pathways and are not presented for each individual pathway.

[d] Although not a COC for this property, this contaminant was identified as a COC for another property for the Resident receptor. Risks are shown here for all carcinogenic residential COCs.

[e] The total risk (e.g., sum of chemical and radionuclide risks) may not be directly additive but the risk from exposure to radionuclides far exceeds the risk from exposure to non-radionuclides. Therefore the total risk is approximately the same as the radiological risk.

[f] Although none of the chemicals listed are COCs at this site, these chemicals have been identified as COCs for another property for the Maintenance Worker receptor. Hazards are shown here for all non-carcinogenic maintenance worker COCs.

[g] Radionuclide exposure is not presented in terms of hazard quotient (see dose in mrem/yr).

[h] Although none of the chemicals listed are COCs at this site (since all target organs produce a total HI < 1), these chemicals have been identified as COCs for another property for the Resident receptor. Hazards are shown here for all non-carcinogenic residential COCs except for antimony, which was not evaluated for risk at this site since it was eliminated in the soil screening process.

\- Toxicity criteria are not available to quantitatively address this route of exposure

Table D-4a. Supplemental Human Health Risk Summary Table

Radiological Reasonable Maximum Exposures - Current Receptors

Properties [a]	RME [b] Receptor	Minimum Dose (mrem/yr)	Maximum Dose (mrem/yr)	Average Dose [c] (mrem/yr)	Minimum Risk [d]	Maximum Risk [d]	Average Risk [c]
IAs 1-13	Maintenance	0.0	233	21	6E-10	5E-04	5E-05
HISS & Futura	Industrial	2.7	79	25	4E-05	8E-04	3E-04
Coldwater Creek	Construction	2.9	8.6	5.8	2E-06	3E-06	3E-06
Roads/Bridges/Railroads	Construction	5.4	31	17	2E-06	1E-05	6E-06
VPs (worst-case) [d]	Industrial	15	18	17	2E-04	2E-04	2E-04
VPs (average) [e]	Industrial	0.8	1.3	1.1	2E-05	2E-05	2E-05

Radiological Reasonable Maximum Exposures - Future Receptors

Properties [a]	RME [b] Receptor	Minimum Dose (mrem/yr)	Maximum Dose (mrem/yr)	Average Dose [c] (mrem/yr)	Minimum Risk	Maximum Risk	Average Risk [c]
IAs 1-13	Resident	0.0	3407	311	1E-07	4E-02	4E-03
HISS & Futura	Resident	9.3	294	91	1E-04	3E-03	1E-03
Coldwater Creek	Construction	2.9	8.6	5.8	2E-06	3E-06	3E-06
Roads/Bridges/Railroads	Construction	5.4	31	17	2E-06	1E-05	6E-06
VPs (worst-case) [d]	Resident	51	60	56	7E-04	9E-04	8E-04
VPs (average) [e]	Resident	2.7	4.3	3.5	6E-05	7E-05	7E-05

Non-radiological Reasonable Maximum Exposures - Current Receptors [f]

Properties [a]	RME [b] Receptor	Minimum HI [g]	Maximum HI	Average HI	Minimum Risk	Maximum Risk	Average Risk
IAs 1-13	Maintenance	< 0.1	0.5	< 0.2	2E-8	2E-5	3E-6
HISS & Futura	Industrial	1.4	3.5	2.5	9E-5	3E-4	2E-4
Coldwater Creek	Construction	-	-	-	-	-	-
Roads/Bridges/Railroads [h]	Construction	1.3	1.3	1.3	2E-6	2E-6	2E-5
VPs [h]	Industrial	< 0.1	< 0.1	< 0.1	-	-	-

Non-radiological Reasonable Maximum Exposures - Future Receptors [f]

Properties [a]	RME [b] Receptor	Minimum HI	Maximum HI	Average HI	Minimum Risk	Maximum Risk	Average Risk
IAs 1-13	Resident	< 0.1	2.5	< 0.8	5E-7	3E-4	5E-5
HISS & Futura	Resident	4.7	13	9	4E-4	1E-3	7E-4
Coldwater Creek	Construction	-	-	-	-	-	-
Roads/Bridges/Railroads [h]	Construction	1.3	1.3	1.3	2E-6	2E-6	2E-6
VPs [h]	Resident	0.2	0.2	0.2	-	-	-

[a] VP = vicinity property; IA = investigation area (includes SLAPS)
[b] RME = reasonable maximum exposure
[c] Averaged over year 0.0 and year 1,000 estimates for listed properties
[d] Minimum and maximum values listed for VP with worst-case source term
[e] Results when averaging across all VPs
[f] Results for all non-radionuclides including those that are non-FUSRAP-related
[g] HI = hazard index; only maximum values provided because total risks are dominated by radionuclides
[h] No non-radiological available data except where property also falls under an IA

Table D-4b. Summary of Radiological Doses and Risks by Property

Property Name	RESIDENTIAL SCENARIO				INDUSTRIAL SCENARIO				CONSTRUCTION SCENARIO			
	Dose Year = 0.0	Dose Year = 1000	Risk Year = 0.0	Risk Year = 1000	Dose Year = 0.0	Dose Year = 1000	Risk Year = 0.0	Risk Year = 1000	Dose Year = 0.0	Dose Year = 1000	Risk Year = 0.0	Risk Year = 1000
VPs (highest value)	60	51	9E-04	7E-04	18	15	2E-04	2E-04	47	42	2E-05	2E-05
VPs (average value)	2.7	4.3	6E-05	7E-05	0.8	1.3	2E-05	2E-05	2.3	3.2	9E-07	2E-06
Coldwater Creek	not applicable				not applicable				8.6	2.9	3E-06	2E-06
Railroad	not applicable				not applicable				6.7	5.4	3E-06	2E-06
Road Right-of-way	29	37	4E-04	5E-04	8.0	11	1E-04	1E-04	25	31	9E-06	1E-05
HISS	42	9.3	5E-04	1E-04	12	2.7	1E-04	4E-05	34	7.4	1E-05	3E-06
Futura	294	18	3E-03	3E-04	79	5.3	8E-04	7E-05	251	14	8E-05	6E-06
IA-1	3407	78	4E-02	1E-03	946	24	9E-03	3E-04	2801	56	1E-03	3E-05
IA-2	382	180	5E-03	3E-03	105	51	1E-03	7E-04	322	149	1E-04	6E-05
IA-3	492	65	6E-03	9E-04	144	18	2E-03	2E-04	369	54	2E-04	2E-05
IA-4	1159	315	2E-02	4E-03	337	90	4E-03	1E-03	890	262	4E-04	1E-04
IA-5	179	89	2E-03	1E-03	48	25	5E-04	3E-04	156	73	5E-05	3E-05
IA-6	84	68	9E-04	1E-03	21	20	2E-04	3E-04	80	55	2E-05	2E-05
IA-7	621	256	6E-03	4E-03	164	72	2E-03	9E-04	557	213	2E-04	8E-05
IA-8	341	221	3E-03	3E-03	87	63	8E-04	8E-04	325	184	8E-05	7E-05
IA-9	24	16	2E-04	2E-04	6.0	4.5	6E-05	6E-05	22	13	6E-06	5E-06
IA-10	24	5.0	3E-04	8E-05	6.5	1.5	7E-05	2E-05	20	3.6	7E-06	2E-06
IA-11	0.0	0.0	1E-07	4E-07	0.0	0.0	2E-08	1E-07	0.0	0.0	5E-10	1E-08
IA-12	30	42	4E-04	6E-04	7.6	12	9E-05	2E-04	30	35	7E-06	1E-05
IA-13	10	4.8	1E-04	8E-05	2.8	1.5	3E-05	2E-05	8.8	3.3	3E-06	2E-06
SLAPS	321	110	4E-03	2E-03	89	31	1E-03	4E-04	267	91	1E-04	4E-05

Property Name	MAINTENANCE SCENARIO				RECREATIONAL/TRESPASSER SCENARIO				UTILITY WORKER SCENARIO			
	Dose Year = 0.0	Dose Year = 1000	Risk Year = 0.0	Risk Year = 1000	Dose Year = 0.0	Dose Year = 1000	Risk Year = 0.0	Risk Year = 1000	Dose Year = 0.0	Dose Year = 1000	Risk Year = 0.0	Risk Year = 1000
VPs (highest value)	3.8	3.4	1E-05	8E-06	0.9	0.8	5E-06	4E-06	1.9	1.7	8E-07	7E-07
VPs (average value)	0.2	0.3	5E-07	7E-07	0.0	0.1	3E-07	3E-07	0.1	0.1	3E-08	6E-08
Coldwater Creek	0.7	0.2	1E-06	8E-07	0.1	0.1	5E-07	4E-07	0.3	0.1	1E-07	6E-08
Railroad	0.5	0.4	2E-06	1E-06	0.1	0.1	8E-07	6E-07	0.3	0.2	1E-07	1E-07
Road Right-of-way	2.1	2.5	5E-06	6E-06	0.4	0.6	2E-06	3E-06	1.0	1.2	4E-07	5E-07
HISS	2.8	0.6	7E-06	2E-06	0.6	0.1	3E-06	7E-07	1.3	0.3	6E-07	1E-07
Futura	21	1.1	4E-05	3E-06	4.0	0.3	2E-05	1E-06	10	0.6	3E-06	2E-07
IA-1	233	4.2	5E-04	1E-05	49	1.3	2E-04	7E-06	112	2.2	4E-05	1E-06
IA-2	27	12	6E-05	3E-05	5.4	2.7	2E-05	1E-05	13	6.0	5E-06	2E-06
IA-3	29	4.3	8E-05	1E-05	7.6	1.0	4E-05	5E-06	15	2.1	7E-06	8E-07
IA-4	71	21	2E-04	5E-05	18	4.7	9E-05	2E-05	36	10	2E-05	4E-06
IA-5	13	6.0	3E-05	1E-05	2.5	1.3	1E-05	6E-06	6.2	2.9	2E-06	1E-06
IA-6	6.9	4.5	1E-05	1E-05	1.1	1.0	4E-06	5E-06	3.2	2.2	8E-07	9E-07
IA-7	48	17	8E-05	4E-05	8.3	3.8	3E-05	2E-05	22	8.5	7E-06	3E-06
IA-8	28	15	4E-05	4E-05	4.3	3.3	2E-05	2E-05	13	7.4	3E-06	3E-06
IA-9	1.9	1.0	3E-06	3E-06	0.3	0.2	1E-06	1E-06	0.9	0.5	2E-07	2E-07
IA-10	1.7	0.3	3E-06	9E-07	0.3	0.1	1E-06	4E-07	0.8	0.1	3E-07	7E-08
IA-11	0.0	0.0	6E-10	5E-09	0.0	0.0	2E-10	2E-09	0.0	0.0	2E-11	4E-10
IA-12	2.6	2.8	4E-06	7E-06	0.4	0.6	2E-06	3E-06	1.2	1.4	3E-07	5E-07
IA-13	0.7	0.3	1E-06	9E-07	0.1	0.1	6E-07	4E-07	0.4	0.1	1E-07	7E-08
SLAPS	22	7.4	5E-05	2E-05	4.6	1.6	2E-05	8E-06	11	3.6	4E-06	1E-06

VP = vicinity property
IA = investigation area
All doses in units of mrem/y

Recreational/trespasser use applicable for Coldwater Creek;

- Construction and trespasser scenario applies to SLAPS (including IA-1 through IA-7), HISS, and Futura; and

- Construction/utility and maintenance worker use assumed for the railroads, including IA-12 (Railroad area south of SLAPS to Banshee Road), and road right-of-ways, including IA-8 (under and along McDonnell Boulevard at SLAPS).

Under current use conditions (including existing restrictions), the radiological results shown in Table D-4b indicate that the risks are often above the 10^{-6} point of departure, but are within the CERCLA target risk range for radionuclides[1]. Specifically, recreational/trespasser risks do not exceed the range for Coldwater Creek, SLAPS, HISS, and Futura; maintenance worker risks do not exceed the range for VPs, the railroads, and road right-of-ways; industrial worker risks do not exceed the range for the VPs; and construction worker risks do not exceed the range for the railroads and road right-of-ways. Risks above the CERCLA target risk range could occur for the likely future industrial land use at some properties (see the industrial risk values for the IA units, Futura, and SLAPS). If residential development is assumed, risks at HISS, several of the IAs, and the most contaminated of the VPs could exceed the risk range.

The highest calculated dose results under current conditions are: 49 mrem/yr for the recreational/trespasser (IA-1); 28 mrem/yr for the maintenance worker (IA-8); 17.5 mrem/yr for the industrial worker (highest VP); and 325 mrem/yr for the construction worker (IA-8). When assessing potential future conditions, radiological doses for industrial and construction workers range from tens to several hundred mrem/yr. If the properties revert to residential use, doses could exceed 1,000 mrem/yr in IA-1 and IA-4. Results in Table D-4b indicate that under future use conditions, risks could exceed limits and dose guidelines for residential, industrial, and construction users on several properties.

Surface soil non-radiological risks and hazards are shown for each property and depth grouping in Attachment 13. Table D-5 summarizes the results listed in Attachment 13 into major groupings (e.g., VPs, SLAPS, etc.). Eleven metals (with locations in parentheses) are identified as surface soil COPCs: antimony (IA-3 and HISS), arsenic (Futura, HISS, IA-2, IA-4, and SLAPS), barium (Futura, HISS, IA-4, IA-7, and SLAPS), cadmium (HISS and IA-3), chromium (IA-3 and SLAPS), molybdenum (Futura, HISS, and IA-7), nickel (Futura, HISS, IA-4, IA-7, and SLAPS), selenium (Futura, HISS, and IA-7), thallium (HISS), uranium (IA-3 and IA-4), and vanadium (Futura, HISS, IA-2, IA-7, and SLAPS). Total risks (i.e., risks across all non-radiological PCOCs) exceed 1×10^{-4} for the industrial worker at HISS and for the resident at HISS, Futura, and IA-2. No other risks exceed 1×10^{-4}. The hazard index (i.e., sum of the hazard quotients across all appropriate pathways and across all PCOCs) exceeded unity for only the following receptor/properties:

1. Note that while EPA generally defines the CERCLA target risk range as 1×10^{-6} to 1×10^{-4} for non-radiological contaminants, 3×10^{-4} may be considered an acceptable upper bound for radionuclides.

Table D-5. Summary of Surface Soil Risks and Hazards for Non-radionuclides by Property

Property Name	RESIDENTIAL SCENARIO		INDUSTRIAL SCENARIO		CONSTRUCTION SCENARIO		MAINTENANCE SCENARIO		RECREATIONAL TRESPASSER SCENARIO	
	Chemical Hazard	Chemical Risk	Chemical Hazard	Chemical Risk	Chemical Hazard	Chemical Risk	Chemical Hazard	Chemical Risk	Chemical Hazard	Chemical Risk
VPs (highest value)	0.2		<0.1		0.5		<0.1		<0.1	
VPs (average value)*	0.2		<0.1		0.5		<0.1		<0.1	
Road Right-of-way	0.9	3E-05	0.3	6E-06	1.3	2E-06	0.1	2E-06	<0.1	3E-07
HISS	12.6	1E-03	3.5	3E-04	20.0	1E-04	2.0	7E-05	0.5	1E-05
Futura	4.7	4E-04	1.4	9E-05	11.8	3E-05	1.2	2E-05	0.2	5E-06
IA-1	<0.1	5E-07	<0.1	2E-07	<0.1	4E-08	<0.1	2E-08	<0.1	1E-08
IA-2	1.8	3E-04	0.5	6E-05	4.6	2E-05	0.5	2E-05	<0.1	3E-06
IA-3	2.5	5E-06	0.9	1E-06	1.9	1E-07	0.1	8E-08	0.2	2E-08
IA-4	0.8	6E-05	0.2	1E-05	1.7	5E-06	0.2	4E-06	<0.1	7E-07
IA-5	0.3	2E-05	<0.1	4E-06	0.5	2E-06	<0.1	1E-06	<0.1	2E-07
IA-7	1.5		0.4		3.7		0.4		<0.1	
IA-8	0.1	2E-05	<0.1	4E-06	0.3	1E-06	<0.1	8E-07	<0.1	3E-07
IA-9	0.3	3E-05	0.1	7E-06	0.9	2E-06	<0.1	2E-06	<0.1	4E-07
IA-10		6E-06		2E-06		5E-07		3E-07		1E-07
IA-13	0.2	2E-05	<0.1	5E-06	0.3	2E-06	<0.1	1E-06	<0.1	3E-07
SLAPS	1.4	8E-05	0.5	2E-05	2.4	7E-06	0.2	5E-06	<0.1	1E-06

VP = vicinity property
IA = investigation area
* Average value for all VP data combined. Note that the availability of data varies on a property by property basis.
Note: Chemical hazards and risks shown in this table include hazards and risks from uranium as a chemical.

The maintenance worker and industrial worker at HISS and Futura;

- The construction worker at the road right-of-way, HISS, Futura, IA-2 to IA-4, IA-7, and SLAPS; and

- The resident at HISS, Futura, IA-2, IA-3, IA-7, and SLAPS.

All surface soil COPCs may be linked to FUSRAP-related activities and are retained as COCs. Subsurface soil non-radiological risks and hazards for the construction worker are shown for each property in Attachment 14. Table D-6 summarizes the results listed in Attachment 14 into major groupings (e.g., VPs, SLAPS, etc.). Five non-radionuclide subsurface soil exceed risk criteria based on the evaluation of the construction worker's exposure to subsurface soil and are selected as COPCs. The COPCs are antimony (IA-10), arsenic (IA-2, IA-10, and road right-of-way), manganese (road right-of-way), thallium (IA-10), and uranium (IA-2). Of these, manganese was not identified above criteria on either SLAPS or HISS and, thus, is not considered FUSRAP-related. By eliminating manganese, arsenic is also eliminated (total hazard of 0.37) for road right-of-way leaving no non-radiological COPCs for the road right-of-way grouping. Total risks across all PCOCs were less than 1×10^{-4} for all properties, while total FUSRAP-related hazards exceed 1.0 for two areas (IA-2 and IA-10 have estimated hazards of 2.4 and 8.1, respectively). Subsurface COCs retained for SLAPS and contiguous properties (IAs 1-13), HISS/Futura, and Latty Avenue VPs 2L and 10k530087 include antimony, arsenic, thallium, and uranium.

Table D-6. Subsurface Soil Risks and Hazards for Non-radionuclides by Property

Property Name	Construction Worker Scenario	
	Chemical Hazard	Chemical Risk
VPs (highest value)	0.5	
VPs (average value)	0.5	
Road Right-of-way	1.2	2E-06
IA-2	2.4	1E-05
IA-3	0.4	5E-08
IA-4	0.3	2E-06
IA-5	0.2	1E-06
IA-7	0.5	
IA-9	0.3	2E-06
IA-10	8.1	4E-05
SLAPS	0.5	2E-06

Ground-water non-radiological risks and hazards are shown in Attachment 15. Six metals (arsenic, barium, fluoride, manganese, thallium, and uranium) and two organics [bis(2-ethylhexyl)phthalate and MCPP] are identified as COPCs for the drinking water pathway and the deep aquifer [hydrostratigraphic zone B (HZ-B)]. Risks and hazards in deep ground water are driven by MCPP, arsenic, manganese, and thallium. Although arsenic and manganese are present in ores in trace amounts, the lack of connection between the HZ-A unit and the deep aquifer precludes the presence of FUSRAP-related arsenic and manganese as COCs in the deep aquifer. There is no evidence that the presence of MCPP and thallium in the deep aquifer is a result of FUSRAP-related activities given both the lack of hydraulic connection and the fact that thallium is only present in trace amounts in the ores (MCPP is a herbicide with no ore-processing connection). If the three metals are removed from consideration, the risk and hazard would be

within the CERCLA risk range and have an HI < 1. Because the potential yield is very low for shallow ground water, it is not a source of potable drinking water, and no additional COCs are identified for ground water.

Attachment 16 displays the non-radiological risks and hazards for surface water. Several COPCs were identified in surface-water samples from Coldwater Creek. However, an evaluation of the data against background, risk, and hazard criteria indicates that the levels present are within the acceptable risk range. For that reason, no COCs were identified for surface water and surface water was not carried forward as a media of concern.

Sediment risks and hazards for radiological PCOCs are shown in Attachment 17. Radiological estimates show that the highest radiological risk under the recreational/trespasser scenario is 3×10^{-4}. These estimates are for the hot spot with the highest concentration of Th-230. However, a future scenario where no restriction is placed on public use of creek sediments in residential areas may pose a potential unacceptable risk to human health. Thus, radiological PCOCs for soil are retained as COPCs and COCs for sediments. Sediment risks and hazards for non-radiological PCOCs are shown in Attachment 18. Results for non-radionuclides indicate that one metal (arsenic) and five organics [benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene] are COPCs. Arsenic is below background adjacent to SLAPS and HISS (i.e., at Reach A). Arsenic concentrations increase with distance downstream, thus elevated arsenic in Reaches B and C is most likely due to the heavy industrial activity in the area and is not associated with site activities. Thus, arsenic is not considered to be a COC in sediment. Similarly, none of the five organics were identified above risk criteria in Reach A and, given the heavy industrial activity in the area, these organics are not considered to be the result of site activities and are not identified as sediment COCs. Only radionuclides are considered COCs for sediments.

A summary of COCs across all media and land uses is shown in Table D-7. COCs are limited to metals and radionuclides.

Results of the supplemental risk assessment show that there is a need for action at the North County Site, thus are in agreement with the original 1993 BRA. These results indicate that remedial action would be required based on radiological COCs alone, but non-radiological constituents could also produce unacceptable risk at some properties. In general, however, the risk from radionuclides is at least an order of magnitude above non-radiological risks. HISS is the exception where the residential risk is 1×10^{-3} for non-radionuclides and 5×10^{-4} for radionuclides.

The addition of radiological risk and chemical risk was evaluated as requested by EPA. However, as described in *Radiation Exposure and Risk Assessment Manual* (EPA, 1996a), there are several differences in radiological and non-radiological CSFs including the following:

- the radiological endpoint is fatal cancer – the constituent endpoint is tumorigenic cancer;

- radiological risk estimates are based primarily on human data – constituent risk estimates are based primarily on animal studies; and

- radiological risk estimates are based on the central estimate of the mean – many constituent risk estimates are based on 95% UCL of the mean.

Additional considerations include the fact that exposure point concentrations for radionuclides and non-radionuclides are specific to distinct models incorporating different assumptions.

Results indicate that in no case could an acceptable risk be changed to unacceptable by combining radiological and non-radiological results. Likewise, hazard results exceed limits on some sites where the radiological risk also exceeds limits. This suggests that the remediation of risk drivers (radionuclides) would be acceptable for the site.

Table D-7. Summary of Contaminants of Concern (COCs) by Land Use and Medium

COC	Land Use [a]				
	Residential Scenario	**Industrial Scenario**	**Construction Scenario**	**Maintenance Scenario**	**Recreational Scenario**
Inorganics					
Antimony	ss	ss	ss, sb		ss
Arsenic	ss	ss	ss, sb	ss	ss
Barium	ss		ss		ss
Cadmium	ss		ss		ss
Chromium	ss		ss		ss
Molybdenum			ss		
Nickel	ss	ss	ss	ss	ss
Selenium			ss		
Thallium	ss	ss	ss, sb	ss	ss
Uranium			ss, sb		
Vanadium	ss	ss	ss	ss	ss
Radionuclides					
Actinium-227	so, sd	so, sd	so, sd	so, sd	so, sd
Lead-210	so, sd	so, sd	so, sd	so, sd	so, sd
Protactinium-231	so, sd	so, sd	so, sd	so, sd	so, sd
Radium-226	so, sd	so, sd	so, sd	so, sd	so, sd
Radium-228	so, sd	so, sd	so, sd	so, sd	so, sd
Thorium-228	so, sd	so, sd	so, sd	so, sd	so, sd
Thorium-230	so, sd	so, sd	so, sd	so, sd	so, sd
Thorium-232	so, sd	so, sd	so, sd	so, sd	so, sd
Uranium-234	so, sd	so, sd	so, sd	so, sd	so, sd
Uranium-235	so, sd	so, sd	so, sd	so, sd	so, sd
Uranium-238	so, sd	so, sd	so, sd	so, sd	so, sd

[a] COCs are identified in the table by media codes within each land use:
ss = surface soil
sb = subsurface soil
sd = sediment (Note that sediments are generally protective, but are remediated to assure removals from small areas with elevated concentrations, and to assure long-term effectiveness under CERCLA, particularly with respect to their potential for relocation to adjacent residential property.)
so = soil (radionuclides only, all depths)

D.2 DERIVATION OF SITE-SPECIFIC REMEDIATION GOALS (RGs)

The remediation goals proposed for the North County Site comply with ARARs, are protective of human health and environment and are consistent with the NCP. They are protective under conditions of RME for residential site conditions (see Preamble to the final rule for 40 CFR 192 as specified in 48 FR 600 and the Final Environmental Impact Assessment). No directly applicable chemical-specific requirements are identified. Relevant and appropriate requirements are identified for radioactive contaminants in soil. Remediation goals for other contaminants in soil are derived using site-specific evaluations. Risk and dose assessments were also performed to assure protectiveness in light of multiple contaminants and multiple pathways (e.g., inhalation, ingestion, and direct exposure) at the North County Site. The remediation goal for Ra-226 is set forth in 40 CFR 192, Subpart B. Site-specific remediation goals for U-238 and Th-230 are derived in accordance with 10 CFR 40, Appendix A, Criterion 6(6) and 40 CFR 192, Subpart A.

No chemical-specific requirements were identified for non-radiological contaminants. Remediation goals were derived based on site-specific exposure assumptions, and with the objective of meeting the acceptable risk range as provided in the NCP. According to the NCP, acceptable exposure levels to known or suspected carcinogens are levels that represent an excess upper bound lifetime cancer risk to an individual of between one in 10,000 (10^{-4}) and one in 1,000,000 (10^{-6}). The EPA establishes preliminary remediation goals (PRGs) for all carcinogenic chemicals at the 10^{-6} level, also known as the point of departure. Final remediation goals may be different based on factors such as uncertainty, technical limitations on detection, or other considerations consistent with the remedy selection criteria defined in the NCP. In this case, practical limits on the ability to distinguish between naturally occurring background levels and very small increments above background require the use of final remediation goals that exceed the 10^{-6} level for some of the non-radiological contaminants; however, final cleanup levels remain within the acceptable risk range. Aggregate risks from final cleanup levels are also within the risk range. Remediation goals for non-carcinogens were developed to ensure that the cumulative toxic effects would result in a HI < 1.0.

The soil cleanup standards found in 40 CFR 192, Subpart B, were developed specifically for the cleanup of uranium mill tailings sites designated under Section 102 (a)(1) of the Uranium Mill Tailings Radiation Control Act (UMTRCA). These standards are intended to provide for unrestricted use of remediated properties. These standards address contaminants and circumstances similar to those found at the North County Site and are, therefore, considered relevant and appropriate to soil cleanup at the North County Site. The surface and subsurface soil criteria in 40 CFR 192, Subpart B for radium–226 are 5 and 15 pCi/g, respectively. The surface remediation goal applies to the 100 m^2 areal average concentration above background in the top 15 cm (6 in.) layer. The subsurface remediation goal applies to the 100m^2 areal average concentration above background in any subsequent 15 cm (6 in) layer. The Ra-226 remediation goal of 5 and 15 pCi/g in surface and subsurface soils has been used with St Louis sites pursuant to the Record of Decision for the St Louis Downtown Site and to Engineering Evaluation/Cost Analyses for the St Louis North County Site. Implementation of the subsurface remediation criterion for Ra-226 results in actual average residual concentrations of Ra-226 significantly less than 5 pCi/g. This is based on cleanup results of a number of different areas and properties within the St Louis North County Site and St Louis Downtown Site, using cleanup goals of 15 pCi/g subsurface criterion for Ra-226 in combination with subsurface remediation goals of

15 and 50 pCi/g for Th-230 and U-238, respectively. Table D-9 (Section D.2.1) lists the residual radionuclide concentrations at properties where response actions have been completed.

The site-specific Th-230 and U-238 remediation goals are derived based on the 10 CFR 40, Appendix A, Criterion 6(6), also referred to as the benchmark dose approach. These requirements supplement the standards found in 40 CFR 192.

The U-238 goal was established using U-238 as a surrogate for all of the uranium isotopes (including U-234 and U-235) and certain uranium decay products. Using the U-238 as a surrogate, the residual concentration was determined to be about 81 pCi/g. However, since some of the decay products are present above the natural abundance, the site-specific remediation goal of 50 pCi/g for U-238 is considered appropriate. Site experience shows that a 50 pCi/g limit is reasonably achievable at little extra cost. This limit has been used on the St Louis North County Site for removal actions conducted by USACE and the DOE since 1991 and is the site-specific remediation goal for U-238 established in the Record of Decision for the St Louis Downtown Site.

Table D-11 in Section D2.2.2 presents the calculation resulting from 10 CFR Part 40, Appendix A, Criterion 6(6) and lists the most restrictive Th-230 concentration as 330 pCi/g. This concentration, although protective with respect to Th-230, would result in the in-growth of Ra-226 such that future concentrations of Ra-226 would exceed the limits specified in ARARs. 40 CFR 192.02(a) requires the selected remedial action be designed to be effective for up to 1000 years to the extent reasonably achievable, and in any case, for at least 200 years. To ensure ARAR is met, the in-growth of Ra-226 from the Th-230 decay process must be calculated and examined. A soil concentration of 14 pCi/g of Th-230 would result in the in-growth of 5 pCi/g Ra-226 concentration at the end of the 1000-year time period stated in 40 CFR 192.02(a). Although a subsurface soil concentration of 43 pCi/g would result in the in-growth of 15 pCi/g Ra-226, EPA's guidance documents for the cleanup of CERCLA sites using 40 CFR 192 as ARAR set forth EPA's expectation that remediation of subsurface soil contamination will, in practice, achieve the surface cleanup criterion of 5 pCi/g for Ra-226. (See OSWER 9200.4-25, "Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites). EPA approval of the ROD is contingent upon satisfying EPA's expectations for cleanup of CERCLA sites; therefore, USACE has adopted, on a site-specific basis, Th-230 surface and subsurface soil cleanup levels that are consistent with a residual Ra-226 concentration of 5 pCi/g. Constraining the concentration of Th-230 in surface soils to 14 pCi/g and subsurface soils to 15 pCi/g along with the use of the unity rule assures that the concentration of Ra-226 does not exceed 5 pCi/g during the 1000-year time period.

No remediation goal is developed for Th-232. Removal of Th-230 to the remediation goals will effectively remove Th-232 present in site soils. Analytical data indicate that Th-232 is co-located with Th-230 and is present at relatively low concentrations. Removal of soils to the radionuclide criteria results in Th-232 concentrations of less than 1.5 pCi/g including background for SLAPS, SLDS, and North County VPs. Residual concentrations do not produce risks significantly above background.

Remediation goals for radiological contaminants of concern for the St Louis North County Site soils are 5/14/50 pCi/g for Ra-226, Th-230 and U-238 in surface soils and 15/15/50 pCi/g for subsurface soils. These remediation goals are consistent with the remediation standards used in Engineering Evaluation/Cost Analyses (EE/CAs) by DOE prior to transfer of

FUSRAP execution to USACE, in USACE EE/CAs, and in local Records of Decision both at the St Louis Downtown Site and by DOE at Weldon Spring Site Remedial Action Project. These remediation goals meet the threshold criteria of overall protection of human health and the environment and compliance with ARARs and will achieve a final status that requires no restrictions on land use. Remediation goals for use in limited circumstances (e.g. Coldwater Creek sediments and supplemental standards for use with containment and treatment alternatives) are developed in Sections D.2.2.2 and D.2.2.3.

D.2.1 OVERALL PROTECTIVENESS

EPA defines protectiveness primarily in term of carcinogenic risk and non-carcinogenic hazard. Any remedial alternative that limits contaminants to concentrations producing a carcinogenic risk less than 1 in 1,000,000 (1×10^{-6}) and an HI $\leq$ 1.0 is considered a protective alternative. The 1×10^{-6} risk level is called the point of departure and is the initial cleanup goal for all EPA sites. However, 1×10^{-6} may not be achievable for a particular contaminant or site, or if there are multiple contaminants at the site. Movement away from the point of departure is allowed based on consideration of the CERCLA criteria, e.g. protectiveness and implementability. The range of acceptable risk is referred to as the CERCLA target risk range. A remedial alternative is protective assuming the point of departure is unachievable if the total risk from exposure to all contaminants is within the CERCLA target risk range and the total hazard is less than 1.0.

At the North County Site, no ARARs have been identified for the non-radiological contaminants. Thus, given that total risks exceed the CERCLA target risk range, each contaminant requires evaluation against the 1×10^{-6} risk level and an HI $\leq$ 1.0 pursuant to CERCLA. For North County Site properties, if the total risk for a specified receptor and medium exceeds 10^{-4}, any FUSRAP-related contaminant with a risk greater than 10^{-6} is considered a COC. Similarly, if the total hazard for a specified receptor and medium exceeds 1.0, any FUSRAP-related contaminant with an HI > 0.1 is considered a COC.

With respect to risk, the primary contaminants at the North County Site are the naturally occurring isotopes of the thorium, uranium and actinium decay series. Background concentrations of many of these radionuclides produce risks well above 1×10^{-6}. In addition, there are limits to the ability to detect these contaminants in the environment. Therefore movement away from 1×10^{-6} is justified by the NCP in Title 40 Code of Federal Regulations (CFR) 300.430(e)(2). Remediation goals must therefore be derived that produce acceptable total risks that are achievable. The establishment of achievable goals for these radionuclides hinges primarily on the ability to detect these contaminants using field and laboratory analyses.

A range of radionuclide concentrations and risk levels is presented in Table D-8 for industrial and residential receptors. These scenarios are provided because they represent the maximum-exposed individuals for most properties in the North County Site. The background screening criteria (UTL) for the North County Site and typical field detection limits are also listed in Table D-8. As shown in Table D-8, measuring concentrations of radionuclides corresponding to the 10^{-6} risk level is not achievable for radionuclides at the North County Site. These concentrations are often within the range of background and below detection limits, and movement away from the 10^{-6} point of departure is justified.

Table D-8 shows that the field detection limits for Ra-226 and Th-230 (2.8 and 2120 pCi/g, respectively) correspond to an incremental residential risk on the order of 10^{-4}. The field detection limit for U-238 (39 pCi/g) corresponds to a residential incremental risk on the order of 10^{-5}. At the North County Site, Ra-226, Th-230, and U-238 are the radionuclides found at the highest concentrations. Remediation of the North County Site is somewhat limited by the ability to detect Th-230 and Ra-226 in the field either directly or through a surrogate. It is also noted that laboratory detection limits for these radionuclides are at best around 1.0 pCi/g each, or at levels that would produce a total risk on the order of 10^{-4}. Subsequently, remediation is limited by the ability to identify contamination both in the field and in the laboratory.

Table D-8. Comparison of Relevant Soil Concentrations for Radionuclides

Receptor	Analyte	Units	Background UTL_{95}	Detection Limit [a]	Soil Concentration by Risk Level			
					$1x10^{-6}$	$1x10^{-5}$	$1x10^{-4}$	$3x10^{-4}$
Industrial	Ac-227	pCi/g	0.82 [b]	-	0.98	9.8	98	294
Industrial	Pa-231	pCi/g	2.17 [b]	-	1.9	19	190	570
Industrial	Pb-210	pCi/g	1.55 [c]	-	15	150	1500	4500
Industrial	Ra-226	pCi/g	1.55	2.8	0.071	0.71	7.1	21
Industrial	Ra-228	pCi/g	1.24	-	0.15	1.5	15	45
Industrial	Th-228	pCi/g	2.04	-	0.53	5.3	53	159
Industrial	Th-230	pCi/g	2.89	2120	11	110	1100	3300
Industrial	Th-232	pCi/g	1.83	1.8 [d]	0.072	0.72	7.2	22
Industrial	U-234	pCi/g	2.22	-	170	1700	17000	51000
Industrial	U-235	pCi/g	0.25	-	1.8	18	180	540
Industrial	U-238	pCi/g	2.02	39	7.3	73	730	2190
Residential	Ac-227	pCi/g	0.82 [b]	-	0.3	3.0	30	90
Residential	Pa-231	pCi/g	2.17 [b]	-	0.5	5.0	50	150
Residential	Pb-210	pCi/g	1.55 [c]	-	1.8	18	180	540
Residential	Ra-226	pCi/g	1.55	2.8	0.019	0.19	1.9	5.7
Residential	Ra-228	pCi/g	1.24	-	0.048	0.48	4.8	14.4
Residential	Th-228	pCi/g	2.04	-	0.16	1.6	16	48
Residential	Th-230	pCi/g	2.89	2120	2.4	24	240	720
Residential	Th-232	pCi/g	1.83	1.8 [d]	0.018	0.18	1.8	5.4
Residential	U-234	pCi/g	2.22	-	25	250	2500	7500
Residential	U-235	pCi/g	0.25	-	0.5	5	50	150
Residential	U-238	pCi/g	2.02	39	1.9	19	190	570

[a] Limits for surface scanning using a 2-inch by 2-inch NaI detector (NUREG 1507)

[b] No reported result above detection limits. Background likely similar to that of U-235

[c] No value reported. Assumed to be in equilibrium with Ra-226, the nearest long-lived parent radionuclide

[d] Assumed to be in equilibrium with Ra-228 and Th-228

Ra-226 can be used as a surrogate for other FUSRAP-related radionuclides including Th-230 and U-238. Cleanup under non-time-critical removal actions is currently underway at the North County Site based on cleanup criteria for Ra-226 and Th-230 of 5 pCi/g above background in surface and 15 pCi/g in the subsurface (5/15 pCi/g), and U-238 of 50 pCi/g above background in all soil horizons. Remediation under the SLDS Record of Decision (ROD) is also underway using the same criteria. The results in Table D-9 demonstrate that removal to this criteria reduces Ra-226, Th-230, Th-232, and U-238 concentrations to levels comparable to background. These removal actions have been implemented by removing soils with gamma radiation levels (produced primarily by Ra-226) that are just barely distinguishable from background (limited by the sensitivity of the instrumentation and the skill of the surveyor) and correlated to isotopic activity. In most cases, remediation to lower levels could significantly increase cost by excavating soils very difficult to distinguish from background without significantly decreasing risk. At the levels shown in Table D-9, total risk estimates are around 10^{-4} for a residential scenario or on the order of 10^{-5} for an industrial scenario. In other words, residual concentrations

do not produce risks significantly above background. The results shown in Table D-9 also demonstrate that cleanup using the 15 pCi/g Ra-226 criterion in subsurface soil and using Ra-226 as a surrogate for other radionuclides has achieved gross residual Ra-226 concentrations of less than 5 pCi/g for several St. Louis FUSRAP removal actions.

The information in Tables D-8 and D-9 demonstrates that remediation of Ra-226 to 5/15 pCi/g above background, and the use of Ra-226 as a surrogate for other radionuclides would achieve residual concentrations of all radionuclides that can be implemented and would produce acceptable total risk. A cleanup goal of 5/15 pCi/g for Ra-226 would be achievable based on USACE/FUSRAP experience in St. Louis, and would be protective considering the typical residual concentrations listed in Table D-9.

Very limited concentrations of Th-232 were present within the St. Louis North County Site. Removal of Th-230 to the remediation goals will effectively remove Th-232 present in site soils. Analytical data indicate that Th-232 is co-located with Th-230 and is present at relatively low concentrations. As shown in Table D-9, removal of soils to the radionuclide criteria results in gross residual Th-232 concentrations of less than 1.5 pCi/g. SLAPS, SLDS, and the North County VPs. These residual concentrations do not produce risks significantly above background.

In summary, remediation of Ra-226 to 5 pCi/g above background (surface) and 15 pCi/g (subsurface); and of Th-230 to 14 pCi/g above background (surface) and 15 pCi/g (subsurface) is achievable and protective based on site experience. Characterization data and analytical results from previous removal actions indicate that the radionuclides generally dominate the FUSRAP-related risks. In addition, removal of soils to the radionuclide criteria results in residual risks and hazards from non-radionuclides that are only a small fraction of the radionuclide related risks and within the acceptable risk and hazard range. Table D-10 provides post-cleanup data for the 11 non-radionuclide COCs for the North County Site. The RGs are also presented in the Table for comparison.

DOE collected radon data from within the Futura buildings (BNI, 1987). Radon results range from 0.3 to 0.7 pCi/L with an average of 0.6 pCi/L indicating that indoor radon levels are well below the 4.0 pCi/L guideline. Radon could increase over time as Ra-226 approaches Th-230 concentrations. However, Ra-226 ingrowth would likely not be a concern until well after the site buildings have completed their life cycles. Radon monitoring should continue as long as the buildings are erect and contaminants above the unconditional release criteria are present beneath the structures.

Table D-9. Post-Cleanup Summary Data (Including Background) from Remedial and Removal Actions under St. Louis FUSRAP

Survey Unit	Residual Ra-226 (pCi/g)[a]		Residual Th-230 (pCi/g)[a]		Residual Th-232 (pCi/g)[a]		Residual U-238 (pCi/g)[a]	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
City Property Unit 1	2.49	1.27	4.99	3.21	1.03	0.28	3.05	1.20
City Property Unit 2	2.26	1.38	4.26	3.37	1.09	0.28	2.68	1.81
City Property Unit 3	1.97	0.48	5.20	3.02	1.19	0.46	2.79	1.16
City Property Unit 4	1.90	1.89	3.90	3.77	0.97	0.37	3.18	4.67
City Property Unit 5	2.76	1.12	4.52	1.82	1.14	0.40	7.12	6.07
City Property Unit 6	2.18	0.63	4.60	2.46	1.10	0.24	2.74	1.09
City Property Unit 7	2.07	1.18	3.97	2.48	0.93	0.32	5.52	3.99
City Property Unit 8	2.22	1.28	4.93	3.08	0.92	0.34	8.82	10.14
City Property Unit 9	2.75	3.17	3.42	1.44	0.78	0.50	7.64	12.29
Plant 2 Unit 1A	1.0	0.36	2.7	2.8	1.1	0.4	15.6	19.9
Plant 2 Unit 1B	1.0	0.42	2.4	1.3	1.0	0.3	16.6	22.2
Plant 2 Unit 1C	1.5	0.92	2.5	1.9	1.0	0.4	8.4	8.9
Plant 2 Unit 3	1.0	0.43	2.5	2.2	0.8	0.4	1.8	2.0
Plant 2 Unit 4	0.9	0.18	2.0	0.91	0.9	0.2	1.5	0.65
Plant 2 Unit 5	0.9	0.45	1.7	0.85	1.0	0.6	1.6	0.92
Plant 2 Unit 6	1.1	0.31	1.9	0.85	0.9	0.3	3.3	6.0
Plant 2 Unit 7	1.3	0.75	2.2	1.5	1.0	0.5	4.2	8.8
Plant 2 Unit 8	1.1	0.64	1.9	1.1	0.9	0.4	3.7	6.1
Plant 2 Unit 9	1.3	0.56	2.5	0.91	1.1	0.3	2.9	1.8
Plant 2 Unit 10	1.1	0.52	2.5	1.5	1.3	1.2	2.1	1.5
Plant 2 Unit 11	1.0	0.3	2.0	0.62	1.0	0.3	1.6	0.8
SLDS Background[b]	*2.78*	*0.89*	*1.94*	*0.76*	*1.09*	*0.29*	*1.44*	*0.75*
IA-7 Unit 1	0.75	0.10	5.65	4.68	1.30	0.33	1.40	0.67
IA-7 Unit 2	0.75	0.08	3.74	3.47	1.39	0.35	1.07	0.41
IA-7 Unit 3	1.12	1.65	5.07	3.94	1.39	0.35	2.37	2.9
IA-7 Unit 4	0.83	0.09	3.32	3.50	1.08	0.23	1.21	0.50
East End Unit 5	0.85	0.11	3.43	3.64	1.02	0.22	1.82	0.96
East End Unit 6	0.74	0.06	1.67	0.30	1.02	0.21	3.10	2.15
East End Unit 22	0.90	0.10	4.5	3.67	1.01	0.20	1.50	0.78
North Ditch Unit 1	0.83	0.13	4.19	2.92	1.28	0.29	1.56	0.96
North Ditch Unit 2	0.84	0.13	4.11	4.28	1.00	0.27	1.14	0.75
Radium Pit Unit 17	0.85	0.33	6.71	16.73	0.92	0.16	5.01	4.01
Radium Pit Unit 18	0.75	0.18	1.97	2.93	0.94	0.26	8.45	13.40
Radium Pit Unit 19	0.94	0.28	7.91	11.56	1.15	0.24	4.07	2.12
Radium Pit Unit 20	0.81	0.19	2.47	1.55	1.10	0.23	5.96	4.88
VP2L Unit 1	0.93	0.10	3.32	3.14	1.15	0.29	1.14	0.45
VP38 Unit 1	0.83	0.87	5.00	8.20	1.04	0.24	1.11	0.47
VP56 Unit 1	0.97	0.35	13.93	30.24	1.05	0.22	1.24	0.64
VP56 Unit 2	1.07	0.17	13.03	14.14	1.11	0.85	1.23	0.67
VP56 Unit 3	0.82	0.07	6.03	8.73	1.14	0.24	1.06	0.39
North County Background[b]	*1.05*	*0.27*	*1.66*	*0.49*	*1.11*	*0.35*	*1.18*	*0.33*

[a] All values are gross results (include background). A comparison against the respective background concentrations shows that subtraction of background would result in negative values in some cases.
[b] SLDS background different from North County Background (provided for comparison to final status survey data which includes background).

Table D-10. Post-Cleanup Non-Radionuclide Summary Data (Including Background) from Remedial and Removal Actions under St. Louis FUSRAP (mg/kg)

Survey Unit	Antimony		Arsenic		Barium		Cadmium		Chromium		Molybdenum		Nickel		Selenium		Thallium		Uranium		Vanadium	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
SLDS Plant 2	-	-	12.9	8.9	-	-	0.6	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
East End Unit 1	4.4[1]	0.0	5.9	1.6	113	14.8	0.5[1]	0.0	14.5	0.5	0.9[1]	0.0	21.6	2.4	0.4	0.1	1.1	0.0	16.4[1]	0.1	23.3	1.1
East End Unit 2	13.6[1]	13.2	12.4	5.7	213	26.9	1.4[1]	1.4	16.5	4.3	2.9	2.3	32.9	11.6	0.3[1]	0.0	2.1[1]	0.4	50.2[1]	48.9	32.3	7.5
East End Unit 3	13.8[1]	12.2	13.0	6.6	224	121	1.5[1]	1.3	19.0	4.1	2.9	2.1	44.0	30.1	0.4	0.1	2.6	1.3	50.8[1]	45.4	36.3	13.0
East End Unit 4	0.6	0.0	17.4	3.2	254	25	0.0[1]	0.0	19.8	3.0	0.5[1]	0.3	35.3	10.4	1.0	0.2	0.7	0.4	2.6[1]	0.1	42.3	1.8
East End Unit 5	0.4	0.1	8.9	5.6	128	69	0.0[1]	0.0	15.8	2.1	0.9	0.6	26.2	10.5	0.6[1]	0.3	0.3[1]	0.0	12.6	14.3	26.6	6.5
East End Unit 6	0.4[1]	0.1	7.2	1.3	105	57.4	0.3[1]	0.3	14.3	3.2	0.7[1]	0.3	15.9	5.9	0.7[1]	0.4	0.2[1]	0	1.8[1]	0	24.0	3.0
North Ditch Unit 1	2.9	1.9	7.8	1.4	188	53.1	0.5	0.3	20.4	9.9	3.7	4.1	16.9	5.4	1.5	1.4	2.7	1.9	8.2	1.0	23.4	5.3
North Ditch Unit 2	4.5	0	6.3	0.8	116	27.1	0.5	0	14.8	0.8	0.9	0	19.9	3.0	0.4	0.1	1.3	0	-	-	28.7	0.5
Radium Pits Unit 17	0.3[1]	0	17.1	13.9	120	7.1	0.7[1]	0.1	15.6	0.5	2.0	0.9	18.4	1.1	0.9[1]	0.6	1.2	0.3	11.9	10.3	29.4	4.2
Radium Pits Unit 18	0.4[1]	0	13.7	12.7	233	33.9	0.6	0.2	13.7	0.9	3.4	3.5	18.5	1.0	2.2	1.3	0.4[1]	0	6.1	3.8	26.4	5.8
Radium Pits Unit 19	1.3[1]	0	8.6	0	132	0	0.5[1]	0	14.2	0	0.8[1]	0	19.2	0	1.6	0	0.4[1]	0	3.6[1]	0	29.4	0
Radium Pits Unit 20	0.4	0	13.9	9.8	154	27.6	0.7	0.2	16.3	1.7	0.8	0.2	17.3	2.3	0.3	0.1	0.4[1]	0	12.9	13.2	33.7	7.2
VP2L Unit 1	0.6	0.2	13.3	0.5	212	55.2	1.0[1]	0	20.6	0.8	0.4[1]	0.2	26.5	3.3	0.3[1]	0	1.1[1]	0.2	4.3[1]	0.1	41.6	1.4
RGs	15		36		2800		12		350		1000		1500		300		25		150		112	

- No data available.
[1]Results reported as less than minimum detection by laboratory.

Table D-11. Concentrations of North County Radionuclides that would Result in the 5 pCi/g Radium Benchmark Dose as Required by 10 CFR Part 40 Appendix A Criterion 6(6)

Analyte	Typical Conditions [a]	Concentrations to Produce Benchmark Based on 5 pCi/g of Ra-226 (pCi/g) [b]					
		Residential Scenario	Industrial Scenario	Maintenance Scenario	Recreational Scenario	Construction Scenario	Utility Scenario
Ac-227	4.2	14	18	9.5	20	11	10
Pa-231	4.6	43	78	21	110	27	26
Ra-226[c]	40	5.0	5.0	5.0	5.0	5.0	5.0
Th-230	222	670	1100	330	1500	380	380
$Th\text{-}230_k$ [d]	-	14	14	14	14	14	14
U-234	40	1500	2500	680	3500	810	800
U-235	1.4	73	73	81	72	77	75
U-238	40	340	560	300	370	310	300
U-238[e]	84	120	140	81	160	89	88
Ra-226 Benchmark Dose [f,g]		19	5.9	1.1	0.32	14	0.55

[a] Based on pre-remediation data averaged over the SLAPS subsurface. Used to demonstrate typical radionuclide distributions in the North County. Units are pCi/g.
[b] Values greater than 1.0 pCi/g rounded to two digits.
[c] Assumes equilibrium conditions with Pb-210.
[d] $Th\text{-}230_k$ value provided to limit ingrowth of Ra-226 over 1,000 years.
[e] Uranium at natural abundance concentration with Ac-227 and Pa-227 in equilibrium with U-235.
[f] Benchmark in units of dose (mrem/yr). Doses rounded to two significant digits.
[g] Benchmark doses for 15 pCi/g of Ra-226 would equate to values three times those specified above for 5 pCi/g of Ra-226.

D.2.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

ARARs were reviewed for COCs identified at the North County Site. No ARARs were identified for the non-radionuclide contaminants, but ARARs were identified for the North County Site to address radionuclide COCs. The proposed ARARs for the radionuclides addressed in this response action include Title 40 Code of Federal Regulations Part 192 (40 CFR 192), Subparts A, B and C; and 10 CFR 40, Appendix A, Criterion 6(6).

40 CFR 192 Subpart A defines the "standards for control of residual radioactive materials from inactive uranium processing sites." This section sets several standards that provide protection for stabilized residual materials disposal areas at uranium processing sites. 40 CFR 192.02(a) states that control of residual radioactive materials must be designed to be effective for up to 1000 years to the extent achievable, and in any case, for at least 200 years.

Subpart B identifies EPA's standards for remedial actions of lands and buildings contaminated with residual radioactive materials at inactive uranium processing sites and provides cleanup standards for Ra-226 in soil, among other things.

Subpart C provides regulations for the implementation of standards established in Subparts A and B. Among other things, it sets forth conditions appropriate for the development of supplemental standards. Supplemental standards are derived pursuant to 40 CFR 192 Subpart C for subsurface materials at the primary storage areas (i.e., SLAPS and HISS/Futura) for use with the containment and treatment alternatives. The supplemental standards are appropriate in accordance with 40 CFR 192.21 (c) which specifies that supplemental standards may be applied under circumstances that would result in excessive remedial action costs relative to the long-term benefits and where the residual radioactive materials do not pose a clear present or future hazard. The supplemental standards for the primary storage areas in the containment and treatment alternatives (Alternatives 2 and 3) are to be used in conjunction with institutional controls.

10 CFR 40, Appendix A is the Nuclear Regulatory Commission's (NRCs) regulations for active uranium processing sites, and these regulations conform to the standards set by EPA in 40 CFR 192. Criterion 6(6) is the NRC's process for developing RGs for other radionuclides to be consistent with the Ra-226 limits. 10 CFR 40, Appendix A, Criterion 6(6) is used in the North County Site as an ARAR to derive cleanup goals for non-radium radionuclides, particularly uranium and thorium, which are not explicitly included in EPA's 40 CFR 192 standards. In addition, this criterion requires the use of the unity rule when multiple contaminants are present. The unity rule sums the ratio of the residual concentration to remediation goals for each radiological contaminant of concern. Criterion 6(6) also provides relevant and appropriate radiological criteria for decommissioning lands and structures associated with uranium recovery facilities.

Criteria which are the basis of ARARs (40 CFR Part 192 and 10 CFR Part 40) are protective for all future anticipated land uses. This protectiveness has been upheld by judicial action.

A general description of these ARARs as they apply to the North County Site is provided below, followed by a discussion on implementation and overall protectiveness.

D.2.2.1 40 Code of Federal Regulations (CFR) Part 192

Soil criteria under 40 CFR Part 192, implemented by EPA pursuant to the Uranium Mill Tailings Radiation Control Act (UMTRCA), were developed for the control of residual radioactive material at designated processing or depository sites and properties in the vicinity of such sites. Although not applicable to the North County Site, 40 CFR Part 192 Subparts A, B, and C have been determined to be relevant and appropriate for the North County Site as conditions are sufficiently similar to designated UMTRCA sites.

Standards specified in Subpart B (40 CFR 192.12) apply to lands that are part of an UMTRCA site, including VPs, and explicitly limit the allowable concentration of Ra-226 in soil. Subpart B specifies that Ra-226 concentrations shall not exceed the background level by more than 5 pCi/g in the first 15 cm (6 in) below the surface or 15 pCi/g averaged over any subsequent 15 cm (6 in) layer. These concentration limits are averaged over an area of 100 m^2. As noted above, EPA promulgated the radium standard for uranium recovery sites similar to the St. Louis Site (including SLDS and the North County Site). The remediation criteria in Subpart B were developed for Ra-226 at UMTRCA sites "since Ra-226 is in equilibrium with other nuclides which would be present," and the "establishment of criteria which limits the amount of Ra-226 contamination also assures that other potential contaminants would be limited to an acceptable level" (May 1978 Staff Technical Position from the Fuel Processing and Fabrication Board titled "Interim Land Cleanup Criteria for Decontamination"). Subpart B is relevant and appropriate for properties at the North County Site.

Requirements specified in Subpart A apply to the control of residual radioactive material at UMTRCA sites. The design period requirement of Subpart A is considered relevant and appropriate for the development of site-specific soil RGs for the North County Site. Subpart A requires in §192.02(a) that controls for residual radioactive materials and listed constituents shall be effective for up to 1000 years to the extent reasonably achievable, and, in any case, for at least 200 years. Application of this design requirement in the development of RGs for radionuclides other than Ra-226 assures that the ingrowth of Ra-226 from the Th-230 decay process will not exceed the Ra-226 standard set forth in Subpart B during the 1000-year design period.

Subpart C includes guidance for implementation (40 CFR 192.20) and criteria for applying supplemental standards (40 CFR 192.21). Subpart C's guidance for implementation is discussed below in Section D.2.3. Supplemental standards are discussed in the following text.

Supplemental standards in 192.21 are allowed if the following circumstances exist:

- Remedial actions would pose a clear and present risk of injury to workers or members of the general public;
- The estimated remediation cost is unreasonably high and residual materials do not pose a clear present or future hazard; and
- Radionuclides other than Ra-226 pose a significant hazard (one North County Site example is uranium in slag). Non-radium radionuclide contaminants are addressed under the discussion on 10 CFR 40 in Section D.2.2.2).

Subpart C lists other reasons for developing supplemental standards, but the listed reasons provided above are most relevant to the North County Site. Supplemental standards are appropriate for some areas in the North County Site and for some conditions (i.e., when controls to restrict the use of subsurface soils are in place).

The derivation of supplemental standards to address radionuclides other than Ra-226 would be required for the North County Site if not for the recently appended and promulgated Appendix A Criterion 6(6) from 10 CFR Part 40. Appendix A Criterion 6(6) from 10 CFR Part 40 is an ARAR, and will be used to develop site-specific criteria for radionuclides corresponding to that specified in UMTRCA. The following subsection includes the derivation of non-radium concentration limits for unrestricted release.

40 CFR Part 192 Subpart B also contains limits for radon decay products (the radon isotope Rn-222 is the decay product of Ra-226). The limits are provided in units call Working Levels (WLs), and for this assessment it is assumed that 0.02 WL is equivalent to 4 pCi/L of air. Specifically, 192.12(b)(1) states the following:

> *The objective of the remedial action shall be, and reasonable effort shall be made to achieve, an average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL.*

Indoor radon and decay product concentrations are simple to measure but very difficult to model. Concentrations are dependent on many variables such as the geology in the immediate vicinity, the basic construction style (basement, vs. crawl space vs. slab on grade), indoor environmental control methods, etc. It is also known that indoor radon and radon decay product concentrations may exceed Subpart B limits even when Ra-226 is at background. Based on this information, it is assumed that remediation to unconditional release criteria will also limit indoor radon decay products to no more than the values specified in Subpart B. It is also assumed that indoor radon levels in habitable structures will be monitored whenever supplemental standards with institutional controls are required.

D.2.2.2 10 CFR Part 40 Appendix A Criterion 6(6)

10 CFR Part 40 Appendix A was developed to provide a clear and consistent regulatory basis for determining the extent to which soils and buildings are to be remediated. Criterion 6(6) regulates uranium recovery sites and is not applicable to the North County Site, but it is relevant and appropriate. Criterion 6(6) specifically states:

> *Byproduct material containing concentrations of radionuclides other than radium in soil … must not result in a total effective dose equivalent (TEDE) exceeding the dose from the cleanup of radium contaminated soil to the above standard (benchmark dose), and must be at levels which are as low as reasonably achievable. If more than one residual radionuclide is present in the same 100-square-meter area, the sum of the ratios for each radionuclide of concentration present to the concentration limit will not exceed "1" (unity). A calculation of the potential peak annual TEDE within 1000 years to the average member of the critical group that would result from the standard (not including radon) on the site must be submitted for approval.*

The remediation goals for U-238 and Th-230 in surface soils were developed using the benchmark dose approach defined in 10 CFR 40, Appendix A, Criterion 6(6). As discussed in section D.2, the site-specific remediation goals for U-238 and Th-230 are also derived in accordance with 40 CFR 192, Subpart A. Site-specific soil RGs of 15 pCi/g of Th-230, and 50 pCi/g of U-238 were established.

The benchmark dose approach defined in Criterion 6(6) was applied in development of the Coldwater Creek subsurface sediment remediation goals. The remediation goal derived for subsurface sediments (i.e., 15 pCi/g of Ra-226, 43 pCi/g of Th-230 and 150 pCi/g of U-238 above background) is implemented for soils and sediments under the mean water gradient for Coldwater Creek. This remediation goal assures protectiveness of Coldwater Creek under all future anticipated land use conditions (e.g., recreational/trespasser, maintenance, construction, and utility uses) and minimizes adverse environmental impact associated with greater excavation in Coldwater Creek.

The following subsections develop supplemental standards for subsurface soils and deep soils. The supplemental standards for use with institutional controls assumed for the North County Site limit doses to less than 100 mrem/yr for anticipated receptors should institutional controls be lost. Therefore, the concentrations in soil or sediment must be limited so that the residual dose does not exceed 100 mrem in any single year over a 1,000-year evaluation period. The 100-mrem/yr limit is adopted to be consistent with national and international guidance. The 100-mrem/yr limit also applies even when institutional controls are lost. In summary, supplemental standards will include the following components:

1. Land use will be restricted by institutional controls;

2. The risk to potential receptors will be limited to the CERCLA target risk range with institutional controls in place;

If institutional controls are lost, the dose to potential receptors (e.g., residential) will be limited to 100 mrem/yr.

D.2.2.3 Supplemental Standards

Supplemental standards are described below that could be implemented pursuant to 40 CFR Part 192 Subpart C and include controls to restrict land use. The dose-based supplemental standards developed herein also limit risks to within the CERCLA risk range when institutional controls are in place.

Supplemental cleanup standards have been developed for subsurface materials at the primary storage areas (SLAPS and HISS/Futura) under the containment and treatment alternatives (Alternatives 2 and 3) to ensure protectiveness under commercial/industrial use. These supplemental standards are appropriate in accordance with criteria specified in 40 CFR 192.21 (c), which states that supplemental standards may be applied under circumstances where removal would result in excessive remedial action costs relative to the long-term benefits and the residual radioactive materials do not pose a clear present or future hazard. The supplemental standards for subsurface materials at the primary storage areas are to be used in conjunction with institutional controls. For those remedial alternatives involving land use restrictions at SLAPS and HISS/Futura (Alternatives 2 and 3), supplemental standards of 25/70/250 pCi/g above background for Ra-226/Th-230/U-238 would be used for subsurface soils. These

supplemental standards would protect the most likely current and future receptors (e.g., construction and utility workers) and ensure that doses to the general public would be limited to less than 100 mrem/yr if institutional controls were lost.

Concentrations of individual radionuclides in subsurface soils that would produce 100 mrem/yr are listed in Table D-12. Although institutional controls would likely limit the future land use to industrial, the standard would also apply if controls are lost leading to residential exposures. Table D-12 shows that if controls were lost the residential-use or construction scenarios would limit residual concentrations (limiting values are bolded). If a mixture of concentrations were identified, a sum of ratios (SOR) approach would be required to limit the total dose to 100 mrem/yr. Using the radionuclides found in the highest concentrations, the dose-based SOR equation that would limit doses to 100 mrem/yr for North County receptors would include Ra-226 at 26 pCi/g and Th-230 at 73 pCi/g. These values are approximately 5 times the free release criteria of 5 pCi/g and 14 pCi/g, respectively. The supplemental standard for subsurface soil is, therefore set to 5 times the free release standard as shown in Equation 1:

$$SOR_{subsurface} = \frac{^{226}Ra_N}{25\,pCi/g} + \frac{^{230}Th_N}{70\,pCi/g} + \frac{^{238}U_N}{250\,pCi/g} \leq 1 \qquad \text{Eq. 1}$$

where the subscript "N" stands for the net (above background) value. Note that the U-238 concentration could be much higher than 250 pCi/g and still satisfy dose criteria. However, the value is set to 5 times the 50 pCi/g free release criterion to be consistent with other radionuclides and considering "primary balancing factors" and "modifying considerations" as defined under CERCLA (i.e., public acceptance, long term effectiveness, etc.).

Table D-12. Concentrations to Produce Supplemental Standard Dose (pCi/g) for Subsurface Soils

Analyte	Residential	Industrial	Maintenance	Recreational	Construction	Utility
Ac-227	**75**	303	865.7	6211	**75**	1885
Pa-231	227	1325	1945	35486	**192**	4794
Ra-226 [a]	**26**	84.7	472	1573	36	910
Ra-228	**51**	162	997	2966	74	1857
Th-228	**30**	96.3	613.6	1764	45	1129
Th-230 (0)	3673	18840	29803	467290	2741	68512
Th-230 (1k) [b]	**73**	242	1349	4494	104	2600
Th-232	745	3845	5996	95969	**552**	13789
U-234	7713	41754	62011	1077935	**5814**	145349
U-235	**382**	1230	7313	22640	549	13714
U-238	**1770**	6146	27250	117014	2194	54861
Dose [c]	100	100	100	100	100	100

[a] Assumed to be in equilibrium with Pb-210

[b] Provided to limit ingrowth of Ra-226 over 1,000 years

[c] Dose limit used to develop industrial-use supplemental standards for soil concentrations (mrem/yr)

The values shown in Equation 1 satisfy the 100-mrem/yr dose limit. Remediation of the top 0.15 m (6 inches) of soil to the release criteria from the ARAR for unrestricted release is shown in Equation 2:

$$SOR_{surf} = \frac{^{226}Ra_N}{5\,pCi/g} + \frac{^{230}Th_N}{14\,pCi/g} + \frac{^{238}U_N}{50\,pCi/g} \leq 1 \qquad \text{Eq. 2}$$

where the subscript "surf" refers to the top 0.15 m (6 inches) of soil and "N" stands for the net (above background) value. Maintaining the surface soil to the free release criterion and subsurface soils to the limits shown in Equation 1 would assure that the three components required for supplemental standards are incorporated. As an additional assurance, implementation of this supplemental standard would also include calculations to assure that residual risks and doses from all radionuclides listed in Table D-12 are within acceptable limits.

Supplemental Standard for Deep Soils

A supplemental standard for deep soils was assessed during development of the FS alternatives as a potential option for addressing deep (greater than 8 ft below ground surface) soil contamination at SLAPS and HISS/Futura. The deep soil criteria were not carried forth in any of the alternatives discussed in the FS, although they have been retained as potential remediation standards. Deep soil criteria are primarily dependent on three variables: 1) the depth of residual contamination, 2) the dose limit, and 3) the exposure scenario(s). The dose limit is 100 mrem/yr as described above and the possible exposure scenarios are listed in Table D-13. The actual depth to contamination and contamination thickness may vary. These variables are defined to conservatively describe known site conditions.

Variable 1 (Total Depth, TD) is defined as the total depth of an excavation that would result in the surface deposition of contaminants. It is assumed that the top eight feet of material would be remediated to unrestricted release criterion or to the subsurface soil supplemental standard as previously described. Eight feet is chosen as a reasonable excavation depth for future construction activities. It is then assumed that under rare occasions an excavation could extend another 4 ft making TD = 12 feet. Variable 2 (Contaminated Lens, CL) is defined as the thickness of the contaminated lens within the evaluated interval. If excavation to the surface soil supplemental standard or the unrestricted release criterion would apply to the top 8 ft and TD is 12 ft, CL ≤ 4 ft. The material potentially deposited on the surface is subject to a mixing ratio of CL to TD or CL/TD. Thus, the allowable concentrations listed in Table D-12 or Equation 1 could be increased by one over the ratio $(CL/TD)^{-1}$ or TD/CL.

The results in Table D-13 show that Ra-226 could be up to 77 pCi/g and Th-230 up to 219, or approximately 15 times the surface soil free release criteria. After rounding and applying the factor of 15, the criterion for deep soil is shown in Equation 3 using the SOR approach:

$$SOR_{deep} = \frac{^{226}Ra_N}{75\,pCi/g} + \frac{^{230}Th_N}{210\,pCi/g} + \frac{^{238}U_N}{750\,pCi/g} \leq 1 \qquad \text{Eq. 3}$$

where the subscript "deep" stands for deep soil. As with the surface soil standard, implementation to these RGs would require additional calculations to assure that residual doses from all radionuclides

listed in Table D-13 are below acceptable limits. Note that the risk from exposure to deep soils is negligible as long as institutional controls are maintained.

Table D-13. Concentrations to Produce Supplemental Standard Dose (pCi/g) for Deep Soils

Analyte	Residential	Industrial	Maintenance	Recreational	Construction	Utility
Ac-227	226	908	2597	18634	226	5656
Pa-231	681	3975	5834	106459	575	14382
Ra-226	77	254	1416	4719	109	2730
Ra-228	152	485	2991	8897	223	5572
Th-228	91	289	1841	5291	135	3386
Th-230 (0)	11020	56519	89409	1401869	8222	205536
Th-230 (1k) [b]	219	726	4047	13482	312	7800
Th-232	2234	11534	17989	287908	1655	41368
U-234	23138	125010	185847	3227336	17407	435174
U-235	1145	3681	21918	67784	1642	41059
U-238	5309	18402	81669	350339	6570	164253
Total Depth (TD)		**12 ft**				
Contaminated Lens (CL)		**4 ft**				

[a] Assumed to be in equilibrium with Pb-210
[b] Th-230(1k) value provided to limit ingrowth of Ra-226 over 1,000 years

D.2.2.4 ARAR Summary

ARARs establish 5 pCi/g above background as the criteria for Ra-226 in the top 6 inches (15 cm) of soil, and 15 pCi/g in any subsequent 6-inch layer. The remediation goal for Ra-226 is set forth in 40 CFR 192, Subpart B. Site-specific remediation goals for U-238 and Th-230 are derived in accordance with 10 CFR 40, Appendix A, Criterion 6(6) and 40 CFR 192, Subpart A. Exposures from all radionuclides will be constrained to the benchmark dose or from the in-growth of Ra-226 from Th-230. For cases where material is left above criteria for unrestricted release of a property, institutional controls would be used to restrict land use and ensure protectiveness.

D.2.3 SITE-SPECIFIC REMEDIATION GOALS

Earlier risk screens included the use of generic PRGs based on typical default values. As a next step, site-specific RGs were then developed based on site-specific risk assessments, hazard evaluations, and ARARs. These site-specific RGs are presented in Table D-14. The need for movement away from the point of departure is described below based on consideration of the CERCLA criteria, e.g. protectiveness and implementability.

Table D-14 lists site-specific RGs for soil and sediments at the North County Site. While one objective of the source removals and other remedial actions is to protect surface water and other media, no site-specific RGs were calculated for these media because there were no COCs for ground water or surface water. Carcinogenic, non-carcinogenic, and ARAR-based requirements were all considered in the development of these RGs.

As discussed in Section D.2.1, cleanup of the radiological COCs in the North County Site at the 10^{-6} level would not be achievable and/or would significantly increase cost without significant risk reductions. Reasons for movement away from 10^{-6} include the inability to distinguish soil concentrations at the 10^{-6} level from background, and the limitations of field and laboratory equipment. The development of site-specific RGs is described below. This evaluation shows that the RGs required by ARAR criteria for radionuclides would achieve protectiveness to levels within the CERCLA target risk range and below a HI of 1.0, and has been demonstrated to be implementable. The implementation of ARAR-based RGs for radionuclides (discussed in the next section) would also require the evaluation of non-radiological COCs.

Tables D-14, D-15, and D-16 summarize the proposed cleanup criteria as defined and used throughout the North County FS. These values have been selected considering ARARs, the values listed in Tables D-8 through D-13, and other CERCLA criteria including a balance of cost and risk to likely receptors, and implementability. Note that relocation of sediments from Coldwater Creek at their current levels could result in risks exceeding the unrestricted use criteria for an adjacent residential property. As such, soils above the mean water gradient within Coldwater Creek would be remediated to unrestricted use criteria (i.e., CERCLA risk and the residential benchmark dose). Sediments below the mean water gradient would be remediated to 15 pCi/g of Ra-226, 43 pCi/g of Th-230, or 150 pCi/g of U-238 (all above background concentrations). For sediments no adjustment to the ARAR-based criteria are considered necessary, due to less uncertainty regarding future land use. This approach assures protectiveness of Coldwater Creek under all future anticipated land use conditions.

No ARARs have been identified for the non-radiological contaminants in soils at the North County Site. The remediation goals for non-radiological COCs were developed based on site-specific risk assessments and hazard evaluations. At the North County Site, eleven non-radionuclides are identified as COCs for soils: antimony, arsenic, barium, cadmium, chromium, molybdenum, nickel, selenium, thallium, uranium, and vanadium. These noncarcinogens have different effects on different organs or systems in the body. The remediation goals for noncarcinogens were developed to ensure that the cumulative effect of the chemical levels of the COCs produces a $HI < 1.0$ for each target organ/system affected. In addition, remediation goals were selected at levels above detection limits and background levels.

Toxicologists evaluated the primary effects of the 11 metals in the soils at North County. A matrix is developed in Table D-17 to show the effects of these 11 metals of the primary target organs/systems. Only those listed by the toxicologists as "primary" are included on the matrix table. The HIs were calculated for all six different types of receptors – residential, industrial, construction worker, maintenance worker, recreational/trespasser, and utility worker. Generally, the construction worker was identified as the most sensitive receptor, except for a few cases where the residential receptor was the most sensitive or restrictive scenario. The proposed RGs for all non-radionuclides were calculated based on the HIs for the different primary target organs. Because the HIs were very similar for the construction and residential receptors, the same RGs are proposed for unrestricted use and for use with institutional controls. The protectiveness to each primary organ was tested by adding up the HIs of the corresponding COCs targeted to that primary organ. In each case, the value of HI was less than one.

Table D-14. Site-specific Remediation Goals (RGs) for Soil and Sediment in the North County Site

RGs for Unrestricted Release – Surface Soil/Sediment						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
Unrestricted release concentrations for surface soils. Unrestricted release concentrations for surface sediments above the mean water gradient of Coldwater Creek. Non-radiological RGs apply to SLAPS and Contiguous Areas (IAs 1-13), HISS/Futura, and Latty Avenue VPs 2L and 10k530087. Chromium and uranium (considered as a non-radionuclide) are not COCs at all Latty Avenue properties.	Antimony	mg/kg	15	-	-	Corresponding to Cardiovascular and Respiratory HI = 0.08
	Arsenic	mg/kg	36	-	-	Corresponding to Cardiovascular HI = 0.23
	Barium	mg/kg	2,800	-	-	Corresponding to Cardiovascular HI = 0.08
	Cadmium	mg/kg	12	-	-	Corresponding to Kidney and Respiratory HI = 0.10
	Chromium	mg/kg	350	-	-	Corresponding to Respiratory HI = 0.10
	Molybdenum	mg/kg	1,000	-	-	Corresponding to Skeletal HI = 0.38
	Nickel	mg/kg	1,500	-	-	Corresponding to Immune and Respiratory HI = 0.14
	Selenium	mg/kg	300	-	-	Corresponding to Skin HI = 0.11
	Thallium	mg/kg	25	-	-	Corresponding to Skin and Central Nervous System HI = 0.15
	Uranium	mg/kg	150	-	-	Corresponding to Kidney HI = 0.09
	Vanadium	mg/kg	112	-	-	Corresponding to Respiratory HI = 0.10
	Ra-226	pCi/g	-	-	5.0	As defined by ARARs
	Ra-228	pCi/g	-	-	5.0	As defined by ARARs
	Th-230	pCi/g	-	-	14	Set to limit ingrowth of Ra-226 of 1,000 years
	U-238	pCi/g	-	-	50	Corresponds to benchmark dose for most restrictive receptor plus adjustments to conservatively account for residual decay products out of equilibrium.

RGs for Unrestricted Release – Subsurface Soil/Sediment						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
Unrestricted release concentrations for subsurface soils. Unrestricted release concentrations for subsurface sediments above the mean water gradient of Coldwater Creek. Non-radiological RGs apply to SLAPS and Contiguous Areas (IAs 1-13), HISS/Futura, and Latty Avenue VPs 2L and 10k530087. Uranium (considered as a non-radionuclide) is not a COC at all Latty Avenue properties.	Antimony	mg/kg	25	-	-	Corresponding to Respiratory HI = 0.14
	Arsenic	mg/kg	40	-	-	Corresponding to Skin HI = 0.23
	Thallium	mg/kg	30	-	-	Corresponding to Central Nervous System HI = 0.08
	Uranium	mg/kg	150	-	-	Corresponding to Kidney HI = 0.09
	Ra-226	pCi/g	-	-	15	As defined by ARARs
	Ra-228	pCi/g	-	-	15	As defined by ARARs
	Th-230	pCi/g	-	-	15	Set to Ra-226 RG to account for uncertainty in future land use, exposure pathways, etc.. and to facilitate EPA's approval of the remedial action selected.
	U-238	pCi/g	-	-	50	Set to surface soil RG to account for uncertainty in future land use, exposure pathways, etc.

Table D-14. Site-specific Remediation Goals (RGs) for Soil and Sediment in the North County Site (Cont'd)

RGs for Unrestricted Release – Sediment						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
RGs for sediment below the mean water gradient of Coldwater Creek.	Ra-226	pCi/g	-	-	15	Subsurface RG for unconditional release (3 times the surface RG) used for sediment below the mean water line.
	Ra-228	pCi/g	-	-	15	Subsurface RG for unconditional release (3 times the surface RG) used for sediment below the mean water line.
	Th-230	pCi/g	-	-	43	Set to limit ingrowth of Ra-226 of 1,000 years
	U-238	pCi/g	-	-	150	Set to 3 times the RG for unconditional release consistent with the approach for Ra-226.
Supplemental Standards for Subsurface Soils using Institutional Controls						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
Supplemental standards for soils below the top 15 cm (6 inches).	Ra-226	pCi/g	-	-	25	Limits dose to less than 100 mrem/yr if controls are lost (equivalent to 5 times the unconditional release RG)
	Th-230	pCi/g	-	-	70	Set to limit ingrowth of Ra-226 of 1,000 years
	U-238	pCi/g	-	-	250	Scaled to 5 times the unconditional release RG for subsurface soil to be consistent with Ra-266 and Th-230 RGs.
Supplemental Standard for Deep Soils using Institutional Controls						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
Supplemental standards for deep soils. Unity rule applies.	Ra-226	pCi/g	-	-	75	Limits dose to less than 100 mrem/yr if controls are lost
	Th-230	pCi/g	-	-	210	Set to limit ingrowth of Ra-226 of 1,000 years
	U-238	pCi/g	-	-	750	Scaled to a 15 times the unconditional release RG for subsurface soil to be consistent with Ra-266 and Th-230 RGs.

Table D-14. Site-specific Remediation Goals (RGs) for Soil and Sediment in the North County Site (Cont'd)

RGs for Use with Institutional Controls – Surface Soil Non-radionuclides						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
Provided to limit risk from non-radionuclides assuming institutional controls are applied. RGs apply to SLAPS and Contiguous Areas (IAs 1-13), HISS/Futura, and Latty Avenue VPs 2L and 10k530087. Chromium and uranium (considered as a non-radionuclide) are not COCs at all Latty Avenue properties.	Antimony	mg/kg	15	-	-	Corresponding to Cardiovascular and Respiratory HI = 0.08
	Arsenic	mg/kg	36	-	-	Corresponding to Cardiovascular HI = 0.23
	Barium	mg/kg	2,800	-	-	Corresponding to Cardiovascular HI = 0.08
	Cadmium	mg/kg	12	-	-	Corresponding to Kidney and Respiratory HI = 0.10
	Chromium	mg/kg	350	-	-	Corresponding to Respiratory HI = 0.10
	Molybdenum	mg/kg	1,000	-	-	Corresponding to Skeletal HI = 0.38
	Nickel	mg/kg	1,500	-	-	Corresponding to Immune and Respiratory HI = 0.14
	Selenium	mg/kg	300	-	-	Corresponding to Skin HI = 0.11
	Thallium	mg/kg	25	-	-	Corresponding to Skin and Central Nervous System HI = 0.15
	Uranium	mg/kg	150	-	-	Corresponding to Kidney HI = 0.09
	Vanadium	mg/kg	112	-	-	Corresponding to Respiratory HI = 0.10
RGs for Use with Institutional Controls – Subsurface Soil Non-radionuclides						
Description	**Analyte**	**Units**	**Hazard-Based**	**Risk-Based [a]**	**ARAR-Based**	**Basis**
Provided to limit risk from non-radionuclides assuming institutional controls are applied. RGs apply to SLAPS and Contiguous Areas (IAs 1-13), HISS/Futura, and Latty Avenue VPs 2L and 10k530087. Uranium (considered as a non-radionuclide) is not a COC at all Latty Avenue properties.	Antimony	mg/kg	25	-	-	Corresponding to Respiratory HI = 0.14
	Arsenic	mg/kg	40	-	-	Corresponding to Skin HI = 0.23
	Thallium	mg/kg	30	-	-	Corresponding to Central Nervous System HI = 0.08
	Uranium	mg/kg	150	-	-	Corresponding to Kidney HI = 0.09

Table D-15. Summary of Proposed Remediation Goals (RGs)

Remediation Goals for Unrestricted Land Use	Remediation Goals for Use with Institutional Controls at SLAPS and HISS/Futura
Surface soils would be remediated if the radionuclide concentrations above background averaged over 100 m^2 exceed 5 pCi/g of Ra-226, 14 pCi/g of Th-230, or 50 pCi/g of U-238 in the top 15 cm (6 in). Subsurface soils would be remediated if the radionuclide concentrations above background averaged over 100 m^2 exceed 15 pCi/g of Ra-226, 15 pCi/g of Th-230, or 50 pCi/g of U-238 in any subsequent 15-cm (6-in) layer. Soils and sediments below the mean water gradient of Coldwater Creek would be remediated if the radionuclide concentrations above background averaged over 100m^2 exceed 15 pCi/g of Ra-226, 43 pCi/g of Th-230, or 150 pCi/g of U-238. Soil remediation goals apply to soils above the mean water gradient of Coldwater Creek. Confirmation would include surveys and residual risk calculations to assure that total residual site risk is within the CERCLA risk range. Final status surveys compatible with MARSSIM would be used to document achievement of the remediation goals for radiological COCs.	Supplemental standards are developed for Alternatives 2 and 3 in accordance with 40 CFR 192, Subpart C. These supplemental standards are used in conjunction with institutional controls at SLAPS and HISS/Futura (the primary areas used for storage of FUSRAP materials). Supplemental standards are appropriate for the primary storage areas under the containment and treatment alternatives because excavation to the RGs for unrestricted use would result in excessive remediation costs relative to the long term benefits and because the residual materials will not pose present or future hazard. The supplemental criteria constrain doses such that public exposure limits are not exceeded should the institutional controls be lost. The supplemental criteria for subsurface soil limit contamination to average above background concentrations of 25 pCi/g of Ra-226, 70 pCi/g of Th-230, and 250 pCi/g of U-238 or combinations of radionuclides. Institutional controls are implemented to assure that future land use is fully protective.

Table D-16. Proposed Remediation Goals (RGs) for Non-radionuclide Contaminants of Concern (COCs)[a]

Surface		
Analyte	Units	Proposed RG[b]
Antimony	mg/kg	15
Arsenic	mg/kg	36
Barium	mg/kg	2800
Cadmium	mg/kg	12
Chromium	mg/kg	350
Molybdenum	mg/kg	1000
Nickel	mg/kg	1500
Selenium	mg/kg	300
Thallium	mg/kg	25
Uranium	mg/kg	150
Vanadium	mg/kg	112
Subsurface		
Analyte	Units	Proposed RG
Antimony	mg/kg	25
Arsenic	mg/kg	40
Thallium	mg/kg	30
Uranium	mg/kg	150

[a] Non-radionuclide COCs were only identified for SLAPS and Contiguous Areas (IAs 1-13), HISS/Futura, and Latty Avenue VPs 2L and 10k530087. Remediation of non-FUSRAP related wastes based on the RGs for non-radionuclide COCs will be conducted in areas where they are co-located with FUSRAP COCs.

[b] The calculated HIs for different primary target organs were based on the construction worker. Thus the same RGs are proposed for unrestricted use and for use with institutional controls.

Table D-17. Primary organs/critical effects for noncarcinogenic chemical COCs

Organ/System	Antimony	Arsenic	Barium	Cadmium	Chromium	Molybdenum	Nickel	Selenium	Thallium	Uranium	Vanadium	Total # COCs
Cardiovascular System	X	X	X									3
Respiratory System/Lungs	X			X	X		X				X	5
Central Nervous System (CNS)								X	X			2
Immune System							X					1
Skeletal System/bones						X						1
Kidney				X						X		2
Skin/hair		X						X	X			3

Table D-16 shows the RGs for the 11 surface soil and 4 subsurface soil COCs. Table D-18 demonstrates the attainment of protectiveness for all target organs/systems for both the residential and construction worker receptors.

The full list of COCs calculated in this assessment does not apply to the entire North County Site. Table D-19 lists the COCs by medium, noting that no chemicals are identified as COCs for ground water or surface water, and only radionuclides are identified as COCs for sediments. Both radionuclides and non-radionuclides are identified as COCs for North County Site soils. Radionuclide COCs include members of the uranium, thorium, and actinium series and are applicable to all site soil and sediment. Non-radionuclide COCs include antimony, arsenic, barium, cadmium, chromium, molybdenum, nickel, selenium, thallium, uranium, and vanadium for SLAPS and contiguous area; and antimony, arsenic, barium, cadmium, molybdenum, nickel, selenium, thallium, and vanadium for HISS/Futura and Latty Avenue VPs 2L and 10k530087. Only radionuclides are identified as COCs for haul roads and remaining VPs. Although non-radiological PCOCs were identified for shallow ground water, the shallow aquifer (HZ-A) is not a potable drinking water source. Because there is no exposure pathway, no ground-water COCs are identified.

Attachment 19 provides a summary of property units at the North County Site, current and future receptors by property, cleanup status, removal actions, the proposed criteria to be applied to each property on an alternative by alternative basis, and whether remediation of the property is required to meet the proposed criteria. Note that many Latty Avenue VPs are noted with a "(L)" in the VP number and many properties adjacent to Coldwater Creek are noted with a "(C)" in the VP number. The information in Table D-14 and Attachment 19 may be used to identify which properties require remediation, which remediation criteria are used, and which COCs are relevant.

D.2.4 IMPLEMENTATION

The previous subsection defines soil RGs and the basis for derivation of such goals to the CERCLA process. In this subsection, the methods to document compliance with concentration-, risk-, and dose-based limits are provided.

40 CFR 192.20 (in Subpart C) provides guidance for implementation of remediation standards. This guidance authorizes the implementing agency the flexibility to "establish methods and procedures to provide 'reasonable assurance' that the provisions of Subparts A and B are satisfied. These methods and procedures may be varied to suit conditions at specific sites." Cleanup in the North County Site under non-time-critical removal actions is currently underway using the guidance derived subsequent to UMTRCA from Multi-Agency Radiation Site Survey and Investigation Manual (MARSSIM). MARSSIM was jointly issued in December of 1997 by the Department of Defense, EPA, et al. to provide a consistent method for conducting final status surveys of sites with radioactive contamination. USACE experience has demonstrated that the achievement of RGs required by 40 CFR Part 192 and 10 CFR Part 40 Appendix A Criterion 6(6) can be fully documented using MARSSIM's methodology. MARSSIM (or similar guidance) will be used to develop final status survey plans for the North County Site that will, in turn, be used to demonstrate compliance with radiological criteria. This approach is consistent with the current practices in the North County Site. Similarly, non-radiological COCs will be evaluated in the final

status survey to verify that risk and hazard criteria are fully protective under CERCLA and have been satisfied.

Final status surveys would likely include the use of gamma walkover scans to identify areas of elevated gamma activity, biased sampling if elevated areas are identified, and systematic sampling similar to the approach currently use in the North County and at SLDS. MARSSIM (or similar) guidance would also provide methodology for calculating the appropriate number of samples for a given area to demonstrate statistical confidence. Having collected systematic and biased soil data, dose, risk and statistical calculations are performed as part of the final status survey to document that criteria have been satisfied. The final status survey would fully consider and account for property-specific considerations, such as geometry, intended future land use, COCs, data confidence, etc. MARSSIM is designed specifically for radionuclides; chemical COCs will be assessed using similar EPA/CERCLA methods to verify that any non-radionuclide RGs are achieved. The use of MARSSIM (or similar) guidance to implement the RGs similar to those presented in Section D.2. would likely produce residual soil concentrations similar to those shown in Table D-8. Thus, the referenced RGs are protective as defined by CERLCA and the ARARs, and are implementable based on site experience.

Receptor-specific dose and risk calculations would also be performed to be consistent with remedial objectives. Confirmation sampling of COCs will be conducted to assure that risks are within or below the CERCA target risk range and that hazards are below 1.0. If confirmation sampling indicates that remediation of radiological COCs consistently removes non-radiological COCs to below risk and hazard criteria, the number of analytes and sampling frequency may be reduced as fewer samples would be needed to demonstrate protectiveness to the same statistical confidence level.

Table D-18. Verification of Protectiveness to Various Primary Organs

Verification of Protectiveness for the Cardiovascular, Respiratory, and Central Nervous Systems [a]

	Construction Worker Surface Soil			Construction Worker Subsurface Soil		
COC	**HI for Card.**	**HI for Resp.**	**HI for CNS**	**HI for Card.**	**HI for Resp.**	**HI for CNS**
Antimony	0.21	0.21		0.34	0.34	
Arsenic	0.57			0.63		
Barium	0.20					
Cadmium		0.24				
Chromium		0.10				
Molybdenum						
Nickel		0.36				
Selenium			0.28			
Thallium			0.15			0.18
Uranium						
Vanadium		0.10				
Total HI	**0.97**	**1.00**	**0.43**	**0.97**	**0.34**	**0.18**
	Resident Surface Soil			**Resident Subsurface Soil**		
COC	**HI for Card.**	**HI for Resp.**	**HI for CNS**	**HI for Card.**	**HI for Resp.**	**HI for CNS**
Antimony	0.08	0.08		0.14	0.14	
Arsenic	0.23			0.25		
Barium	0.08					
Cadmium		0.10				
Chromium		0.26				
Molybdenum						
Nickel		0.14				
Selenium			0.11			
Thallium			0.59			0.71
Uranium						
Vanadium		0.00				
Total HI	**0.39**	**0.58**	**0.71**	**0.39**	**0.14**	**0.71**

Verification of Protectiveness for the Immune System, Skeletal System, and Kidneys [b]

	Construction Worker Surface Soil			Construction Worker Subsurface Soil		
COC	**HI for Imm.**	**HI for Skel.**	**HI for Kidney**	**HI for Imm.**	**HI for Skel.**	**HI for Kidney**
Antimony						
Arsenic						
Barium						
Cadmium			0.24			
Chromium						
Molybdenum		0.94				
Nickel	0.36					
Selenium						
Thallium						
Uranium			0.24			0.24
Vanadium						
Total HI	**0.36**	**0.94**	**0.48**	**0.00**	**0.00**	**0.24**

Table D-18. Verification of Protectiveness to Various Primary Organs (Cont'd)

Verification of Protectiveness for the Immune System, Skeletal System, and Kidneys [b] (Cont'd)

	Resident Surface Soil			Resident Subsurface Soil		
COC	**HI for Imm.**	**HI for Skel.**	**HI for Kidney**	**HI for Imm.**	**HI for Skel.**	**HI for Kidney**
Antimony						
Arsenic						
Barium						
Cadmium			0.10			
Chromium						
Molybdenum		0.38				
Nickel	0.14					
Selenium						
Thallium						
	Resident Surface Soil			**Resident Subsurface Soil**		
COC	**HI for Imm.**	**HI for Skel.**	**HI for Kidney**	**HI for Imm.**	**HI for Skel.**	**HI for Kidney**
Uranium			0.09			0.09
Vanadium						
Total HI	**0.14**	**0.38**	**0.19**	**0.00**	**0.00**	**0.09**

Verification of Protectiveness for Skin/Hair [b]

	Construction Worker		Resident	
	Surface Soil	**Subsurface Soil**	**Surface Soil**	**Subsurface Soil**
COC	**HI for Skin**	**HI for Skin**	**HI for Skin**	**HI for Skin**
Antimony				
Arsenic	0.57	0.63	0.23	0.25
Barium				
Cadmium				
Chromium				
Molybdenum				
Nickel				
Selenium	0.28		0.11	
Thallium	0.15	0.18	0.59	0.71
Uranium				
Vanadium				
Total HI	**1.00**	**0.81**	**0.93**	**0.96**

HI = hazard index (the sum of all hazard quotients across all chemicals that affect the system being evaluated).

[a] Protectiveness is met when the HI $\leq$ 1.0.

[b] Protectiveness is met when the HI < 1.0.

Table D-19. North County Site Contaminants of Concern

Soil		Sediment		Ground Water [a]	Surface Water
SLAPS and Contiguous Areas [b]	Radionuclides [c], antimony, arsenic, barium, cadmium, chromium, molybdenum, nickel, selenium, thallium, uranium, and vanadium	Coldwater Creek	Radionuclides [c]	None	None
HISS/Futura and Latty Avenue VPs 2L and 10k530087	Radionuclides [c], antimony, arsenic, barium, cadmium, molybdenum, nickel, selenium, thallium, and vanadium				
Haul Road Properties and Remaining VPs	Radionuclides[c]				
Coldwater Creek (within banks)	Radionuclides[c]				

[a] PCOCs identified in HZ-A. However, no COCs identified because HZ-A is not a source of potable drinking water.
[b] IA-1 through IA-13.
[c] Radionuclides in the uranium, thorium, and actinium series.

D.3 REFERENCES

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APPENDIX D

ATTACHMENTS

Attachment 1. Soil Background Summary (Page 1 of 2)

Analysis Type	Analyte (units)	Freq. of Detect	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Metals	Aluminum (mg/kg)	40/40			4260.00	14700.00	7290.00	2568.65	X	14700.00		14700.00	14700.00
Metals	Antimony (mg/kg)	2/40	1.60	7.85	4.50	5.20	3.43	2.52	D	7.85		7.85	5.20
Metals	Arsenic (mg/kg)	40/40			0.84	18.00	7.07	3.26	X	18.00		18.00	18.00
Metals	Barium (mg/kg)	40/40			40.70	279.00	141.00	42.51	X	279.00		279.00	279.00
Metals	Beryllium (mg/kg)	16/40	0.22	0.41	0.33	0.83	0.39	0.16	D	0.83		0.83	0.83
Metals	Boron (mg/kg)	27/40	1.10	1.30	2.80	9.90	4.25	2.66	X	9.90		9.90	9.90
Metals	Cadmium (mg/kg)	6/40	0.15	0.90	0.36	0.62	0.40	0.31	D	0.90		0.90	0.62
Metals	Calcium (mg/kg)	40/40			1250.00	28900.00	6560.00	7023.90	X	28900.00		28900.00	28900.00
Metals	Chromium (mg/kg)	40/40			7.00	17.60	11.50	2.38	L	17.60	17.30	17.60	17.30
Metals	Cobalt (mg/kg)	40/40			2.30	31.70	7.02	4.56	X	31.70		31.70	31.70
Metals	Copper (mg/kg)	40/40			8.40	22.30	12.90	2.67	L	22.30	19.40	22.30	19.40
Metals	Iron (mg/kg)	40/40			6250.00	28200.00	13600.00	4953.34	L	28200.00	26600.00	28200.00	26600.00
Metals	Lead (mg/kg)	40/40			6.60	79.70	22.10	16.96	X	79.70		79.70	79.70
Metals	Lithium (mg/kg)	22/30	1.60	3.40	2.00	8.10	4.58	1.99	N	8.10	9.00	8.10	8.10
Metals	Magnesium (mg/kg)	40/40			819.00	18400.00	3910.00	4153.01	X	18400.00		18400.00	18400.00
Metals	Manganese (mg/kg)	40/40			68.30	4690.00	756.00	838.06	L	4690.00	2830.00	4690.00	2830.00
Metals	Mercury (mg/kg)	8/30	0.03	0.04	0.06	0.69	0.06	0.12	D	0.69		0.69	0.69
Metals	Molybdenum (mg/kg)	13/40	0.40	0.55	1.00	22.70	3.04	4.91	D	22.70		22.70	22.70
Metals	Nickel (mg/kg)	40/40			4.10	47.00	14.60	7.26	L	47.00	33.90	47.00	33.90
Metals	Potassium (mg/kg)	40/40			433.00	1220.00	753.00	183.74	N	1220.00	1140.00	1220.00	1140.00
Metals	Selenium (mg/kg)	9/40	0.13	0.65	0.29	0.55	0.25	0.13	D	0.65		0.65	0.55
Metals	Silver (mg/kg)	1/40	0.08	1.30	2.60	2.60	0.58	0.52	D	2.60		2.60	2.60
Metals	Sodium (mg/kg)	37/40	23.10	45.25	51.40	279.00	94.60	51.70	L	279.00	235.00	279.00	235.00
Metals	Strontium (mg/kg)	30/30			8.60	26.00	17.00	5.19	L	26.00	32.50	26.00	26.00
Metals	Titanium (mg/kg)	30/30			101.00	269.00	180.00	45.82	N	269.00	281.00	269.00	269.00
Metals	Vanadium (mg/kg)	40/40			9.50	31.00	17.90	5.08	L	31.00	31.30	31.00	31.00
Metals	Zinc (mg/kg)	40/40			30.60	278.00	55.30	39.98	X	278.00		278.00	278.00
Organics-Pesticide/PCB	4,4'-DDT (mg/kg)	1/30	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Organics-Pesticide/PCB	Aldrin (mg/kg)	1/30	0.00	0.00	0.02	0.02	0.00	0.00	D	0.02		0.02	0.02
Organics-Pesticide/PCB	Alpha Chlordane (mg/kg)	1/30	0.00	0.00	0.01	0.01	0.00	0.00	D	0.01		0.01	0.01
Organics-Pesticide/PCB	Dieldrin (mg/kg)	2/30	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Organics-Pesticide/PCB	Gamma Chlordane (mg/kg)	1/30	0.00	0.00	0.01	0.01	0.00	0.00	D	0.01		0.01	0.01
Organics-Pesticide/PCB	Heptachlor Epoxide (mg/kg)	1/30	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Organics-Semivolatile	Anthracene (mg/kg)	1/46	0.18	0.23	0.03	0.03	0.20	0.03	D	0.23		0.23	0.03
Organics-Semivolatile	Benzo(a)anthracene (mg/kg)	7/46	0.18	0.23	0.06	0.30	0.20	0.04	D	0.30		0.30	0.30
Organics-Semivolatile	Benzo(a)pyrene (mg/kg)	8/46	0.18	0.23	0.05	0.34	0.19	0.06	D	0.34		0.34	0.34
Organics-Semivolatile	Benzo(b)fluoranthene (mg/kg	10/46	0.18	0.23	0.04	0.31	0.20	0.04	D	0.31		0.31	0.31
Organics-Semivolatile	Benzo(g,h,i)perylene (mg/kg)	4/46	0.18	0.23	0.06	0.39	0.20	0.04	D	0.39		0.39	0.39
Organics-Semivolatile	Benzo(k)fluoranthene (mg/kg	4/46	0.18	0.23	0.05	0.29	0.20	0.04	D	0.29		0.29	0.29
Organics-Semivolatile	Bis(2-ethylhexyl)phthalate (m	14/46	0.18	0.23	0.05	0.18	0.18	0.06	D	0.23		0.23	0.18
Organics-Semivolatile	Butyl Benzyl Phthalate (mg/k	6/46	0.18	0.23	0.04	0.25	0.19	0.05	D	0.25		0.25	0.25
Organics-Semivolatile	Chrysene (mg/kg)	9/46	0.18	0.22	0.06	0.57	0.20	0.07	D	0.57		0.57	0.57
Organics-Semivolatile	Dibenzo(a,h)anthracene (mg/k	1/46	0.18	0.23	0.04	0.04	0.20	0.03	D	0.23		0.23	0.04
Organics-Semivolatile	Fluoranthene (mg/kg)	9/46	0.18	0.23	0.05	0.70	0.20	0.09	D	0.70		0.70	0.70
Organics-Semivolatile	Indeno(1,2,3-cd)pyrene (mg/k	5/46	0.18	0.23	0.06	0.35	0.21	0.04	D	0.35		0.35	0.35
Organics-Semivolatile	Phenanthrene (mg/kg)	4/46	0.18	0.23	0.05	0.28	0.20	0.03	D	0.28		0.28	0.28
Organics-Semivolatile	Pyrene (mg/kg)	14/46	0.18	0.23	0.08	0.66	0.21	0.08	D	0.66		0.66	0.66

Attachment 1. Soil Background Summary (Page 2 of 2)

Analysis Type	Analyte (units)	Freq. of Detect	Minimum Nondetect	Maximum Nondetect	Minimum Detect	Maximum Detect	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Volatile	1,2-Dichloroethane (mg/kg)	3/40	0.00	0.01	0.00	0.01	0.00	0.00	D	0.01		0.01	0.01
Organics-Volatile	2-Butanone (mg/kg)	2/40	0.01	0.01	0.02	0.02	0.01	0.00	D	0.02		0.02	0.02
Organics-Volatile	Acetone (mg/kg)	1/40	0.01	0.04	0.02	0.02	0.01	0.01	D	0.04		0.04	0.02
Organics-Volatile	Chloroethane (mg/kg)	1/40	0.01	0.01	0.02	0.02	0.01	0.00	D	0.02		0.02	0.02
Organics-Volatile	Methylene Chloride (mg/kg)	9/40	0.00	0.01	0.00	0.01	0.00	0.00	D	0.01		0.01	0.01
Organics-Volatile	Toluene (mg/kg)	12/39	0.00	0.01	0.00	0.11	0.01	0.02	D	0.11		0.11	0.11
Radionuclides	Actinium-227 (pCi/g)	17/74	-0.16	0.62	0.15	0.82	0.21	0.23	D	0.82		0.82	0.82
Radionuclides	Cesium-137 (pCi/g)	37/74	-0.02	0.02	0.05	0.57	0.16	0.18	X	0.57		0.57	0.57
Radionuclides	Protactinium-231 (pCi/g)	2/74	-0.49	2.17	1.06	1.13	0.20	0.42	D	2.17		2.17	1.13
Radionuclides	Potassium-40 (pCi/g)	63/74	12.31	14.70	12.73	17.28	14.60	1.09	N	17.28	16.80	17.28	16.80
Radionuclides	Radium-226 (pCi/g)	74/74			0.56	1.55	1.05	0.27	X	1.55		1.55	1.55
Radionuclides	Radium-228 (pCi/g)	74/74			0.72	1.24	0.98	0.13	L	1.24	1.27	1.24	1.24
Radionuclides	Thorium-228 (pCi/g)	74/74			0.63	2.15	1.18	0.35	L	2.15	2.04	2.15	2.04
Radionuclides	Thorium-230 (pCi/g)	74/74			0.94	2.89	1.66	0.49	X	2.89		2.89	2.89
Radionuclides	Thorium-232 (pCi/g)	74/74			0.53	1.96	1.11	0.35	N	1.96	1.83	1.96	1.83
Radionuclides	Uranium-234 (pCi/g)	49/50	0.40	0.40	0.45	3.53	1.13	0.47	L	3.53	2.22	3.53	2.22
Radionuclides	Uranium-235 (pCi/g)	2/74	-0.06	0.22	0.22	0.25	0.06	0.07	D	0.25		0.25	0.25
Radionuclides	Uranium-238 (pCi/g)	50/74	0.66	1.72	0.65	2.04	1.18	0.33	L	2.04	2.02	2.04	2.02

UTL = Upper Tolerance Limit.

[a] Distribution codes:

D = Not determined because fewer than 5 detects or < 50% detects; parametric method to determine 95% UTL was not used.

L = Lognormal; parametric method was used to determine 95% UTL.

N = Normal; parametric method was used to determine 95% UTL.

X = Neither normal nor lognormal; parametric method to determine 95% UTL was not used.

[b] Background criteria was assigned as 0.0 for analytes never detected in background.

Attachment 2. Ground-Water Background Summary (Page 1 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
DEEP WELLS												
Anions	Chloride (mg/L)	2/3	0.50	0.50	0.83	1.21	0.85	N	1.21	3.57	1.21	1.21
Anions	Fluoride (mg/L)	2/4	0.05	0.25	0.20	0.24	0.18	N	0.25	0.66	0.25	0.24
Anions	Nitrate (mg/L)	1/4	0.01	0.05	0.10	0.10	0.05	D	0.10		0.10	0.10
Anions	Nitrite (mg/L)	0/3	0.01	0.05			0.03	O	0.10		0.05	0.00
Anions	Sulfate (mg/L)	1/4	0.25	1.25	6.93	6.93	2.17	D	6.93		6.93	6.93
GENERA	Ammonia (mg/L)	4/4			5.08	6.70	5.87	L	6.70	11.20	6.70	6.70
GENERA	Phosphorous (mg/L)	3/3			1.14	1.24	1.20	N	1.24	1.59	1.24	1.24
GENERA	Silicon (mg/L)	1/1			8.36	8.36	8.36	X	8.36		8.36	8.36
MISC	Total Dissolved Solids (mg/L)	3/3			512.00	552.00	535.00	N	552.00	692.00	552.00	552.00
MISC	Total Suspended Solids (mg/L)	3/3			43.00	49.00	46.70	N	49.00	71.30	49.00	49.00
Metals	Aluminum (mg/L)	1/4	0.02	0.09	0.05	0.05	0.06	D	0.09		0.09	0.05
Metals	Antimony (mg/L)	0/4	0.00	0.02			0.01	O	0.04		0.02	0.00
Metals	Arsenic (mg/L)	4/4			0.07	0.08	0.08	L	0.08	0.11	0.08	0.08
Metals	Barium (mg/L)	4/4			0.40	0.42	0.41	N	0.42	0.48	0.42	0.42
Metals	Beryllium (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Boron (mg/L)	4/4			0.19	0.21	0.20	L	0.21	0.26	0.21	0.21
Metals	Cadmium (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Calcium (mg/L)	4/4			104.00	113.00	109.00	N	113.00	129.00	113.00	113.00
Metals	Chromium (mg/L)	1/4	0.00	0.00	0.01	0.01	0.00	D	0.01		0.01	0.01
Metals	Cobalt (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Copper (mg/L)	1/4	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Metals	Iron (mg/L)	4/4			13.20	15.20	14.50	N	15.20	19.20	15.20	15.20
Metals	Lead (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Lithium (mg/L)	0/4	0.00	0.01			0.01	O	0.03		0.01	0.00
Metals	Magnesium (mg/L)	4/4			39.70	42.60	41.50	N	42.60	48.20	42.60	42.60
Metals	Manganese (mg/L)	4/4			0.20	0.23	0.22	N	0.23	0.29	0.23	0.23
Metals	Mercury (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Molybdenum (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Nickel (mg/L)	1/4	0.00	0.01	0.00	0.00	0.00	D	0.01		0.01	0.00
Metals	Orthophosphate (mg/L)	0/1	0.05	0.05			0.05	O	0.10		0.05	0.00
Metals	Potassium (mg/L)	4/4			2.00	3.51	2.49	L	3.51	9.17	3.51	3.51
Metals	Selenium (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Silver (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Sodium (mg/L)	4/4			44.40	51.00	47.40	L	51.00	63.40	51.00	51.00
Metals	Strontium (mg/L)	4/4			0.68	0.74	0.72	N	0.74	0.84	0.74	0.74
Metals	Thallium (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Titanium (mg/L)	2/3	0.00	0.00	0.00	0.01	0.00	N	0.01	0.04	0.01	0.01
Metals	Uranium (mg/L)	1/4	0.03	0.07	0.00	0.00	0.04	D	0.07		0.07	0.00
Metals	Vanadium (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Metals	Zinc (mg/L)	4/4			0.01	0.05	0.02	L	0.05	1.55	0.05	0.05
Organics-Herbicides	2,4,5-T (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	2,4-D (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	2,4-DB (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dalapon (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00

Attachment 2. Ground-Water Background Summary (Page 2 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Herbicides	Dicamba (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dichloroprop (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dinoseb (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	MCPA (mg/L)	0/3	0.20	0.20			0.20	O	0.40		0.20	0.00
Organics-Herbicides	MCPP (mg/L)	0/3	0.20	0.20			0.20	O	0.40		0.20	0.00
Organics-Herbicides	Silvex (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	4,4'-DDD (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	4,4'-DDE (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	4,4'-DDT (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Aldrin (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Dieldrin (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endosulfan I (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endosulfan II (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endosulfan sulfate (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endrin (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endrin aldehyde (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endrin ketone (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Heptachlor (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Heptachlor epoxide (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Lindane (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Methoxychlor (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1016 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1221 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1232 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1242 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1248 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1254 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1260 (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Toxaphene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Pesticide/PCB	alpha-BHC (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	alpha-Chlordane (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	beta-BHC (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	delta-BHC (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	gamma-Chlordane (mg/L)	0/3	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Semivolatile	1,2,4-Trichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	1,2-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	1,3-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	1,4-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4,5-Trichlorophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2,4,6-Trichlorophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4-Dichlorophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4-Dimethylphenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4-Dinitrophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2,4-Dinitrotoluene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,6-Dinitrotoluene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00

Attachment 2. Ground-Water Background Summary (Page 3 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Semivolatile	2-Chloronaphthalene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Chlorophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Methyl-4,6-dinitrophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2-Methylnaphthalene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Methylphenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2-Nitrophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	3,3'-Dichlorobenzidine (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	3-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	4-Bromophenyl phenyl ether (mg/I	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Chloro-3-methylphenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Chlorobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Chlorophenyl phenyl ether (mg/I	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Methylphenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	4-Nitrophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	Acenaphthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Acenaphthylene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Anthracene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benz(a)anthracene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(a)pyrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(b)fluoranthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(ghi)perylene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(k)fluoranthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-chloroethoxy)methane (mg/I	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-chloroethyl) ether (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-chloroisopropyl) ether (mg/L	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-ethylhexyl)phthalate (mg/L)	1/4	0.01	0.01	0.00	0.00	0.00	D	0.01		0.01	0.00
Organics-Semivolatile	Butyl benzyl phthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Carbazole (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Chrysene (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Di-n-butyl phthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Di-n-octylphthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Dibenz(a,h)anthracene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Dibenzofuran (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Diethyl phthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Dimethyl phthalate (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Fluoranthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Fluorene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachlorobutadiene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachlorocyclopentadiene (mg/L	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachloroethane (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Indeno(1,2,3-cd)pyrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Isophorone (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00

Attachment 2. Ground-Water Background Summary (Page 4 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Semivolatile	N-Nitroso-di-n-propylamine (mg/L	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	N-Nitrosodiphenylamine (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Naphthalene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Nitrobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Pentachlorophenol (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	Phenanthrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Phenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Pyrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Volatile	1,1,1-Trichloroethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1,2,2-Tetrachloroethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1,2-Trichloro-1,2,2-trifluoroethai	0/3	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	1,1,2-Trichloroethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1-Dichloroethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1-Dichloroethene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,2-Dichloroethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,2-Dichloroethene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,2-Dichloropropane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	2-Butanone (mg/L)	0/4	0.00	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	2-Hexanone (mg/L)	0/4	0.00	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	4-Methyl-2-pentanone (mg/L)	0/4	0.00	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	Acetone (mg/L)	0/3	0.01	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	Benzene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Bromodichloromethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Bromoform (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Bromomethane (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	Carbon disulfide (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Carbon tetrachloride (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Chlorobenzene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Chloroethane (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	Chloroform (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Chloromethane (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	Dibromochloromethane (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Dimethylbenzene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Ethylbenzene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Methylene chloride (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Styrene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Tetrachloroethene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Toluene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Trichloroethene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Vinyl chloride (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	cis-1,3-Dichloropropene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	trans-1,3-Dichloropropene (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Radionuclides	Actinium-227 (pCi/L)	0/1	-0.01	-0.01			-0.01	O	-0.01		-0.01	0.00
Radionuclides	Lead-210 (pCi/L)	0/1	0.50	0.50			0.50	O	0.50		0.50	0.50
Radionuclides	Protactinium-231 (pCi/L)	0/1	151.00	151.00			151.00	O	151.00		151.00	151.00

Attachment 2. Ground-Water Background Summary (Page 5 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Radionuclides	Radium-226 (pCi/L)	2/3	1.36	1.36	0.83	1.03	1.07	L	1.36	7.05	1.36	1.03
Radionuclides	Radium-228 (pCi/L)	0/1	0.00	0.00			0.00	O	0.00		0.00	0.00
Radionuclides	Thorium-228 (pCi/L)	0/3	0.00	0.62			0.40	O	0.62		0.62	0.62
Radionuclides	Thorium-230 (pCi/L)	1/3	-0.07	0.02	0.63	0.63	0.20	D	0.63		0.63	0.63
Radionuclides	Thorium-232 (pCi/L)	0/3	-0.07	0.00			-0.02	O	0.00		0.00	0.00
Radionuclides	Uranium-234 (pCi/L)	0/2	-0.10	-0.06			-0.08	O	-0.06		-0.06	0.00
Radionuclides	Uranium-235 (pCi/L)	0/2	-0.07	0.49			0.21	O	0.49		0.49	0.49
Radionuclides	Uranium-238 (pCi/L)	0/2	0.00	0.11			0.06	O	0.11		0.11	0.11
SHALLOW WELLS												
Anions	Chloride (mg/L)	4/4			7.85	13.40	10.50	L	13.40	34.00	13.40	13.40
Anions	Fluoride (mg/L)	1/4	0.10	0.25	0.25	0.25	0.21	D	0.25		0.25	0.25
Anions	Nitrate (mg/L)	4/4			0.19	0.72	0.45	N	0.72	1.59	0.72	0.72
Anions	Nitrite (mg/L)	0/3	0.01	0.05			0.03	O	0.10		0.05	0.00
Anions	Sulfate (mg/L)	4/4			80.30	376.00	176.00	L	376.00	4580.00	376.00	376.00
GENERA	Ammonia (mg/L)	1/4	0.03	0.50	0.29	0.29	0.23	D	0.50		0.50	0.29
GENERA	Phosphorous (mg/L)	3/3			0.06	0.08	0.07	X	0.08		0.08	0.08
GENERA	Silicon (mg/L)	1/1			7.95	7.95	7.95	X	7.95		7.95	7.95
MISC	Total Dissolved Solids (mg/L)	3/3			552.00	692.00	607.00	L	692.00	1510.00	692.00	692.00
MISC	Total Suspended Solids (mg/L)	2/3	0.50	0.50	2.00	17.00	6.50	L	17.00	2070000.00	17.00	17.00
Metals	Aluminum (mg/L)	0/4	0.00	0.02			0.01	O	0.04		0.02	0.00
Metals	Antimony (mg/L)	0/4	0.00	0.02			0.01	O	0.04		0.02	0.00
Metals	Arsenic (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Barium (mg/L)	4/4			0.17	0.20	0.19	N	0.20	0.26	0.20	0.20
Metals	Beryllium (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Boron (mg/L)	3/4	0.01	0.01	0.03	0.06	0.04	N	0.06	0.17	0.06	0.06
Metals	Cadmium (mg/L)	1/4	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Metals	Calcium (mg/L)	4/4			106.00	122.00	116.00	N	122.00	150.00	122.00	122.00
Metals	Chromium (mg/L)	2/4	0.00	0.00	0.00	0.01	0.00	L	0.01	0.76	0.01	0.01
Metals	Cobalt (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Copper (mg/L)	1/4	0.00	0.00	0.01	0.01	0.00	D	0.01		0.01	0.01
Metals	Iron (mg/L)	0/4	0.01	0.04			0.03	O	0.09		0.04	0.00
Metals	Lead (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Lithium (mg/L)	1/4	0.00	0.02	0.01	0.01	0.01	D	0.02		0.02	0.01
Metals	Magnesium (mg/L)	4/4			44.40	57.00	51.20	N	57.00	77.90	57.00	57.00
Metals	Manganese (mg/L)	4/4			0.04	1.58	0.43	X	1.58		1.58	1.58
Metals	Mercury (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Molybdenum (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Nickel (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Metals	Orthophosphate (mg/L)	0/1	0.05	0.05			0.05	O	0.10		0.05	0.00
Metals	Potassium (mg/L)	3/4	0.90	0.90	1.03	2.17	1.54	L	2.17	15.10	2.17	2.17
Metals	Selenium (mg/L)	0/4	0.00	0.00			0.00	O	0.00		0.00	0.00
Metals	Silver (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Sodium (mg/L)	4/4			19.40	22.00	20.60	L	22.00	26.80	22.00	22.00
Metals	Strontium (mg/L)	4/4			0.28	0.32	0.30	L	0.32	0.41	0.32	0.32

Attachment 2. Ground-Water Background Summary (Page 6 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Metals	Thallium (mg/L)	0/4	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Titanium (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Metals	Uranium (mg/L)	1/4	0.03	0.07	0.00	0.00	0.04	D	0.07		0.07	0.00
Metals	Vanadium (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Metals	Zinc (mg/L)	3/4	0.01	0.01	0.01	0.01	0.01	N	0.01	0.03	0.01	0.01
Organics-Herbicides	2,4,5-T (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	2,4-D (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	2,4-DB (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dalapon (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dicamba (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dichloroprop (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	Dinoseb (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Herbicides	MCPA (mg/L)	0/2	0.20	0.20			0.20	O	0.40		0.20	0.00
Organics-Herbicides	MCPP (mg/L)	0/2	0.20	0.20			0.20	O	0.40		0.20	0.00
Organics-Herbicides	Silvex (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	4,4'-DDD (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	4,4'-DDE (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	4,4'-DDT (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Aldrin (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Dieldrin (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endosulfan I (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endosulfan II (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endosulfan sulfate (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endrin (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endrin aldehyde (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Endrin ketone (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Heptachlor (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Heptachlor epoxide (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Lindane (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Methoxychlor (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1016 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1221 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1232 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1242 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1248 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1254 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	PCB-1260 (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	Toxaphene (mg/L)	0/2	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Pesticide/PCB	alpha-BHC (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	alpha-Chlordane (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	beta-BHC (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	delta-BHC (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Pesticide/PCB	gamma-Chlordane (mg/L)	0/2	0.00	0.00			0.00	O	0.00		0.00	0.00
Organics-Semivolatile	1,2,4-Trichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	1,2-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00

Attachment 2. Ground-Water Background Summary (Page 7 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Semivolatile	1,3-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	1,4-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4,5-Trichlorophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2,4,6-Trichlorophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4-Dichlorophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4-Dimethylphenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,4-Dinitrophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2,4-Dinitrotoluene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2,6-Dinitrotoluene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Chloronaphthalene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Chlorophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Methyl-4,6-dinitrophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2-Methylnaphthalene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Methylphenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	2-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	2-Nitrophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	3,3'-Dichlorobenzidine (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	3-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	4-Bromophenyl phenyl ether (mg/I	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Chloro-3-methylphenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Chlorobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Chlorophenyl phenyl ether (mg/I	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Methylphenol (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	4-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	4-Nitrophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	Acenaphthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Acenaphthylene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Anthracene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benz(a)anthracene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(a)pyrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(b)fluoranthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(ghi)perylene (mg/L)	0/4	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Semivolatile	Benzo(k)fluoranthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-chloroethoxy)methane (mg/I	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-chloroethyl) ether (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-chloroisopropyl) ether (mg/L	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Bis(2-ethylhexyl)phthalate (mg/L)	1/4	0.01	0.01	0.01	0.01	0.01	D	0.01		0.01	0.01
Organics-Semivolatile	Butyl benzyl phthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Carbazole (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Chrysene (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Di-n-butyl phthalate (mg/L)	1/4	0.01	0.01	0.00	0.00	0.00	D	0.01		0.01	0.00
Organics-Semivolatile	Di-n-octylphthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Dibenz(a,h)anthracene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Dibenzofuran (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Diethyl phthalate (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00

Attachment 2. Ground-Water Background Summary (Page 8 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Semivolatile	Dimethyl phthalate (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Fluoranthene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Fluorene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachlorobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachlorobutadiene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachlorocyclopentadiene (mg/L	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Hexachloroethane (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Indeno(1,2,3-cd)pyrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Isophorone (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	N-Nitroso-di-n-propylamine (mg/L	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	N-Nitrosodiphenylamine (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Naphthalene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Nitrobenzene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Pentachlorophenol (mg/L)	0/3	0.01	0.01			0.01	O	0.03		0.01	0.00
Organics-Semivolatile	Phenanthrene (mg/L)	0/4	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Phenol (mg/L)	0/3	0.01	0.01			0.01	O	0.01		0.01	0.00
Organics-Semivolatile	Pyrene (mg/L)	1/4	0.01	0.01	0.00	0.00	0.00	D	0.01		0.01	0.00
Organics-Volatile	1,1,1-Trichloroethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1,2,2-Tetrachloroethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1,2-Trichloro-1,2,2-trifluoroetha	0/2	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	1,1,2-Trichloroethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1-Dichloroethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,1-Dichloroethene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,2-Dichloroethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,2-Dichloroethene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	1,2-Dichloropropane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	2-Butanone (mg/L)	0/3	0.00	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	2-Hexanone (mg/L)	0/3	0.00	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	4-Methyl-2-pentanone (mg/L)	0/3	0.00	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	Acetone (mg/L)	0/2	0.01	0.01			0.01	O	0.02		0.01	0.00
Organics-Volatile	Benzene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Bromodichloromethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Bromoform (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Bromomethane (mg/L)	0/3	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	Carbon disulfide (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Carbon tetrachloride (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Chlorobenzene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Chloroethane (mg/L)	0/3	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	Chloroform (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Chloromethane (mg/L)	0/3	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	Dibromochloromethane (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Dimethylbenzene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Ethylbenzene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Methylene chloride (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Styrene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00

Attachment 2. Ground-Water Background Summary (Page 9 of 9)

Analysis Type	Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Organics-Volatile	Tetrachloroethene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Toluene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Trichloroethene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	Vinyl chloride (mg/L)	0/3	0.00	0.01			0.00	O	0.01		0.01	0.00
Organics-Volatile	cis-1,3-Dichloropropene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Organics-Volatile	trans-1,3-Dichloropropene (mg/L)	0/3	0.00	0.00			0.00	O	0.01		0.00	0.00
Radionuclides	Actinium-227 (pCi/L)	0/1	-0.01	-0.01			-0.01	O	-0.01		-0.01	0.00
Radionuclides	Lead-210 (pCi/L)	1/1			0.62	0.62	0.62	X	0.62		0.62	0.62
Radionuclides	Protactinium-231 (pCi/L)	0/1	176.00	176.00			176.00	O	176.00		176.00	176.00
Radionuclides	Radium-226 (pCi/L)	0/4	-0.25	0.91			0.13	O	0.91		0.91	0.91
Radionuclides	Radium-228 (pCi/L)	0/1	0.00	0.00			0.00	O	0.00		0.00	0.00
Radionuclides	Thorium-228 (pCi/L)	1/4	0.00	0.96	0.66	0.66	0.44	D	0.96		0.96	0.66
Radionuclides	Thorium-230 (pCi/L)	0/4	0.00	1.18			0.53	O	1.18		1.18	1.18
Radionuclides	Thorium-232 (pCi/L)	0/4	0.00	0.25			0.06	O	0.25		0.25	0.25
Radionuclides	Uranium-234 (pCi/L)	2/3	0.67	0.67	0.97	6.07	2.57	L	6.07	13200.00	6.07	6.07
Radionuclides	Uranium-235 (pCi/L)	0/3	-0.14	0.47			0.09	O	0.47		0.47	0.47
Radionuclides	Uranium-238 (pCi/L)	2/2			1.36	2.28	1.82	N	2.28	2.28	2.28	2.28

UTL = Upper Tolerance Limit.

[a] Distribution codes:

D = Not determined because fewer than 5 detects or < 50% detects; parametric method to determine 95% UTL was not used.

L = Lognormal; parametric method was used to determine 95% UTL.

N = Normal; parametric method was used to determine 95% UTL.

O = Not determined because there were no detected concentrations; parametric method to determine 95% UTL was not used.

X = Neither normal nor lognormal; parametric method to determine 95% UTL was not used.

[b] Background criteria was assigned as 0.0 for analytes never detected in background.

Attachment 3. Surface Water Background Summary (Page 1 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Chloride (mg/L)	10/10			89.00	240.00	143.00	41.93	L	240.00	306.00	240.00	240.00
Fluoride (mg/L)	10/10			0.48	1.10	0.62	0.19	X	1.10		1.10	1.10
Nitrate (mg/L)	10/11	0.01	0.01	0.13	2.51	1.55	0.84	N	2.51	3.91	2.51	2.51
Nitrite (mg/L)	7/10	0.01	0.05	0.02	0.19	0.10	0.07	N	0.19	0.30	0.19	0.19
Sulfate (mg/L)	10/10			74.00	210.00	106.00	42.41	L	210.00	270.00	210.00	210.00
Ammonia (mg/L)	10/10			0.02	0.90	0.28	0.26	L	0.90	3.46	0.90	0.90
Chromium, hexavalent (mg/L)	0/1	0.01	0.01			0.01		O	0.01		0.01	0.00
Phosphorous (mg/L)	9/11	0.03	0.03	0.10	0.54	0.19	0.15	L	0.54	2.09	0.54	0.54
Aluminum (mg/L)	2/7	0.01	0.13	1.00	1.13	0.34	0.50	D	1.13		1.13	1.13
Antimony (mg/L)	3/9	0.01	0.02	0.00	0.04	0.01	0.01	D	0.04		0.04	0.04
Arsenic (mg/L)	7/9	0.00	0.00	0.00	0.01	0.00	0.00	L	0.01	0.01	0.01	0.01
Barium (mg/L)	9/9			0.08	0.17	0.13	0.03	N	0.17	0.21	0.17	0.17
Beryllium (mg/L)	2/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Boron (mg/L)	10/11	0.05	0.05	0.07	0.16	0.10	0.03	L	0.16	0.22	0.16	0.16
Cadmium (mg/L)	3/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Calcium (mg/L)	11/11			55.00	101.00	82.70	15.66	N	101.00	127.00	101.00	101.00
Chromium (mg/L)	4/9	0.00	0.00	0.00	0.05	0.01	0.02	D	0.05		0.05	0.05
Cobalt (mg/L)	2/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Copper (mg/L)	6/9	0.00	0.01	0.00	0.02	0.01	0.01	L	0.02	0.10	0.02	0.02
Cyanide (mg/L)	2/2			0.01	0.01	0.01	0.00	X	0.01		0.01	0.01
Iron (mg/L)	6/9	0.02	0.03	0.03	2.15	0.65	0.88	X	2.15		2.15	2.15
Lead (mg/L)	5/9	0.00	0.00	0.00	0.01	0.00	0.00	X	0.01		0.01	0.01
Lithium (mg/L)	5/9	0.00	0.01	0.00	0.04	0.01	0.01	L	0.04	0.14	0.04	0.04
Magnesium (mg/L)	11/11			23.00	38.10	31.40	5.08	N	38.10	45.70	38.10	38.10
Manganese (mg/L)	9/9			0.16	0.63	0.34	0.13	L	0.63	0.98	0.63	0.63
Mercury (mg/L)	2/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Molybdenum (mg/L)	3/9	0.00	0.01	0.01	0.01	0.01	0.00	D	0.01		0.01	0.01
Nickel (mg/L)	4/9	0.01	0.01	0.00	0.01	0.00	0.00	D	0.01		0.01	0.01
Orthophosphate (mg/L)	4/4			0.16	0.46	0.27	0.13	L	0.46	2.53	0.46	0.46
Potassium (mg/L)	11/11			5.40	15.00	9.50	2.57	L	15.00	19.70	15.00	15.00
Selenium (mg/L)	3/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Silver (mg/L)	2/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Sodium (mg/L)	11/11			56.50	140.00	78.80	26.30	L	140.00	173.00	140.00	140.00
Strontium (mg/L)	11/11			0.14	0.62	0.48	0.15	X	0.62		0.62	0.62
Thallium (mg/L)	2/9	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Titanium (mg/L)	1/7	0.00	0.03	0.03	0.03	0.01	0.01	D	0.03		0.03	0.03

Attachment 3. Surface Water Background Summary (Page 2 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Uranium (mg/L)	21/28	0.06	0.07	0.00	0.00	0.02	0.03	X	0.07		0.07	0.00
Vanadium (mg/L)	7/9	0.01	0.01	0.00	0.02	0.01	0.00	N	0.02	0.02	0.02	0.02
Zinc (mg/L)	8/9	0.01	0.01	0.00	0.06	0.03	0.02	L	0.06	0.46	0.06	0.06
2,4,5-T (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
2,4-D (mg/L)	1/2	0.00	0.00	0.01	0.01	0.00	0.00	N	0.01	0.01	0.01	0.01
2,4-DB (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Dalapon (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Dicamba (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Dichloroprop (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Dinoseb (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
MCPA (mg/L)	0/2	0.20	0.21			0.20	0.00	O	0.41		0.21	0.00
MCPP (mg/L)	0/2	0.20	0.21			0.20	0.00	O	0.41		0.21	0.00
Silvex (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
4,4'-DDD (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
4,4'-DDE (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
4,4'-DDT (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Aldrin (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Dieldrin (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Endosulfan I (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Endosulfan II (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Endosulfan sulfate (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Endrin (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Endrin aldehyde (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Endrin ketone (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Heptachlor (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Heptachlor epoxide (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Lindane (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Methoxychlor (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1016 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1221 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1232 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1242 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1248 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1254 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
PCB-1260 (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
Toxaphene (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00

Attachment 3. Surface Water Background Summary (Page 3 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
alpha-BHC (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
alpha-Chlordane (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
beta-BHC (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
delta-BHC (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
gamma-Chlordane (mg/L)	0/3	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
1,2,4-Trichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
1,2-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
1,3-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
1,4-Dichlorobenzene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2,4,5-Trichlorophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
2,4,6-Trichlorophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2,4-Dichlorophenol (mg/L)	1/6	0.00	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
2,4-Dimethylphenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2,4-Dinitrophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
2,4-Dinitrotoluene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2,6-Dinitrotoluene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2-Chloronaphthalene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2-Chlorophenol (mg/L)	1/6	0.00	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
2-Methyl-4,6-dinitrophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
2-Methylnaphthalene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2-Methylphenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
2-Nitrophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
3,3'-Dichlorobenzidine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
3-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
4-Bromophenyl phenyl ether (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
4-Chloro-3-methylphenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
4-Chlorobenzenamine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
4-Chlorophenyl phenyl ether (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
4-Methylphenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
4-Nitrobenzenamine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
4-Nitrophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
Acenaphthene (mg/L)	1/6	0.00	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
Acenaphthylene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Anthracene (mg/L)	2/6	0.01	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
Benz(a)anthracene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00

Attachment 3. Surface Water Background Summary (Page 4 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Benzo(a)pyrene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Benzo(b)fluoranthene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Benzo(ghi)perylene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Benzo(k)fluoranthene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Bis(2-chloroethoxy)methane (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Bis(2-chloroethyl) ether (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Bis(2-chloroisopropyl) ether (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Bis(2-ethylhexyl)phthalate (mg/L)	1/6	0.00	0.01	0.01	0.01	0.00	0.00	D	0.01		0.01	0.01
Butyl benzyl phthalate (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Carbazole (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Chrysene (mg/L)	2/6	0.01	0.01	0.00	0.01	0.01	0.00	D	0.01		0.01	0.01
Di-n-butyl phthalate (mg/L)	0/6	0.00	0.01			0.00	0.00	O	0.01		0.01	0.00
Di-n-octylphthalate (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Dibenz(a,h)anthracene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Dibenzofuran (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Diethyl phthalate (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Dimethyl phthalate (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Fluoranthene (mg/L)	2/6	0.01	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
Fluorene (mg/L)	1/6	0.00	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
Hexachlorobenzene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Hexachlorobutadiene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Hexachlorocyclopentadiene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Hexachloroethane (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Indeno(1,2,3-cd)pyrene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Isophorone (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
N-Nitroso-di-n-propylamine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
N-Nitrosodiphenylamine (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Naphthalene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Nitrobenzene (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Pentachlorophenol (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.03		0.01	0.00
Phenanthrene (mg/L)	2/6	0.01	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
Phenol (mg/L)	1/6	0.00	0.01	0.02	0.02	0.01	0.01	D	0.02		0.02	0.02
Pyrene (mg/L)	2/6	0.01	0.01	0.00	0.00	0.00	0.00	D	0.01		0.01	0.00
1,1,1-Trichloroethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,1,2,2-Tetrachloroethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,1,2-Trichloro-1,2,2-trifluoroethane (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00

Attachment 3. Surface Water Background Summary (Page 5 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
1,1,2-Trichloroethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,1-Dichloroethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,1-Dichloroethene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,2,3,4-Tetramethylbenzene (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
1,2,3,5-Tetramethylbenzene (mg/L)	1/2	0.00	0.00	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
1,2,3-Trimethylbenzene (mg/L)	1/2	0.00	0.00	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
1,2,4-Trimethylbenzene (mg/L)	1/2	0.00	0.00	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
1,2-Dichloroethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,2-Dichloroethene (mg/L)	1/4	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
1,2-Dichloropropane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
1,3,5-Trimethylbenzene (mg/L)	1/2	0.00	0.00	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
1-Ethyl-2-methylbenzene (mg/L)	0/2	0.00	0.00			0.00	0.00	O	0.00		0.00	0.00
1-Methyl-4-(1-methylethyl)benzene (mg/L)	1/2	0.00	0.00	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
2-Butanone (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
2-Hexanone (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
4-Methyl-2-pentanone (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Acetone (mg/L)	3/6	0.01	0.04	0.00	0.02	0.02	0.01	L	0.04	0.29	0.04	0.02
Benzene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Bromodichloromethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Bromoform (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Bromomethane (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Carbon disulfide (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Carbon tetrachloride (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Chlorobenzene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Chloroethane (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Chloroform (mg/L)	1/6	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Chloromethane (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00
Dibromochloromethane (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Dimethylbenzene (mg/L)	1/6	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Ethylbenzene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Methylene chloride (mg/L)	2/6	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Styrene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Tetrachloroethene (mg/L)	1/6	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Toluene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Trichloroethene (mg/L)	1/6	0.00	0.00	0.00	0.00	0.00	0.00	D	0.00		0.00	0.00
Vinyl chloride (mg/L)	0/4	0.01	0.01			0.01	0.00	O	0.01		0.01	0.00

Attachment 3. Surface Water Background Summary (Page 6 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
cis-1,2-Dichloroethene (mg/L)	1/2	0.00	0.00	0.00	0.00	0.00	0.00	N	0.00	0.00	0.00	0.00
cis-1,3-Dichloropropene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
trans-1,3-Dichloropropene (mg/L)	0/4	0.00	0.00			0.00	0.00	O	0.01		0.00	0.00
Alpha activity (pCi/L)	2/2			2.10	7.86	4.98	4.07	N	7.86	7.86	7.86	7.86
Beta activity (pCi/L)	2/2			13.90	41.80	27.90	19.73	N	41.80	41.80	41.80	41.80
Radium-226 (pCi/L)	13/28	0.00	1.00	0.10	0.88	0.32	0.26	D	1.00		1.00	0.88
Radium-228 (pCi/L)	1/12	0.05	1.00	0.34	0.34	0.27	0.35	D	1.00		1.00	0.34
Thorium-228 (pCi/L)	5/11	-0.06	0.39	0.34	3.12	0.63	0.90	D	3.12		3.12	3.12
Thorium-230 (pCi/L)	12/28	-0.01	0.26	0.15	4.65	0.72	1.27	D	4.65		4.65	4.65
Thorium-232 (pCi/L)	0/24	0.00	0.62			0.11	0.12	O	0.62		0.62	0.00
Uranium-234 (pCi/L)	3/6	0.87	1.18	1.14	3.90	1.79	1.25	L	3.90	15.30	3.90	3.90
Uranium-235 (pCi/L)	0/7	-0.15	0.29			0.03	0.17	O	0.29		0.29	0.00
Uranium-238 (pCi/L)	7/7			0.83	5.05	1.99	1.45	L	5.05	12.50	5.05	5.05

Results less than the detection limit were set to 1/2 the reported detection limit except for radioisotopes.

UTL = Upper Tolerance Limit.

[a] Distribution codes:

D = Not determined because fewer than 5 detects or < 50% detects; parametric method to determine 95% UTL was not used.

L = Lognormal; parametric method was used to determine 95% UTL.

N = Normal; parametric method was used to determine 95% UTL.

O = Not determined because all concentrations were non-detects; parametric method to determine 95% UTL was not used.

X = Neither normal nor lognormal; parametric method to determine 95% UTL was not used.

[b] Background criteria was assigned as 0.0 for analytes never detected in background.

Attachment 4. Sediment Background Summary (Page 1 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Phosphorous (mg/kg)	2/2			1500	1700	1600	141.42	N	1700	1700	1700	1700
Aluminum (mg/kg)	4/4			3020	51000	23200	22905.70	L	51000	13800000	51000	51000
Antimony (mg/kg)	0/2	2.1	4.5			3.3	1.70	O	9		4.5	0
Arsenic (mg/kg)	2/4	5	11.2	2	13	7.8	5.17	N	13	34.4	13	13
Barium (mg/kg)	4/4			39.2	890	447	445.63	L	890	689000	890	890
Beryllium (mg/kg)	2/4	0.5	0.55	1.2	2	1.06	0.70	L	2	26.9	2	2
Bismuth (mg/kg)	0/2	5	5			5	0.00	O	10		5	0
Boron (mg/kg)	1/2	11.2	11.2	75.9	75.9	43.6	45.75	N	75.9	75.9	75.9	75.9
Cadmium (mg/kg)	2/4	0.225	0.55	2	4	1.69	1.72	L	4	757	4	4
Calcium (mg/kg)	4/4			13000	116000	67300	49182.48	N	116000	320000	116000	116000
Cerium (mg/kg)	2/2			65	85	75	14.14	N	85	85	85	85
Chromium (mg/kg)	4/4			9.8	140	62.8	58.73	L	140	17400	140	140
Cobalt (mg/kg)	2/4	1.55	5.6	30	31	17	15.64	L	31	16300	31	31
Copper (mg/kg)	4/4			8.6	330	107	150.01	L	330	111000	330	330
Europium (mg/kg)	0/2	1	1			1	0.00	O	2		1	0
Gallium (mg/kg)	2/2			16	18	17	1.41	N	18	18	18	18
Gold (mg/kg)	0/2	4	4			4	0.00	O	8		4	0
Holmium (mg/kg)	0/2	2	2			2	0.00	O	4		2	0
Iron (mg/kg)	4/4			8690	42000	24200	17762.68	N	42000	116000	42000	42000
Lanthanum (mg/kg)	2/2			28	38	33	7.07	N	38	38	38	38
Lead (mg/kg)	4/4			5.8	380	169	159.71	N	380	990	380	380
Lithium (mg/kg)	2/3	1.75	1.75	18	22	13.9	10.72	N	22	96	22	22
Magnesium (mg/kg)	4/4			7290	21000	11800	6226.78	L	21000	116000	21000	21000
Manganese (mg/kg)	4/4			410	3200	1610	1330.18	L	3200	186000	3200	3200
Mercury (mg/kg)	0/1	0.03	0.03			0.03		O	0.06		0.03	0
Molybdenum (mg/kg)	2/4	1.55	11.2	3	6	5.44	4.27	L	11.2	343	11.2	6
Neodymium (mg/kg)	2/2			28	35	31.5	4.95	N	35	35	35	35
Nickel (mg/kg)	4/4			9.1	72	37.3	31.98	N	72	202	72	72
Niobium (mg/kg)	1/2	2	2	7	7	4.5	3.54	N	7	7	7	7
Potassium (mg/kg)	3/4	560	560	655	15000	6800	7338.90	N	15000	44600	15000	15000
Scandium (mg/kg)	2/2			5	8	6.5	2.12	N	8	8	8	8
Selenium (mg/kg)	1/2	0.14	0.14	54.4	54.4	27.3	38.37	N	54.4	54.4	54.4	54.4
Silver (mg/kg)	1/4	0.345	1.1	4	4	1.61	1.63	D	4		4	4
Sodium (mg/kg)	3/4	560	560	1000	10000	4290	4436.86	L	10000	2740000	10000	10000
Strontium (mg/kg)	3/3			136	380	229	132.16	L	380	12900	380	380
Tantalum (mg/kg)	0/2	20	20			20	0.00	O	40		20	0

Attachment 4. Sediment Background Summary (Page 2 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Thallium (mg/kg)	0/2	0.265	11.2			5.73	7.73	O	22.4		11.2	0
Thorium (mg/kg)	2/2			8	9	8.5	0.71	N	9	9	9	9
Tin (mg/kg)	1/2	2.5	2.5	17	17	9.75	10.25	N	17	17	17	17
Titanium (mg/kg)	3/3			203	2800	1600	1309.89	N	2800	11600	2800	2800
Uranium (mg/kg)	14/15	7.85	7.85	1.51	8.69	3.53	2.23	L	8.69	12	8.69	8.69
Vanadium (mg/kg)	4/4			15.2	99	54.6	43.62	N	99	279	99	99
Ytterbium (mg/kg)	2/2			2	3	2.5	0.71	N	3	3	3	3
Yttrium (mg/kg)	2/2			18	24	21	4.24	N	24	24	24	24
Zinc (mg/kg)	4/4			66.3	1370	552	572.38	L	1370	222000	1370	1370
4,4'-DDD (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
4,4'-DDE (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
4,4'-DDT (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
Aldrin (mg/kg)	1/1			0.023	0.023	0.023		X	0.023		0.023	0.023
Dieldrin (mg/kg)	1/1			0.021	0.021	0.021		X	0.021		0.021	0.021
Endosulfan I (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
Endosulfan II (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
Endosulfan sulfate (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
Endrin (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
Endrin aldehyde (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
Endrin ketone (mg/kg)	0/1	0.0038	0.0038			0.0038		O	0.0076		0.0038	0
Heptachlor (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
Heptachlor epoxide (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
Lindane (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
Methoxychlor (mg/kg)	0/1	0.0195	0.0195			0.0195		O	0.039		0.0195	0
PCB-1016 (mg/kg)	0/1	0.038	0.038			0.038		O	0.076		0.038	0
PCB-1221 (mg/kg)	0/1	0.075	0.075			0.075		O	0.15		0.075	0
PCB-1232 (mg/kg)	0/1	0.038	0.038			0.038		O	0.076		0.038	0
PCB-1242 (mg/kg)	0/1	0.038	0.038			0.038		O	0.076		0.038	0
PCB-1248 (mg/kg)	0/1	0.038	0.038			0.038		O	0.076		0.038	0
PCB-1254 (mg/kg)	0/1	0.038	0.038			0.038		O	0.076		0.038	0
PCB-1260 (mg/kg)	0/1	0.038	0.038			0.038		O	0.076		0.038	0
Toxaphene (mg/kg)	0/1	0.195	0.195			0.195		O	0.39		0.195	0
alpha-BHC (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
alpha-Chlordane (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
beta-BHC (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
delta-BHC (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0

Attachment 4. Sediment Background Summary (Page 3 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
gamma-Chlordane (mg/kg)	0/1	0.002	0.00195			0.00195		O	0.0039		0.00195	0
1,2,4-Trichlorobenzene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
1,2-Dichlorobenzene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
1,3-Dichlorobenzene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
1,4-Dichlorobenzene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2,4,5-Trichlorophenol (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
2,4,6-Trichlorophenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2,4-Dichlorophenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2,4-Dimethylphenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2,4-Dinitrophenol (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
2,4-Dinitrotoluene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2,6-Dinitrotoluene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2-Chloronaphthalene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2-Chlorophenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2-Methyl-4,6-dinitrophenol (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
2-Methylnaphthalene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2-Methylphenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
2-Nitrobenzenamine (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
2-Nitrophenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
3,3'-Dichlorobenzidine (mg/kg)	0/2	0.19	1.95			1.07	1.24	O	3.9		1.95	0
3-Nitrobenzenamine (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
4-Bromophenyl phenyl ether (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
4-Chloro-3-methylphenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
4-Chlorobenzenamine (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
4-Chlorophenyl phenyl ether (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
4-Methylphenol (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
4-Nitrobenzenamine (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
4-Nitrophenol (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
Acenaphthene (mg/kg)	1/2	0.95	0.95	0.25	0.25	0.6	0.49	N	0.95	0.25	0.95	0.25
Acenaphthylene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Anthracene (mg/kg)	1/2	0.95	0.95	0.2	0.2	0.575	0.53	N	0.95	0.2	0.95	0.2
Benz(a)anthracene (mg/kg)	4/4			0.7	2.3	1.35	0.70	L	2.3	16.6	2.3	2.3
Benzo(a)pyrene (mg/kg)	3/4	0.95	0.95	0.69	1.7	1.16	0.44	L	1.7	8.16	1.7	1.7
Benzo(b)fluoranthene (mg/kg)	2/4	0.335	0.95	1.1	1.5	0.971	0.48	N	1.5	3.46	1.5	1.5
Benzo(ghi)perylene (mg/kg)	3/4	0.95	0.95	0.34	1.8	0.973	0.61	L	1.8	28.3	1.8	1.8
Benzo(k)fluoranthene (mg/kg)	3/4	0.95	0.95	0.52	1.4	1.02	0.38	N	1.4	2.97	1.4	1.4

Attachment 4. Sediment Background Summary (Page 4 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Benzoic acid (mg/kg)	0/1	4.85	4.85			4.85		O	9.7		4.85	0
Bis(2-chloroethoxy)methane (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Bis(2-chloroethyl) ether (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Bis(2-chloroisopropyl) ether (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Bis(2-ethylhexyl)phthalate (mg/kg)	1/2	0.245	0.245	0.56	0.56	0.403	0.22	N	0.56	0.56	0.56	0.56
Butyl benzyl phthalate (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Carbazole (mg/kg)	0/1	0.19	0.19			0.19		O	0.38		0.19	0
Chrysene (mg/kg)	4/4			0.87	2.4	1.69	0.63	N	2.4	4.93	2.4	2.4
Di-n-butyl phthalate (mg/kg)	1/2	0.95	0.95	0.047	0.047	0.499	0.64	N	0.95	0.047	0.95	0.047
Di-n-octylphthalate (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Dibenz(a,h)anthracene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Dibenzofuran (mg/kg)	1/2	0.95	0.95	0.086	0.086	0.518	0.61	N	0.95	0.086	0.95	0.086
Diethyl phthalate (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Dimethyl phthalate (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Fluoranthene (mg/kg)	4/4			1.4	7.1	3.95	2.67	L	7.1	161	7.1	7.1
Fluorene (mg/kg)	1/2	0.95	0.95	0.2	0.2	0.575	0.53	N	0.95	0.2	0.95	0.2
Hexachlorobenzene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Hexachlorobutadiene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Hexachlorocyclopentadiene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Hexachloroethane (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Indeno(1,2,3-cd)pyrene (mg/kg)	3/4	0.95	0.95	0.31	1.5	0.89	0.49	N	1.5	3.41	1.5	1.5
Isophorone (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
N-Nitroso-di-n-propylamine (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
N-Nitrosodiphenylamine (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Naphthalene (mg/kg)	1/2	0.95	0.95	0.04	0.04	0.495	0.64	N	0.95	0.04	0.95	0.04
Nitrobenzene (mg/kg)	0/2	0.19	0.95			0.57	0.54	O	1.9		0.95	0
Pentachlorophenol (mg/kg)	0/2	0.48	4.85			2.67	3.09	O	9.7		4.85	0
Phenanthrene (mg/kg)	4/4			0.84	5.7	2.64	2.15	L	5.7	134	5.7	5.7
Phenol (mg/kg)	1/2	0.19	0.19	0.97	0.97	0.58	0.55	N	0.97	0.97	0.97	0.97
Pyrene (mg/kg)	4/4			1.4	4	2.5	1.11	L	4	22.6	4	4
1,1,1-Trichloroethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
1,1,2,2-Tetrachloroethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
1,1,2-Trichloro-1,2,2-trifluoroethane (mg/l	0/1	0.006	0.006			0.006		O	0.012		0.006	0
1,1,2-Trichloroethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
1,1-Dichloroethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
1,1-Dichloroethene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0

Attachment 4. Sediment Background Summary (Page 5 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
1,2-Dichloroethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
1,2-Dichloroethene (mg/kg)	0/1	0.003	0.003			0.003		O	0.006		0.003	0
1,2-Dichloropropane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
2-Butanone (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
2-Chloroethyl vinyl ether (mg/kg)	0/1	0.006	0.006			0.006		O	0.012		0.006	0
2-Hexanone (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
4-Methyl-2-pentanone (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
Acetone (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
Acrolein (mg/kg)	0/1	0.006	0.006			0.006		O	0.012		0.006	0
Acrylonitrile (mg/kg)	0/1	0.006	0.006			0.006		O	0.012		0.006	0
Benzene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Benzenemethanol (mg/kg)	0/1	0.95	0.95			0.95		O	1.9		0.95	0
Bromodichloromethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Bromoform (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Bromomethane (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
Carbon disulfide (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Carbon tetrachloride (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Chlorobenzene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Chloroethane (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
Chloroform (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Chloromethane (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
Dibromochloromethane (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Dimethylbenzene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Ethylbenzene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Methylene chloride (mg/kg)	1/2	0.003	0.003	0.03	0.03	0.0165	0.02	N	0.03	0.03	0.03	0.03
Styrene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Tetrachloroethene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Toluene (mg/kg)	1/2	0.003	0.003	0.002	0.002	0.0025	0.00	N	0.003	0.002	0.003	0.002
Trichloroethene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Vinyl acetate (mg/kg)	0/1	0.006	0.006			0.006		O	0.012		0.006	0
Vinyl chloride (mg/kg)	0/2	0.006	0.006			0.006	0.00	O	0.012		0.006	0
cis-1,3-Dichloropropene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
trans-1,2-Dichloroethene (mg/kg)	0/1	0.003	0.003			0.003		O	0.006		0.003	0
trans-1,3-Dichloropropene (mg/kg)	0/2	0.003	0.003			0.003	0.00	O	0.006		0.003	0
Actinium-227 (pCi/g)	0/1	0.12	0.12			0.12		O	0.12		0.12	0
Americium-241 (pCi/g)	0/1	0.01	0.01			0.01		O	0.01		0.01	0

Attachment 4. Sediment Background Summary (Page 6 of 6)

Analyte (units)	Freq. of Det.	Min. Nondet.	Max. Nondet.	Min. Det.	Max. Det.	Average Result	Standard Deviation	Dist.[a]	99th Percentile	Parametric 95% UTL	Nonparametric 95% UTL	Background Criteria[b]
Beryllium-7 (pCi/g)	1/1			1.6	1.6	1.6		X	1.6		1.6	1.6
Bismuth-211 (pCi/g)	1/1			2.9	2.9	2.9		X	2.9		2.9	2.9
Bismuth-212 (pCi/g)	1/1			1.6	1.6	1.6		X	1.6		1.6	1.6
Bismuth-214 (pCi/g)	1/1			0.97	0.97	0.97		X	0.97		0.97	0.97
Cesium-137 (pCi/g)	0/2	0	0.12			0.06	0.08	O	0.12		0.12	0
Chromium-51 (pCi/g)	1/1			1.8	1.8	1.8		X	1.8		1.8	1.8
Lead-212 (pCi/g)	1/1			0.96	0.96	0.96		X	0.96		0.96	0.96
Lead-214 (pCi/g)	0/1	1.5	1.5			1.5		O	1.5		1.5	0
Potassium-40 (pCi/g)	2/2			7.32	15.6	11.5	5.85	N	15.6	15.6	15.6	15.6
Protactinium-231 (pCi/g)	0/1	0.29	0.29			0.29		O	0.29		0.29	0
Radium-226 (pCi/g)	13/15	-0.01	1.2	0.51	4.87	1.31	1.09	L	4.87	4.73	4.87	4.73
Radium-228 (pCi/g)	5/6	0.76	0.76	0.21	1.32	0.787	0.43	N	1.32	2.39	1.32	1.32
Sodium-22 (pCi/g)	0/1	0.09	0.09			0.09		O	0.09		0.09	0
Thorium-228 (pCi/g)	5/6	0.25	0.25	0.43	1.32	0.782	0.42	N	1.32	2.35	1.32	1.32
Thorium-230 (pCi/g)	13/14	0.38	0.38	0.57	2.2	1.22	0.61	L	2.2	4.42	2.2	2.2
Thorium-232 (pCi/g)	10/11	0.5	0.5	0.37	1.19	0.734	0.30	N	1.19	1.56	1.19	1.19
Uranium-235 (pCi/g)	0/1	0.07	0.07			0.07		O	0.07		0.07	0
Uranium-238 (pCi/g)	1/2	0.62	0.62	4.3	4.3	2.46	2.60	N	4.3	4.3	4.3	4.3

Results less than the detection limit were set to 1/2 the reported detection limit except for radioisotopes.

UTL = Upper Tolerance Limit.

[a] Distribution codes:

D = Not determined because fewer than 5 detects or < 50% detects; parametric method to determine 95% UTL was not used.

L = Lognormal; parametric method was used to determine 95% UTL.

N = Normal; parametric method was used to determine 95% UTL.

O = Not determined because all concentrations were non-detects; parametric method to determine 95% UTL was not used.

X = Neither normal nor lognormal; parametric method to determine 95% UTL was not used.

[b] Background criteria was assigned as 0.0 for analytes never detected in background.

Attachment 5. Soil Summary Statistics for Radionuclides (Page 1 of 84)

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K120040/VP-3(C)	Lead-210						0.1988	0	0.1988
Soil - All Depths	09K120040/VP-3(C)	Protactinium-231						0.1136	0.2	0
Soil - All Depths	09K120040/VP-3(C)	Radium-226	24/29	0.3	4	1.41	L	1.74	1.05	0.69
Soil - All Depths	09K120040/VP-3(C)	Radium-228						0.005112	0.98	0
Soil - All Depths	09K120040/VP-3(C)	Thorium-228						0.0142	1.18	0
Soil - All Depths	09K120040/VP-3(C)	Thorium-230	28/29	1.4	79	8.91	L	14.2	1.66	12.54
Soil - All Depths	09K120040/VP-3(C)	Thorium-232	18/29	0.8	4	1.67	X	1.96	1.11	0.85
Soil - All Depths	09K120040/VP-3(C)	Uranium-234						0.1704	1.13	0
Soil - All Depths	09K120040/VP-3(C)	Uranium-235						0.007384	0.06	0
Soil - All Depths	09K120040/VP-3(C)	Uranium-238	1/29	2.7	2.7	7.73	D	2.7	1.18	1.52
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Actinium-227						0.266	0.21	0.056
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Lead-210						0.532	0	0.532
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Protactinium-231						0.304	0.2	0.104
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Radium-226	5/5	0.3	2.3	1.36	N	2.18	1.05	1.13
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Radium-228						0.01368	0.98	0
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Thorium-228						0.038	1.18	0
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Thorium-230	5/5	1.9	38	14.2	L	38	1.66	36.34
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Thorium-232	3/5	0.9	1.5	1.16	D	1.42	1.11	0.31
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Uranium-234						0.456	1.13	0
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Uranium-235						0.01976	0.06	0
Subsurface Soil (>0.5 ft)	09K120040/VP-3(C)	Uranium-238	1/5	2.7	2.7	3.98	D	2.7	1.18	1.52
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Actinium-227						0.0931	0.21	0
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Lead-210						0.1862	0	0.1862
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Protactinium-231						0.1064	0.2	0
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Radium-226	19/24	0.7	4	1.43	L	1.7	1.05	0.65
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Radium-228						0.004788	0.98	0
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Thorium-228						0.0133	1.18	0
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Thorium-230	23/24	1.4	79	7.82	X	13.3	1.66	11.64
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Thorium-232	15/24	0.8	4	1.77	X	2.12	1.11	1.01
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Uranium-234						0.1596	1.13	0
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Uranium-235						0.006916	0.06	0
Surface Soil (<0.5 ft)	09K120040/VP-3(C)	Uranium-238	0/24			8.51	D	9.87	1.18	8.69

Attachment 5. Soil Summary Statistics for Radionuclides (Page 2 of 84)

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K120116/VP-5(C)	Actinium-227						0.1897	0.21	0
Soil - All Depths	09K120116/VP-5(C)	Lead-210						0.3794	0	0.3794
Soil - All Depths	09K120116/VP-5(C)	Protactinium-231						0.2168	0.2	0.0168
Soil - All Depths	09K120116/VP-5(C)	Radium-226	17/20	0.7	3	1.29	N	1.53	1.05	0.48
Soil - All Depths	09K120116/VP-5(C)	Radium-228						0.009756	0.98	0
Soil - All Depths	09K120116/VP-5(C)	Thorium-228						0.0271	1.18	0
Soil - All Depths	09K120116/VP-5(C)	Thorium-230	17/20	0.6	61	7.78	L	27.1	1.66	25.44
Soil - All Depths	09K120116/VP-5(C)	Thorium-232	16/20	0.1	3	1.39	X	1.72	1.11	0.61
Soil - All Depths	09K120116/VP-5(C)	Uranium-234						0.3252	1.13	0
Soil - All Depths	09K120116/VP-5(C)	Uranium-235						0.014092	0.06	0
Soil - All Depths	09K120116/VP-5(C)	Uranium-238	2/20	3.2	3.7	6.41	D	3.7	1.18	2.52
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Actinium-227						0.427	0.21	0.217
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Lead-210						0.854	0	0.854
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Protactinium-231						0.488	0.2	0.288
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Radium-226	5/5	1	2.2	1.4	X	1.94	1.05	0.89
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Radium-228						0.02196	0.98	0
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Thorium-228						0.061	1.18	0
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Thorium-230	5/5	2.9	61	19.5	L	61	1.66	59.34
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Thorium-232	5/5	0.8	2	1.32	L	2	1.11	0.89
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Uranium-234						0.732	1.13	0
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Uranium-235						0.03172	0.06	0
Subsurface Soil (>0.5 ft)	09K120116/VP-5(C)	Uranium-238	0/5			4.68	D	5.63	1.18	4.45
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Actinium-227						0.098	0.21	0
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Lead-210						0.196	0	0.196
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Protactinium-231						0.112	0.2	0
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Radium-226	12/15	0.7	3	1.25	N	1.56	1.05	0.51
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Radium-228						0.00504	0.98	0
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Thorium-228						0.014	1.18	0
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Thorium-230	12/15	0.6	16	3.88	L	14	1.66	12.34
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Thorium-232	11/15	0.1	3	1.41	L	3	1.11	1.89
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Uranium-234						0.168	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Uranium-235						0.00728	0.06	0
Surface Soil (<0.5 ft)	09K120116/VP-5(C)	Uranium-238	2/15	3.2	3.7	6.99	D	3.7	1.18	2.52
Soil - All Depths	09K120127/VP-4(C)	Actinium-227						0.03115	0.21	0
Soil - All Depths	09K120127/VP-4(C)	Lead-210						0.0623	0	0.0623
Soil - All Depths	09K120127/VP-4(C)	Protactinium-231						0.0356	0.2	0
Soil - All Depths	09K120127/VP-4(C)	Radium-226	16/16	0.6	2	1.33	N	1.49	1.05	0.44
Soil - All Depths	09K120127/VP-4(C)	Radium-228						0.001602	0.98	0
Soil - All Depths	09K120127/VP-4(C)	Thorium-228						0.00445	1.18	0
Soil - All Depths	09K120127/VP-4(C)	Thorium-230	15/16	0.7	17	2.83	L	4.45	1.66	2.79
Soil - All Depths	09K120127/VP-4(C)	Thorium-232	14/16	0.9	4	1.85	L	2.27	1.11	1.16
Soil - All Depths	09K120127/VP-4(C)	Uranium-234						0.0534	1.13	0
Soil - All Depths	09K120127/VP-4(C)	Uranium-235						0.002314	0.06	0
Soil - All Depths	09K120127/VP-4(C)	Uranium-238	0/16			5.64	D	6.85	1.18	5.67
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Actinium-227						0.02681	0.21	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Lead-210						0.05362	0	0.05362
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Protactinium-231						0.03064	0.2	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Radium-226	4/4	0.6	1.2	0.95	D	1.2	1.05	0.15
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Radium-228						0.0013788	0.98	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Thorium-228						0.00383	1.18	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Thorium-230	4/4	1	4	2.35	D	3.83	1.66	2.17
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Thorium-232	3/4	0.9	1.1	1.28	D	1.1	1.11	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Uranium-234						0.04596	1.13	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Uranium-235						0.0019916	0.06	0
Subsurface Soil (>0.5 ft)	09K120127/VP-4(C)	Uranium-238	0/4			3.75	D	5.52	1.18	4.34
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Actinium-227						0.03745	0.21	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Lead-210						0.0749	0	0.0749
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Protactinium-231						0.0428	0.2	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Radium-226	12/12	0.9	2	1.45	N	1.62	1.05	0.57
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Radium-228						0.001926	0.98	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Thorium-228						0.00535	1.18	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Thorium-230	11/12	0.7	17	2.98	X	5.35	1.66	3.69

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Thorium-232	11/12	1.5	4	2.04	L	2.54	1.11	1.43
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Uranium-234						0.0642	1.13	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Uranium-235						0.002782	0.06	0
Surface Soil (<0.5 ft)	09K120127/VP-4(C)	Uranium-238	0/12			6.27	D	7.74	1.18	6.56
Soil - All Depths	09K130038/VP-62	Actinium-227						0.0238	0.21	0
Soil - All Depths	09K130038/VP-62	Lead-210						0.0476	0	0.0476
Soil - All Depths	09K130038/VP-62	Protactinium-231						0.0272	0.2	0
Soil - All Depths	09K130038/VP-62	Radium-226						0.0238	1.05	0
Soil - All Depths	09K130038/VP-62	Radium-228						0.001224	0.98	0
Soil - All Depths	09K130038/VP-62	Thorium-228						0.0034	1.18	0
Soil - All Depths	09K130038/VP-62	Thorium-230	5/5	1	3.4	2.06	L	3.4	1.66	1.74
Soil - All Depths	09K130038/VP-62	Thorium-232						0.0034	1.11	0
Soil - All Depths	09K130038/VP-62	Uranium-234						0.0408	1.13	0
Soil - All Depths	09K130038/VP-62	Uranium-235						0.001768	0.06	0
Soil - All Depths	09K130038/VP-62	Uranium-238						0.0408	1.18	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Actinium-227						0.0238	0.21	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Lead-210						0.0476	0	0.0476
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Protactinium-231						0.0272	0.2	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Radium-226						0.0238	1.05	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Radium-228						0.001224	0.98	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Thorium-228						0.0034	1.18	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Thorium-230	5/5	1	3.4	2.06	L	3.4	1.66	1.74
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Thorium-232						0.0034	1.11	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Uranium-234						0.0408	1.13	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Uranium-235						0.001768	0.06	0
Subsurface Soil (>0.5 ft)	09K130038/VP-62	Uranium-238						0.0408	1.18	0
Soil - All Depths	09K130104/VP-60	Actinium-227						0.01043	0.21	0
Soil - All Depths	09K130104/VP-60	Lead-210						0.02086	0	0.02086
Soil - All Depths	09K130104/VP-60	Protactinium-231						0.01192	0.2	0
Soil - All Depths	09K130104/VP-60	Radium-226						0.01043	1.05	0
Soil - All Depths	09K130104/VP-60	Radium-228						0.0005364	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K130104/VP-60	Thorium-228						0.00149	1.18	0
Soil - All Depths	09K130104/VP-60	Thorium-230	9/10	0.8	1.7	1.32	N	1.49	1.66	0
Soil - All Depths	09K130104/VP-60	Thorium-232						0.00149	1.11	0
Soil - All Depths	09K130104/VP-60	Uranium-234						0.01788	1.13	0
Soil - All Depths	09K130104/VP-60	Uranium-235						0.0007748	0.06	0
Soil - All Depths	09K130104/VP-60	Uranium-238						0.01788	1.18	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Actinium-227						0.01043	0.21	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Lead-210						0.02086	0	0.02086
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Protactinium-231						0.01192	0.2	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Radium-226						0.01043	1.05	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Radium-228						0.0005364	0.98	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Thorium-228						0.00149	1.18	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Thorium-230	9/10	0.8	1.7	1.32	N	1.49	1.66	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Thorium-232						0.00149	1.11	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Uranium-234						0.01788	1.13	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Uranium-235						0.0007748	0.06	0
Subsurface Soil (>0.5 ft)	09K130104/VP-60	Uranium-238						0.01788	1.18	0
Soil - All Depths	09K140015/VP-58	Actinium-227						0.273	0.21	0.063
Soil - All Depths	09K140015/VP-58	Lead-210						0.546	0	0.546
Soil - All Depths	09K140015/VP-58	Protactinium-231						0.312	0.2	0.112
Soil - All Depths	09K140015/VP-58	Radium-226	25/25	0.9	10	2.28	X	2.88	1.05	1.83
Soil - All Depths	09K140015/VP-58	Radium-228						0.01404	0.98	0
Soil - All Depths	09K140015/VP-58	Thorium-228						0.039	1.18	0
Soil - All Depths	09K140015/VP-58	Thorium-230	26/26	0.9	240	19.9	X	39	1.66	37.34
Soil - All Depths	09K140015/VP-58	Thorium-232	21/25	1	5	2.1	L	2.5	1.11	1.39
Soil - All Depths	09K140015/VP-58	Uranium-234						0.468	1.13	0
Soil - All Depths	09K140015/VP-58	Uranium-235						0.02028	0.06	0
Soil - All Depths	09K140015/VP-58	Uranium-238	0/25			10.6	D	12.7	1.18	11.52
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Actinium-227						0.5306	0.21	0.3206
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Lead-210						1.0612	0	1.0612
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Protactinium-231						0.6064	0.2	0.4064

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Radium-226	13/13	1.4	10	2.65	X	3.8	1.05	2.75
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Radium-228						0.027288	0.98	0
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Thorium-228						0.0758	1.18	0
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Thorium-230	13/13	0.9	240	37.1	X	75.8	1.66	74.14
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Thorium-232	11/13	1	5	2.3	L	3.23	1.11	2.12
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Uranium-234						0.9096	1.13	0
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Uranium-235						0.039416	0.06	0
Subsurface Soil (>0.5 ft)	09K140015/VP-58	Uranium-238	0/13			12	D	15.6	1.18	14.42
Surface Soil (<0.5 ft)	09K140015/VP-58	Actinium-227						0.02709	0.21	0
Surface Soil (<0.5 ft)	09K140015/VP-58	Lead-210						0.05418	0	0.05418
Surface Soil (<0.5 ft)	09K140015/VP-58	Protactinium-231						0.03096	0.2	0
Surface Soil (<0.5 ft)	09K140015/VP-58	Radium-226	12/12	0.9	2.8	1.88	N	2.18	1.05	1.13
Surface Soil (<0.5 ft)	09K140015/VP-58	Radium-228						0.0013932	0.98	0
Surface Soil (<0.5 ft)	09K140015/VP-58	Thorium-228						0.00387	1.18	0
Surface Soil (<0.5 ft)	09K140015/VP-58	Thorium-230	13/13	1.2	6.9	2.68	L	3.87	1.66	2.21
Surface Soil (<0.5 ft)	09K140015/VP-58	Thorium-232	10/12	1	3	1.88	L	2.33	1.11	1.22
Surface Soil (<0.5 ft)	09K140015/VP-58	Uranium-234						0.04644	1.13	0
Surface Soil (<0.5 ft)	09K140015/VP-58	Uranium-235						0.0020124	0.06	0
Surface Soil (<0.5 ft)	09K140015/VP-58	Uranium-238	0/12			9.17	D	11.1	1.18	9.92
Soil - All Depths	09K140026/VP-57	Actinium-227						0.133	0.21	0
Soil - All Depths	09K140026/VP-57	Lead-210						0.266	0	0.266
Soil - All Depths	09K140026/VP-57	Protactinium-231						0.152	0.2	0
Soil - All Depths	09K140026/VP-57	Radium-226	9/9	0.8	2.1	1.59	N	1.9	1.05	0.85
Soil - All Depths	09K140026/VP-57	Radium-228						0.00684	0.98	0
Soil - All Depths	09K140026/VP-57	Thorium-228						0.019	1.18	0
Soil - All Depths	09K140026/VP-57	Thorium-230	8/9	1.3	19	6.96	L	19	1.66	17.34
Soil - All Depths	09K140026/VP-57	Thorium-232	6/9	0.7	3	1.51	L	2.3	1.11	1.19
Soil - All Depths	09K140026/VP-57	Uranium-234						0.228	1.13	0
Soil - All Depths	09K140026/VP-57	Uranium-235						0.00988	0.06	0
Soil - All Depths	09K140026/VP-57	Uranium-238	0/9			8.18	D	10.5	1.18	9.32
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Actinium-227						0.133	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Lead-210						0.266	0	0.266
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Protactinium-231						0.152	0.2	0
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Radium-226	3/3	0.8	2.1	1.4	D	2.1	1.05	1.05
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Radium-228						0.00684	0.98	0
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Thorium-228						0.019	1.18	0
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Thorium-230	2/3	2	19	7.17	D	19	1.66	17.34
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Thorium-232	3/3	0.7	1.3	0.933	D	1.3	1.11	0.19
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Uranium-234						0.228	1.13	0
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Uranium-235						0.00988	0.06	0
Subsurface Soil (>0.5 ft)	09K140026/VP-57	Uranium-238	0/3			5.73	D	8.35	1.18	7.17
Surface Soil (<0.5 ft)	09K140026/VP-57	Actinium-227						0.119	0.21	0
Surface Soil (<0.5 ft)	09K140026/VP-57	Lead-210						0.238	0	0.238
Surface Soil (<0.5 ft)	09K140026/VP-57	Protactinium-231						0.136	0.2	0
Surface Soil (<0.5 ft)	09K140026/VP-57	Radium-226	6/6	0.9	2.1	1.68	N	2.05	1.05	1
Surface Soil (<0.5 ft)	09K140026/VP-57	Radium-228						0.00612	0.98	0
Surface Soil (<0.5 ft)	09K140026/VP-57	Thorium-228						0.017	1.18	0
Surface Soil (<0.5 ft)	09K140026/VP-57	Thorium-230	6/6	1.3	17	6.85	L	17	1.66	15.34
Surface Soil (<0.5 ft)	09K140026/VP-57	Thorium-232	3/6	2	3	1.8	D	2.38	1.11	1.27
Surface Soil (<0.5 ft)	09K140026/VP-57	Uranium-234						0.204	1.13	0
Surface Soil (<0.5 ft)	09K140026/VP-57	Uranium-235						0.00884	0.06	0
Surface Soil (<0.5 ft)	09K140026/VP-57	Uranium-238	0/6			9.4	D	12.8	1.18	11.62
Soil - All Depths	09K210206/VP-56,1(C)	Actinium-227						0.0826	0.21	0
Soil - All Depths	09K210206/VP-56,1(C)	Lead-210						0.1652	0	0.1652
Soil - All Depths	09K210206/VP-56,1(C)	Protactinium-231						0.0944	0.2	0
Soil - All Depths	09K210206/VP-56,1(C)	Radium-226	30/31	0.8	3.3	1.81	L	2.06	1.05	1.01
Soil - All Depths	09K210206/VP-56,1(C)	Radium-228						0.004248	0.98	0
Soil - All Depths	09K210206/VP-56,1(C)	Thorium-228						0.0118	1.18	0
Soil - All Depths	09K210206/VP-56,1(C)	Thorium-230	31/31	1.2	43	8.31	X	11.8	1.66	10.14
Soil - All Depths	09K210206/VP-56,1(C)	Thorium-232	23/31	1	5	2.22	L	2.7	1.11	1.59
Soil - All Depths	09K210206/VP-56,1(C)	Uranium-234						0.1416	1.13	0
Soil - All Depths	09K210206/VP-56,1(C)	Uranium-235						0.006136	0.06	0
Soil - All Depths	09K210206/VP-56,1(C)	Uranium-238	0/31			9.26	D	10.6	1.18	9.42

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Actinium-227						0.2415	0.21	0.0315
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Lead-210						0.483	0	0.483
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Protactinium-231						0.276	0.2	0.076
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Radium-226	7/7	1.3	3.1	1.8	L	2.39	1.05	1.34
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Radium-228						0.01242	0.98	0
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Thorium-228						0.0345	1.18	0
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Thorium-230	7/7	1.4	43	22.6	N	34.5	1.66	32.84
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Thorium-232	3/7	1.2	1.7	1.17	D	1.38	1.11	0.27
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Uranium-234						0.414	1.13	0
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Uranium-235						0.01794	0.06	0
Subsurface Soil (>0.5 ft)	09K210206/VP-56,1(C)	Uranium-238	0/7			5.9	D	7.54	1.18	6.36
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Actinium-227						0.04074	0.21	0
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Lead-210						0.08148	0	0.08148
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Protactinium-231						0.04656	0.2	0
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Radium-226	23/24	0.8	3.3	1.81	L	2.13	1.05	1.08
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Radium-228						0.0020952	0.98	0
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Thorium-228						0.00582	1.18	0
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Thorium-230	24/24	1.2	20	4.13	X	5.82	1.66	4.16
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Thorium-232	20/24	1	5	2.53	X	2.9	1.11	1.79
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Uranium-234						0.06984	1.13	0
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Uranium-235						0.0030264	0.06	0
Surface Soil (<0.5 ft)	09K210206/VP-56,1(C)	Uranium-238	0/24			10.2	D	11.8	1.18	10.62
Soil - All Depths	09K220029	Actinium-227						0.0077	0.21	0
Soil - All Depths	09K220029	Lead-210						0.0154	0	0.0154
Soil - All Depths	09K220029	Protactinium-231						0.0088	0.2	0
Soil - All Depths	09K220029	Radium-226						0.0077	1.05	0
Soil - All Depths	09K220029	Radium-228						0.000396	0.98	0
Soil - All Depths	09K220029	Thorium-228						0.0011	1.18	0
Soil - All Depths	09K220029	Thorium-230	1/1	1.1	1.1	1.1	D	1.1	1.66	0
Soil - All Depths	09K220029	Thorium-232						0.0011	1.11	0
Soil - All Depths	09K220029	Uranium-234						0.0132	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K220029	Uranium-235						0.000572	0.06	0
Soil - All Depths	09K220029	Uranium-238						0.0132	1.18	0
Subsurface Soil (>0.5 ft)	09K220029	Actinium-227						0.0077	0.21	0
Subsurface Soil (>0.5 ft)	09K220029	Lead-210						0.0154	0	0.0154
Subsurface Soil (>0.5 ft)	09K220029	Protactinium-231						0.0088	0.2	0
Subsurface Soil (>0.5 ft)	09K220029	Radium-226						0.0077	1.05	0
Subsurface Soil (>0.5 ft)	09K220029	Radium-228						0.000396	0.98	0
Subsurface Soil (>0.5 ft)	09K220029	Thorium-228						0.0011	1.18	0
Subsurface Soil (>0.5 ft)	09K220029	Thorium-230	1/1	1.1	1.1	1.1	D	1.1	1.66	0
Subsurface Soil (>0.5 ft)	09K220029	Thorium-232						0.0011	1.11	0
Subsurface Soil (>0.5 ft)	09K220029	Uranium-234						0.0132	1.13	0
Subsurface Soil (>0.5 ft)	09K220029	Uranium-235						0.000572	0.06	0
Subsurface Soil (>0.5 ft)	09K220029	Uranium-238						0.0132	1.18	0
Soil - All Depths	09K220030/VP-44	Actinium-227						0.01113	0.21	0
Soil - All Depths	09K220030/VP-44	Lead-210						0.02226	0	0.02226
Soil - All Depths	09K220030/VP-44	Protactinium-231						0.01272	0.2	0
Soil - All Depths	09K220030/VP-44	Radium-226						0.01113	1.05	0
Soil - All Depths	09K220030/VP-44	Radium-228						0.0005724	0.98	0
Soil - All Depths	09K220030/VP-44	Thorium-228						0.00159	1.18	0
Soil - All Depths	09K220030/VP-44	Thorium-230	4/4	1.1	1.6	1.35	D	1.59	1.66	0
Soil - All Depths	09K220030/VP-44	Thorium-232						0.00159	1.11	0
Soil - All Depths	09K220030/VP-44	Uranium-234						0.01908	1.13	0
Soil - All Depths	09K220030/VP-44	Uranium-235						0.0008268	0.06	0
Soil - All Depths	09K220030/VP-44	Uranium-238						0.01908	1.18	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Actinium-227						0.01113	0.21	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Lead-210						0.02226	0	0.02226
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Protactinium-231						0.01272	0.2	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Radium-226						0.01113	1.05	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Radium-228						0.0005724	0.98	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Thorium-228						0.00159	1.18	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Thorium-230	4/4	1.1	1.6	1.35	D	1.59	1.66	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Thorium-232						0.00159	1.11	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Uranium-234						0.01908	1.13	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Uranium-235						0.0008268	0.06	0
Subsurface Soil (>0.5 ft)	09K220030/VP-44	Uranium-238						0.01908	1.18	0
Soil - All Depths	09K220041/VP-42	Actinium-227						0.01771	0.21	0
Soil - All Depths	09K220041/VP-42	Lead-210						0.03542	0	0.03542
Soil - All Depths	09K220041/VP-42	Protactinium-231						0.02024	0.2	0
Soil - All Depths	09K220041/VP-42	Radium-226						0.01771	1.05	0
Soil - All Depths	09K220041/VP-42	Radium-228						0.0009108	0.98	0
Soil - All Depths	09K220041/VP-42	Thorium-228						0.00253	1.18	0
Soil - All Depths	09K220041/VP-42	Thorium-230	6/6	1.4	2.7	2.08	N	2.53	1.66	0.87
Soil - All Depths	09K220041/VP-42	Thorium-232						0.00253	1.11	0
Soil - All Depths	09K220041/VP-42	Uranium-234						0.03036	1.13	0
Soil - All Depths	09K220041/VP-42	Uranium-235						0.0013156	0.06	0
Soil - All Depths	09K220041/VP-42	Uranium-238						0.03036	1.18	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Actinium-227						0.01771	0.21	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Lead-210						0.03542	0	0.03542
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Protactinium-231						0.02024	0.2	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Radium-226						0.01771	1.05	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Radium-228						0.0009108	0.98	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Thorium-228						0.00253	1.18	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Thorium-230	6/6	1.4	2.7	2.08	N	2.53	1.66	0.87
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Thorium-232						0.00253	1.11	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Uranium-234						0.03036	1.13	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Uranium-235						0.0013156	0.06	0
Subsurface Soil (>0.5 ft)	09K220041/VP-42	Uranium-238						0.03036	1.18	0
Soil - All Depths	09K220074/VP-46	Actinium-227						0.0203	0.21	0
Soil - All Depths	09K220074/VP-46	Lead-210						0.0406	0	0.0406
Soil - All Depths	09K220074/VP-46	Protactinium-231						0.0232	0.2	0
Soil - All Depths	09K220074/VP-46	Radium-226						0.0203	1.05	0
Soil - All Depths	09K220074/VP-46	Radium-228						0.001044	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K220074/VP-46	Thorium-228						0.0029	1.18	0
Soil - All Depths	09K220074/VP-46	Thorium-230	5/6	0.8	2.9	1.43	L	2.9	1.66	1.24
Soil - All Depths	09K220074/VP-46	Thorium-232						0.0029	1.11	0
Soil - All Depths	09K220074/VP-46	Uranium-234						0.0348	1.13	0
Soil - All Depths	09K220074/VP-46	Uranium-235						0.001508	0.06	0
Soil - All Depths	09K220074/VP-46	Uranium-238						0.0348	1.18	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Actinium-227						0.0203	0.21	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Lead-210						0.0406	0	0.0406
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Protactinium-231						0.0232	0.2	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Radium-226						0.0203	1.05	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Radium-228						0.001044	0.98	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Thorium-228						0.0029	1.18	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Thorium-230	5/6	0.8	2.9	1.43	L	2.9	1.66	1.24
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Thorium-232						0.0029	1.11	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Uranium-234						0.0348	1.13	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Uranium-235						0.001508	0.06	0
Subsurface Soil (>0.5 ft)	09K220074/VP-46	Uranium-238						0.0348	1.18	0
Soil - All Depths	09K220085/VP-47	Actinium-227						0.0133	0.21	0
Soil - All Depths	09K220085/VP-47	Lead-210						0.0266	0	0.0266
Soil - All Depths	09K220085/VP-47	Protactinium-231						0.0152	0.2	0
Soil - All Depths	09K220085/VP-47	Radium-226						0.0133	1.05	0
Soil - All Depths	09K220085/VP-47	Radium-228						0.000684	0.98	0
Soil - All Depths	09K220085/VP-47	Thorium-228						0.0019	1.18	0
Soil - All Depths	09K220085/VP-47	Thorium-230	4/4	0.9	1.9	1.6	D	1.9	1.66	0.24
Soil - All Depths	09K220085/VP-47	Thorium-232						0.0019	1.11	0
Soil - All Depths	09K220085/VP-47	Uranium-234						0.0228	1.13	0
Soil - All Depths	09K220085/VP-47	Uranium-235						0.000988	0.06	0
Soil - All Depths	09K220085/VP-47	Uranium-238						0.0228	1.18	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Actinium-227						0.0133	0.21	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Lead-210						0.0266	0	0.0266
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Protactinium-231						0.0152	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Radium-226						0.0133	1.05	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Radium-228						0.000684	0.98	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Thorium-228						0.0019	1.18	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Thorium-230	4/4	0.9	1.9	1.6	D	1.9	1.66	0.24
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Thorium-232						0.0019	1.11	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Uranium-234						0.0228	1.13	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Uranium-235						0.000988	0.06	0
Subsurface Soil (>0.5 ft)	09K220085/VP-47	Uranium-238						0.0228	1.18	0
Soil - All Depths	09K220140/VP-40	Actinium-227						0.02275	0.21	0
Soil - All Depths	09K220140/VP-40	Lead-210						0.0455	0	0.0455
Soil - All Depths	09K220140/VP-40	Protactinium-231						0.026	0.2	0
Soil - All Depths	09K220140/VP-40	Radium-226						0.02275	1.05	0
Soil - All Depths	09K220140/VP-40	Radium-228						0.00117	0.98	0
Soil - All Depths	09K220140/VP-40	Thorium-228						0.00325	1.18	0
Soil - All Depths	09K220140/VP-40	Thorium-230	6/8	1.5	4.3	1.84	L	3.25	1.66	1.59
Soil - All Depths	09K220140/VP-40	Thorium-232						0.00325	1.11	0
Soil - All Depths	09K220140/VP-40	Uranium-234						0.039	1.13	0
Soil - All Depths	09K220140/VP-40	Uranium-235						0.00169	0.06	0
Soil - All Depths	09K220140/VP-40	Uranium-238						0.039	1.18	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Actinium-227						0.02275	0.21	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Lead-210						0.0455	0	0.0455
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Protactinium-231						0.026	0.2	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Radium-226						0.02275	1.05	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Radium-228						0.00117	0.98	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Thorium-228						0.00325	1.18	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Thorium-230	6/8	1.5	4.3	1.84	L	3.25	1.66	1.59
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Thorium-232						0.00325	1.11	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Uranium-234						0.039	1.13	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Uranium-235						0.00169	0.06	0
Subsurface Soil (>0.5 ft)	09K220140/VP-40	Uranium-238						0.039	1.18	0
Soil - All Depths	09K220162/VP-53	Actinium-227						0.014	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K220162/VP-53	Lead-210						0.028	0	0.028
Soil - All Depths	09K220162/VP-53	Protactinium-231						0.016	0.2	0
Soil - All Depths	09K220162/VP-53	Radium-226						0.014	1.05	0
Soil - All Depths	09K220162/VP-53	Radium-228						0.00072	0.98	0
Soil - All Depths	09K220162/VP-53	Thorium-228						0.002	1.18	0
Soil - All Depths	09K220162/VP-53	Thorium-230	3/3	1.5	2	1.73	D	2	1.66	0.34
Soil - All Depths	09K220162/VP-53	Thorium-232						0.002	1.11	0
Soil - All Depths	09K220162/VP-53	Uranium-234						0.024	1.13	0
Soil - All Depths	09K220162/VP-53	Uranium-235						0.00104	0.06	0
Soil - All Depths	09K220162/VP-53	Uranium-238						0.024	1.18	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Actinium-227						0.014	0.21	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Lead-210						0.028	0	0.028
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Protactinium-231						0.016	0.2	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Radium-226						0.014	1.05	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Radium-228						0.00072	0.98	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Thorium-228						0.002	1.18	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Thorium-230	3/3	1.5	2	1.73	D	2	1.66	0.34
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Thorium-232						0.002	1.11	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Uranium-234						0.024	1.13	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Uranium-235						0.00104	0.06	0
Subsurface Soil (>0.5 ft)	09K220162/VP-53	Uranium-238						0.024	1.18	0
Soil - All Depths	09K220173/VP-48(A)	Actinium-227						0.0147	0.21	0
Soil - All Depths	09K220173/VP-48(A)	Lead-210						0.0294	0	0.0294
Soil - All Depths	09K220173/VP-48(A)	Protactinium-231						0.0168	0.2	0
Soil - All Depths	09K220173/VP-48(A)	Radium-226	0/1			1	D		1.05	0
Soil - All Depths	09K220173/VP-48(A)	Radium-226						0.0147	1.05	0
Soil - All Depths	09K220173/VP-48(A)	Radium-228						0.000756	0.98	0
Soil - All Depths	09K220173/VP-48(A)	Thorium-228						0.0021	1.18	0
Soil - All Depths	09K220173/VP-48(A)	Thorium-230	4/4	1.6	2.1	1.93	D	2.1	1.66	0.44
Soil - All Depths	09K220173/VP-48(A)	Thorium-232	1/1	1.9	1.9	1.9	D	1.9	1.11	0.79
Soil - All Depths	09K220173/VP-48(A)	Uranium-234						0.0252	1.13	0
Soil - All Depths	09K220173/VP-48(A)	Uranium-235						0.001092	0.06	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K220173/VP-48(A)	Uranium-238						0.0252	1.18	0
Soil - All Depths	09K220173/VP-48(A)	Uranium-238	0/1			10	D		1.18	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Actinium-227						0.0147	0.21	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Lead-210						0.0294	0	0.0294
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Protactinium-231						0.0168	0.2	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Radium-226						0.0147	1.05	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Radium-228						0.000756	0.98	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Thorium-228						0.0021	1.18	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Thorium-230	3/3	1.6	2.1	1.87	D	2.1	1.66	0.44
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Thorium-232						0.0021	1.11	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Uranium-234						0.0252	1.13	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Uranium-235						0.001092	0.06	0
Subsurface Soil (>0.5 ft)	09K220173/VP-48(A)	Uranium-238						0.0252	1.18	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Actinium-227						0.0147	0.21	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Lead-210						0.0294	0	0.0294
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Protactinium-231						0.0168	0.2	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Radium-226	0/1			1	D		1.05	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Radium-226						0.0147	1.05	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Radium-228						0.000756	0.98	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Thorium-228						0.0021	1.18	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Thorium-230	1/1	2.1	2.1	2.1	D	2.1	1.66	0.44
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Thorium-232	1/1	1.9	1.9	1.9	D	1.9	1.11	0.79
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Uranium-234						0.0252	1.13	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Uranium-235						0.001092	0.06	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Uranium-238						0.0252	1.18	0
Surface Soil (<0.5 ft)	09K220173/VP-48(A)	Uranium-238	0/1			10	D		1.18	0
Soil - All Depths	09K220184/VP-48	Actinium-227						0.05397	0.21	0
Soil - All Depths	09K220184/VP-48	Lead-210						0.10794	0	0.10794
Soil - All Depths	09K220184/VP-48	Protactinium-231						0.06168	0.2	0
Soil - All Depths	09K220184/VP-48	Radium-226	1/1	1.8	1.8	1.8	D	1.8	1.05	0.75
Soil - All Depths	09K220184/VP-48	Radium-228						0.0027756	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K220184/VP-48	Thorium-228						0.00771	1.18	0
Soil - All Depths	09K220184/VP-48	Thorium-230	16/18	0.7	32	4.55	X	7.71	1.66	6.05
Soil - All Depths	09K220184/VP-48	Thorium-232	1/1	1.6	1.6	1.6	D	1.6	1.11	0.49
Soil - All Depths	09K220184/VP-48	Uranium-234						0.09252	1.13	0
Soil - All Depths	09K220184/VP-48	Uranium-235						0.0040092	0.06	0
Soil - All Depths	09K220184/VP-48	Uranium-238	1/1	6.9	6.9	6.9	D	6.9	1.18	5.72
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Actinium-227						0.0567	0.21	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Lead-210						0.1134	0	0.1134
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Protactinium-231						0.0648	0.2	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Radium-226						0.0567	1.05	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Radium-228						0.002916	0.98	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Thorium-228						0.0081	1.18	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Thorium-230	15/17	0.7	32	4.76	X	8.1	1.66	6.44
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Thorium-232						0.0081	1.11	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Uranium-234						0.0972	1.13	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Uranium-235						0.004212	0.06	0
Subsurface Soil (>0.5 ft)	09K220184/VP-48	Uranium-238						0.0972	1.18	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Actinium-227						0.00658	0.21	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Lead-210						0.01316	0	0.01316
Surface Soil (<0.5 ft)	09K220184/VP-48	Protactinium-231						0.00752	0.2	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Radium-226	1/1	1.8	1.8	1.8	D	1.8	1.05	0.75
Surface Soil (<0.5 ft)	09K220184/VP-48	Radium-228						0.0003384	0.98	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Thorium-228						0.00094	1.18	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Thorium-230	1/1	0.94	0.94	0.94	D	0.94	1.66	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Thorium-232	1/1	1.6	1.6	1.6	D	1.6	1.11	0.49
Surface Soil (<0.5 ft)	09K220184/VP-48	Uranium-234						0.01128	1.13	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Uranium-235						0.0004888	0.06	0
Surface Soil (<0.5 ft)	09K220184/VP-48	Uranium-238	1/1	6.9	6.9	6.9	D	6.9	1.18	5.72
Soil - All Depths	09K220195/VP-49	Actinium-227						0.01834	0.21	0
Soil - All Depths	09K220195/VP-49	Lead-210						0.03668	0	0.03668
Soil - All Depths	09K220195/VP-49	Protactinium-231						0.02096	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	09K220195/VP-49	Radium-226						0.01834	1.05	0
Soil - All Depths	09K220195/VP-49	Radium-228						0.0009432	0.98	0
Soil - All Depths	09K220195/VP-49	Thorium-228						0.00262	1.18	0
Soil - All Depths	09K220195/VP-49	Thorium-230	4/4	0.8	2.8	1.63	D	2.62	1.66	0.96
Soil - All Depths	09K220195/VP-49	Thorium-232						0.00262	1.11	0
Soil - All Depths	09K220195/VP-49	Uranium-234						0.03144	1.13	0
Soil - All Depths	09K220195/VP-49	Uranium-235						0.0013624	0.06	0
Soil - All Depths	09K220195/VP-49	Uranium-238						0.03144	1.18	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Actinium-227						0.01834	0.21	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Lead-210						0.03668	0	0.03668
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Protactinium-231						0.02096	0.2	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Radium-226						0.01834	1.05	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Radium-228						0.0009432	0.98	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Thorium-228						0.00262	1.18	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Thorium-230	4/4	0.8	2.8	1.63	D	2.62	1.66	0.96
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Thorium-232						0.00262	1.11	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Uranium-234						0.03144	1.13	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Uranium-235						0.0013624	0.06	0
Subsurface Soil (>0.5 ft)	09K220195/VP-49	Uranium-238						0.03144	1.18	0
Soil - All Depths	09K310197/VP-50,51	Actinium-227						0.0119	0.21	0
Soil - All Depths	09K310197/VP-50,51	Lead-210						0.0238	0	0.0238
Soil - All Depths	09K310197/VP-50,51	Protactinium-231						0.0136	0.2	0
Soil - All Depths	09K310197/VP-50,51	Radium-226						0.0119	1.05	0
Soil - All Depths	09K310197/VP-50,51	Radium-228						0.000612	0.98	0
Soil - All Depths	09K310197/VP-50,51	Thorium-228						0.0017	1.18	0
Soil - All Depths	09K310197/VP-50,51	Thorium-230	3/3	1.2	1.7	1.4	D	1.7	1.66	0.04
Soil - All Depths	09K310197/VP-50,51	Thorium-232						0.0017	1.11	0
Soil - All Depths	09K310197/VP-50,51	Uranium-234						0.0204	1.13	0
Soil - All Depths	09K310197/VP-50,51	Uranium-235						0.000884	0.06	0
Soil - All Depths	09K310197/VP-50,51	Uranium-238						0.0204	1.18	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Actinium-227						0.0119	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Lead-210						0.0238	0	0.0238
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Protactinium-231						0.0136	0.2	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Radium-226						0.0119	1.05	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Radium-228						0.000612	0.98	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Thorium-228						0.0017	1.18	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Thorium-230	3/3	1.2	1.7	1.4	D	1.7	1.66	0.04
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Thorium-232						0.0017	1.11	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Uranium-234						0.0204	1.13	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Uranium-235						0.000884	0.06	0
Subsurface Soil (>0.5 ft)	09K310197/VP-50,51	Uranium-238						0.0204	1.18	0
Soil - All Depths	10K110021	Actinium-227						0.01022	0.21	0
Soil - All Depths	10K110021	Lead-210						0.02044	0	0.02044
Soil - All Depths	10K110021	Protactinium-231						0.01168	0.2	0
Soil - All Depths	10K110021	Radium-226	17/18	0.6	2.1	1.39	N	1.6	1.05	0.55
Soil - All Depths	10K110021	Radium-228						0.0005256	0.98	0
Soil - All Depths	10K110021	Thorium-228						0.00146	1.18	0
Soil - All Depths	10K110021	Thorium-230	18/22	0.4	2.8	1.19	Z	1.46	1.66	0
Soil - All Depths	10K110021	Thorium-232	13/18	1	4	1.64	Z	2.06	1.11	0.95
Soil - All Depths	10K110021	Uranium-234						0.01752	1.13	0
Soil - All Depths	10K110021	Uranium-235						0.0007592	0.06	0
Soil - All Depths	10K110021	Uranium-238	0/18			5.39	D	7.4	1.18	6.22
Subsurface Soil (>0.5 ft)	10K110021	Actinium-227						0.0105	0.21	0
Subsurface Soil (>0.5 ft)	10K110021	Lead-210						0.021	0	0.021
Subsurface Soil (>0.5 ft)	10K110021	Protactinium-231						0.012	0.2	0
Subsurface Soil (>0.5 ft)	10K110021	Radium-226						0.0105	1.05	0
Subsurface Soil (>0.5 ft)	10K110021	Radium-228						0.00054	0.98	0
Subsurface Soil (>0.5 ft)	10K110021	Thorium-228						0.0015	1.18	0
Subsurface Soil (>0.5 ft)	10K110021	Thorium-230	2/2	1.2	1.5	1.35	D	1.5	1.66	0
Subsurface Soil (>0.5 ft)	10K110021	Thorium-232						0.0015	1.11	0
Subsurface Soil (>0.5 ft)	10K110021	Uranium-234						0.018	1.13	0
Subsurface Soil (>0.5 ft)	10K110021	Uranium-235						0.00078	0.06	0
Subsurface Soil (>0.5 ft)	10K110021	Uranium-238						0.018	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K110021	Actinium-227						0.01029	0.21	0
Surface Soil (<0.5 ft)	10K110021	Lead-210						0.02058	0	0.02058
Surface Soil (<0.5 ft)	10K110021	Protactinium-231						0.01176	0.2	0
Surface Soil (<0.5 ft)	10K110021	Radium-226	17/18	0.6	2.1	1.39	N	1.6	1.05	0.55
Surface Soil (<0.5 ft)	10K110021	Radium-228						0.0005292	0.98	0
Surface Soil (<0.5 ft)	10K110021	Thorium-228						0.00147	1.18	0
Surface Soil (<0.5 ft)	10K110021	Thorium-230	16/20	0.4	2.8	1.17	Z	1.47	1.66	0
Surface Soil (<0.5 ft)	10K110021	Thorium-232	13/18	1	4	1.64	Z	2.06	1.11	0.95
Surface Soil (<0.5 ft)	10K110021	Uranium-234						0.01764	1.13	0
Surface Soil (<0.5 ft)	10K110021	Uranium-235						0.0007644	0.06	0
Surface Soil (<0.5 ft)	10K110021	Uranium-238	0/18			5.39	D	7.4	1.18	6.22
Soil - All Depths	10K130014	Actinium-227						0.0161	0.21	0
Soil - All Depths	10K130014	Lead-210						0.0322	0	0.0322
Soil - All Depths	10K130014	Protactinium-231						0.0184	0.2	0
Soil - All Depths	10K130014	Radium-226	1/2	1.1	1.1	0.65	D	1.1	1.05	0.05
Soil - All Depths	10K130014	Radium-228						0.000828	0.98	0
Soil - All Depths	10K130014	Thorium-228						0.0023	1.18	0
Soil - All Depths	10K130014	Thorium-230	2/2	1	2.3	1.65	D	2.3	1.66	0.64
Soil - All Depths	10K130014	Thorium-232	0/2			0.5	D	3.66	1.11	2.55
Soil - All Depths	10K130014	Uranium-234						0.0276	1.13	0
Soil - All Depths	10K130014	Uranium-235						0.001196	0.06	0
Soil - All Depths	10K130014	Uranium-238	0/2			3	D	21.9	1.18	20.72
Surface Soil (<0.5 ft)	10K130014	Actinium-227						0.0161	0.21	0
Surface Soil (<0.5 ft)	10K130014	Lead-210						0.0322	0	0.0322
Surface Soil (<0.5 ft)	10K130014	Protactinium-231						0.0184	0.2	0
Surface Soil (<0.5 ft)	10K130014	Radium-226	1/2	1.1	1.1	0.65	D	1.1	1.05	0.05
Surface Soil (<0.5 ft)	10K130014	Radium-228						0.000828	0.98	0
Surface Soil (<0.5 ft)	10K130014	Thorium-228						0.0023	1.18	0
Surface Soil (<0.5 ft)	10K130014	Thorium-230	2/2	1	2.3	1.65	D	2.3	1.66	0.64
Surface Soil (<0.5 ft)	10K130014	Thorium-232	0/2			0.5	D	3.66	1.11	2.55
Surface Soil (<0.5 ft)	10K130014	Uranium-234						0.0276	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K130014	Uranium-235						0.001196	0.06	0
Surface Soil (<0.5 ft)	10K130014	Uranium-238	0/2			3	D	21.9	1.18	20.72
Soil - All Depths	10K140024/VP-10(C)	Actinium-227						0.0399	0.21	0
Soil - All Depths	10K140024/VP-10(C)	Lead-210						0.0798	0	0.0798
Soil - All Depths	10K140024/VP-10(C)	Protactinium-231						0.0456	0.2	0
Soil - All Depths	10K140024/VP-10(C)	Radium-226	3/3	1.6	1.8	1.67	D	1.8	1.05	0.75
Soil - All Depths	10K140024/VP-10(C)	Radium-228						0.002052	0.98	0
Soil - All Depths	10K140024/VP-10(C)	Thorium-228						0.0057	1.18	0
Soil - All Depths	10K140024/VP-10(C)	Thorium-230	3/3	1.5	5.7	3.03	D	5.7	1.66	4.04
Soil - All Depths	10K140024/VP-10(C)	Thorium-232	3/3	1.7	3	2.57	D	3	1.11	1.89
Soil - All Depths	10K140024/VP-10(C)	Uranium-234						0.0684	1.13	0
Soil - All Depths	10K140024/VP-10(C)	Uranium-235						0.002964	0.06	0
Soil - All Depths	10K140024/VP-10(C)	Uranium-238	0/3			8.33	D	12.2	1.18	11.02
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Actinium-227						0.0399	0.21	0
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Lead-210						0.0798	0	0.0798
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Protactinium-231						0.0456	0.2	0
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Radium-226	3/3	1.6	1.8	1.67	D	1.8	1.05	0.75
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Radium-228						0.002052	0.98	0
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Thorium-228						0.0057	1.18	0
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Thorium-230	3/3	1.5	5.7	3.03	D	5.7	1.66	4.04
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Thorium-232	3/3	1.7	3	2.57	D	3	1.11	1.89
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Uranium-234						0.0684	1.13	0
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Uranium-235						0.002964	0.06	0
Surface Soil (<0.5 ft)	10K140024/VP-10(C)	Uranium-238	0/3			8.33	D	12.2	1.18	11.02
Soil - All Depths	10K210053/VP-17	Actinium-227						0.01757	0.21	0
Soil - All Depths	10K210053/VP-17	Lead-210						0.03514	0	0.03514
Soil - All Depths	10K210053/VP-17	Protactinium-231						0.02008	0.2	0
Soil - All Depths	10K210053/VP-17	Radium-226						0.01757	1.05	0
Soil - All Depths	10K210053/VP-17	Radium-228						0.0009036	0.98	0
Soil - All Depths	10K210053/VP-17	Thorium-228						0.00251	1.18	0
Soil - All Depths	10K210053/VP-17	Thorium-230	4/5	1.4	3.2	1.66	D	2.51	1.66	0.85

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K210053/VP-17	Thorium-232						0.00251	1.11	0
Soil - All Depths	10K210053/VP-17	Uranium-234						0.03012	1.13	0
Soil - All Depths	10K210053/VP-17	Uranium-235						0.0013052	0.06	0
Soil - All Depths	10K210053/VP-17	Uranium-238						0.03012	1.18	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Actinium-227						0.01757	0.21	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Lead-210						0.03514	0	0.03514
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Protactinium-231						0.02008	0.2	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Radium-226						0.01757	1.05	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Radium-228						0.0009036	0.98	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Thorium-228						0.00251	1.18	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Thorium-230	4/5	1.4	3.2	1.66	D	2.51	1.66	0.85
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Thorium-232						0.00251	1.11	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Uranium-234						0.03012	1.13	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Uranium-235						0.0013052	0.06	0
Subsurface Soil (>0.5 ft)	10K210053/VP-17	Uranium-238						0.03012	1.18	0
Soil - All Depths	10K210064	Actinium-227						0.03465	0.21	0
Soil - All Depths	10K210064	Lead-210						0.0693	0	0.0693
Soil - All Depths	10K210064	Protactinium-231						0.0396	0.2	0
Soil - All Depths	10K210064	Radium-226						0.03465	1.05	0
Soil - All Depths	10K210064	Radium-228						0.001782	0.98	0
Soil - All Depths	10K210064	Thorium-228						0.00495	1.18	0
Soil - All Depths	10K210064	Thorium-230	7/7	1.5	6.6	3.77	N	4.95	1.66	3.29
Soil - All Depths	10K210064	Thorium-232						0.00495	1.11	0
Soil - All Depths	10K210064	Uranium-234						0.0594	1.13	0
Soil - All Depths	10K210064	Uranium-235						0.002574	0.06	0
Soil - All Depths	10K210064	Uranium-238						0.0594	1.18	0
Subsurface Soil (>0.5 ft)	10K210064	Actinium-227						0.03465	0.21	0
Subsurface Soil (>0.5 ft)	10K210064	Lead-210						0.0693	0	0.0693
Subsurface Soil (>0.5 ft)	10K210064	Protactinium-231						0.0396	0.2	0
Subsurface Soil (>0.5 ft)	10K210064	Radium-226						0.03465	1.05	0
Subsurface Soil (>0.5 ft)	10K210064	Radium-228						0.001782	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K210064	Thorium-228						0.00495	1.18	0
Subsurface Soil (>0.5 ft)	10K210064	Thorium-230	7/7	1.5	6.6	3.77	N	4.95	1.66	3.29
Subsurface Soil (>0.5 ft)	10K210064	Thorium-232						0.00495	1.11	0
Subsurface Soil (>0.5 ft)	10K210064	Uranium-234						0.0594	1.13	0
Subsurface Soil (>0.5 ft)	10K210064	Uranium-235						0.002574	0.06	0
Subsurface Soil (>0.5 ft)	10K210064	Uranium-238						0.0594	1.18	0
Soil - All Depths	10K230031/VP-19	Actinium-227						0.05355	0.21	0
Soil - All Depths	10K230031/VP-19	Lead-210						0.1071	0	0.1071
Soil - All Depths	10K230031/VP-19	Protactinium-231						0.0612	0.2	0
Soil - All Depths	10K230031/VP-19	Radium-226						0.05355	1.05	0
Soil - All Depths	10K230031/VP-19	Radium-228						0.002754	0.98	0
Soil - All Depths	10K230031/VP-19	Thorium-228						0.00765	1.18	0
Soil - All Depths	10K230031/VP-19	Thorium-230	7/8	1.4	11	3.11	L	7.65	1.66	5.99
Soil - All Depths	10K230031/VP-19	Thorium-232						0.00765	1.11	0
Soil - All Depths	10K230031/VP-19	Uranium-234						0.0918	1.13	0
Soil - All Depths	10K230031/VP-19	Uranium-235						0.003978	0.06	0
Soil - All Depths	10K230031/VP-19	Uranium-238						0.0918	1.18	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Actinium-227						0.05355	0.21	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Lead-210						0.1071	0	0.1071
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Protactinium-231						0.0612	0.2	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Radium-226						0.05355	1.05	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Radium-228						0.002754	0.98	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Thorium-228						0.00765	1.18	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Thorium-230	7/8	1.4	11	3.11	L	7.65	1.66	5.99
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Thorium-232						0.00765	1.11	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Uranium-234						0.0918	1.13	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Uranium-235						0.003978	0.06	0
Subsurface Soil (>0.5 ft)	10K230031/VP-19	Uranium-238						0.0918	1.18	0
Soil - All Depths	10K230040/VP-20	Actinium-227						0.03283	0.21	0
Soil - All Depths	10K230040/VP-20	Lead-210						0.06566	0	0.06566
Soil - All Depths	10K230040/VP-20	Protactinium-231						0.03752	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K230040/VP-20	Radium-226						0.03283	1.05	0
Soil - All Depths	10K230040/VP-20	Radium-228						0.0016884	0.98	0
Soil - All Depths	10K230040/VP-20	Thorium-228						0.00469	1.18	0
Soil - All Depths	10K230040/VP-20	Thorium-230	14/14	0.7	8.4	2.82	L	4.69	1.66	3.03
Soil - All Depths	10K230040/VP-20	Thorium-232						0.00469	1.11	0
Soil - All Depths	10K230040/VP-20	Uranium-234						0.05628	1.13	0
Soil - All Depths	10K230040/VP-20	Uranium-235						0.0024388	0.06	0
Soil - All Depths	10K230040/VP-20	Uranium-238						0.05628	1.18	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Actinium-227						0.03283	0.21	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Lead-210						0.06566	0	0.06566
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Protactinium-231						0.03752	0.2	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Radium-226						0.03283	1.05	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Radium-228						0.0016884	0.98	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Thorium-228						0.00469	1.18	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Thorium-230	14/14	0.7	8.4	2.82	L	4.69	1.66	3.03
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Thorium-232						0.00469	1.11	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Uranium-234						0.05628	1.13	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Uranium-235						0.0024388	0.06	0
Subsurface Soil (>0.5 ft)	10K230040/VP-20	Uranium-238						0.05628	1.18	0
Soil - All Depths	10K230051/VP-18	Actinium-227						0.01911	0.21	0
Soil - All Depths	10K230051/VP-18	Lead-210						0.03822	0	0.03822
Soil - All Depths	10K230051/VP-18	Protactinium-231						0.02184	0.2	0
Soil - All Depths	10K230051/VP-18	Radium-226						0.01911	1.05	0
Soil - All Depths	10K230051/VP-18	Radium-228						0.0009828	0.98	0
Soil - All Depths	10K230051/VP-18	Thorium-228						0.00273	1.18	0
Soil - All Depths	10K230051/VP-18	Thorium-230	6/7	1.2	3.2	2.04	N	2.73	1.66	1.07
Soil - All Depths	10K230051/VP-18	Thorium-232						0.00273	1.11	0
Soil - All Depths	10K230051/VP-18	Uranium-234						0.03276	1.13	0
Soil - All Depths	10K230051/VP-18	Uranium-235						0.0014196	0.06	0
Soil - All Depths	10K230051/VP-18	Uranium-238						0.03276	1.18	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Actinium-227						0.01911	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Lead-210						0.03822	0	0.03822
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Protactinium-231						0.02184	0.2	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Radium-226						0.01911	1.05	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Radium-228						0.0009828	0.98	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Thorium-228						0.00273	1.18	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Thorium-230	6/7	1.2	3.2	2.04	N	2.73	1.66	1.07
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Thorium-232						0.00273	1.11	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Uranium-234						0.03276	1.13	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Uranium-235						0.0014196	0.06	0
Subsurface Soil (>0.5 ft)	10K230051/VP-18	Uranium-238						0.03276	1.18	0
Soil - All Depths	10K230073/VP-21	Actinium-227						0.01057	0.21	0
Soil - All Depths	10K230073/VP-21	Lead-210						0.02114	0	0.02114
Soil - All Depths	10K230073/VP-21	Protactinium-231						0.01208	0.2	0
Soil - All Depths	10K230073/VP-21	Radium-226	5/5	0.8	2	1.36	L	2	1.05	0.95
Soil - All Depths	10K230073/VP-21	Radium-228						0.0005436	0.98	0
Soil - All Depths	10K230073/VP-21	Thorium-228						0.00151	1.18	0
Soil - All Depths	10K230073/VP-21	Thorium-230	6/11	0.53	2.4	1.01	L	1.51	1.66	0
Soil - All Depths	10K230073/VP-21	Thorium-232	5/5	1.3	2	1.72	N	2	1.11	0.89
Soil - All Depths	10K230073/VP-21	Uranium-234						0.01812	1.13	0
Soil - All Depths	10K230073/VP-21	Uranium-235						0.0007852	0.06	0
Soil - All Depths	10K230073/VP-21	Uranium-238	2/5	4.8	11.6	5.66	D	9.16	1.18	7.98
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Actinium-227						0.00756	0.21	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Lead-210						0.01512	0	0.01512
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Protactinium-231						0.00864	0.2	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Radium-226						0.00756	1.05	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Radium-228						0.0003888	0.98	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Thorium-228						0.00108	1.18	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Thorium-230	2/6	1.2	1.2	0.85	D	1.08	1.66	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Thorium-232						0.00108	1.11	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Uranium-234						0.01296	1.13	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Uranium-235						0.0005616	0.06	0
Subsurface Soil (>0.5 ft)	10K230073/VP-21	Uranium-238						0.01296	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Actinium-227						0.014	0.21	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Lead-210						0.028	0	0.028
Surface Soil (<0.5 ft)	10K230073/VP-21	Protactinium-231						0.016	0.2	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Radium-226	5/5	0.8	2	1.36	L	2	1.05	0.95
Surface Soil (<0.5 ft)	10K230073/VP-21	Radium-228						0.00072	0.98	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Thorium-228						0.002	1.18	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Thorium-230	4/5	0.53	2.4	1.21	D	2	1.66	0.34
Surface Soil (<0.5 ft)	10K230073/VP-21	Thorium-232	5/5	1.3	2	1.72	N	2	1.11	0.89
Surface Soil (<0.5 ft)	10K230073/VP-21	Uranium-234						0.024	1.13	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Uranium-235						0.00104	0.06	0
Surface Soil (<0.5 ft)	10K230073/VP-21	Uranium-238	2/5	4.8	11.6	5.66	D	9.16	1.18	7.98
Soil - All Depths	10K240094/VP-23	Actinium-227						0.01134	0.21	0
Soil - All Depths	10K240094/VP-23	Lead-210						0.02268	0	0.02268
Soil - All Depths	10K240094/VP-23	Protactinium-231						0.01296	0.2	0
Soil - All Depths	10K240094/VP-23	Radium-226	5/5	1.1	1.8	1.54	N	1.8	1.05	0.75
Soil - All Depths	10K240094/VP-23	Radium-228						0.0005832	0.98	0
Soil - All Depths	10K240094/VP-23	Thorium-228						0.00162	1.18	0
Soil - All Depths	10K240094/VP-23	Thorium-230	10/13	0.67	2.5	1.12	L	1.62	1.66	0
Soil - All Depths	10K240094/VP-23	Thorium-232	5/5	1.3	1.9	1.6	L	1.9	1.11	0.79
Soil - All Depths	10K240094/VP-23	Uranium-234						0.01944	1.13	0
Soil - All Depths	10K240094/VP-23	Uranium-235						0.0008424	0.06	0
Soil - All Depths	10K240094/VP-23	Uranium-238	1/5	4.1	4.1	3.04	D	4.01	1.18	2.83
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Actinium-227						0.01099	0.21	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Lead-210						0.02198	0	0.02198
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Protactinium-231						0.01256	0.2	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Radium-226						0.01099	1.05	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Radium-228						0.0005652	0.98	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Thorium-228						0.00157	1.18	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Thorium-230	6/8	1	2.5	1.21	X	1.57	1.66	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Thorium-232						0.00157	1.11	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Uranium-234						0.01884	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Uranium-235						0.0008164	0.06	0
Subsurface Soil (>0.5 ft)	10K240094/VP-23	Uranium-238						0.01884	1.18	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Actinium-227						0.01106	0.21	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Lead-210						0.02212	0	0.02212
Surface Soil (<0.5 ft)	10K240094/VP-23	Protactinium-231						0.01264	0.2	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Radium-226	5/5	1.1	1.8	1.54	N	1.8	1.05	0.75
Surface Soil (<0.5 ft)	10K240094/VP-23	Radium-228						0.0005688	0.98	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Thorium-228						0.00158	1.18	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Thorium-230	4/5	0.67	1.9	0.984	D	1.58	1.66	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Thorium-232	5/5	1.3	1.9	1.6	L	1.9	1.11	0.79
Surface Soil (<0.5 ft)	10K240094/VP-23	Uranium-234						0.01896	1.13	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Uranium-235						0.0008216	0.06	0
Surface Soil (<0.5 ft)	10K240094/VP-23	Uranium-238	1/5	4.1	4.1	3.04	D	4.01	1.18	2.83
Soil - All Depths	10K240106/VP-22	Actinium-227						0.01099	0.21	0
Soil - All Depths	10K240106/VP-22	Lead-210						0.02198	0	0.02198
Soil - All Depths	10K240106/VP-22	Protactinium-231						0.01256	0.2	0
Soil - All Depths	10K240106/VP-22	Radium-226	3/3	1.2	1.4	1.3	D	1.4	1.05	0.35
Soil - All Depths	10K240106/VP-22	Radium-228						0.0005652	0.98	0
Soil - All Depths	10K240106/VP-22	Thorium-228						0.00157	1.18	0
Soil - All Depths	10K240106/VP-22	Thorium-230	6/8	0.63	2.3	1.05	L	1.57	1.66	0
Soil - All Depths	10K240106/VP-22	Thorium-232	3/3	1.4	1.7	1.57	D	1.7	1.11	0.59
Soil - All Depths	10K240106/VP-22	Uranium-234						0.01884	1.13	0
Soil - All Depths	10K240106/VP-22	Uranium-235						0.0008164	0.06	0
Soil - All Depths	10K240106/VP-22	Uranium-238	3/3	4.8	5	4.87	D	5	1.18	3.82
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Actinium-227						0.00763	0.21	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Lead-210						0.01526	0	0.01526
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Protactinium-231						0.00872	0.2	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Radium-226						0.00763	1.05	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Radium-228						0.0003924	0.98	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Thorium-228						0.00109	1.18	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Thorium-230	3/5	0.9	1.2	0.88	D	1.09	1.66	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Thorium-232						0.00109	1.11	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Uranium-234						0.01308	1.13	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Uranium-235						0.0005668	0.06	0
Subsurface Soil (>0.5 ft)	10K240106/VP-22	Uranium-238						0.01308	1.18	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Actinium-227						0.0161	0.21	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Lead-210						0.0322	0	0.0322
Surface Soil (<0.5 ft)	10K240106/VP-22	Protactinium-231						0.0184	0.2	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Radium-226	3/3	1.2	1.4	1.3	D	1.4	1.05	0.35
Surface Soil (<0.5 ft)	10K240106/VP-22	Radium-228						0.000828	0.98	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Thorium-228						0.0023	1.18	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Thorium-230	3/3	0.63	2.3	1.34	D	2.3	1.66	0.64
Surface Soil (<0.5 ft)	10K240106/VP-22	Thorium-232	3/3	1.4	1.7	1.57	D	1.7	1.11	0.59
Surface Soil (<0.5 ft)	10K240106/VP-22	Uranium-234						0.0276	1.13	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Uranium-235						0.001196	0.06	0
Surface Soil (<0.5 ft)	10K240106/VP-22	Uranium-238	3/3	4.8	5	4.87	D	5	1.18	3.82
Soil - All Depths	10K240182	Actinium-227						0.01134	0.21	0
Soil - All Depths	10K240182	Lead-210						0.02268	0	0.02268
Soil - All Depths	10K240182	Protactinium-231						0.01296	0.2	0
Soil - All Depths	10K240182	Radium-226						0.01134	1.05	0
Soil - All Depths	10K240182	Radium-228						0.0005832	0.98	0
Soil - All Depths	10K240182	Thorium-228						0.00162	1.18	0
Soil - All Depths	10K240182	Thorium-230	5/5	1	1.7	1.36	N	1.62	1.66	0
Soil - All Depths	10K240182	Thorium-232						0.00162	1.11	0
Soil - All Depths	10K240182	Uranium-234						0.01944	1.13	0
Soil - All Depths	10K240182	Uranium-235						0.0008424	0.06	0
Soil - All Depths	10K240182	Uranium-238						0.01944	1.18	0
Surface Soil (<0.5 ft)	10K240182	Actinium-227						0.01134	0.21	0
Surface Soil (<0.5 ft)	10K240182	Lead-210						0.02268	0	0.02268
Surface Soil (<0.5 ft)	10K240182	Protactinium-231						0.01296	0.2	0
Surface Soil (<0.5 ft)	10K240182	Radium-226						0.01134	1.05	0
Surface Soil (<0.5 ft)	10K240182	Radium-228						0.0005832	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K240182	Thorium-228						0.00162	1.18	0
Surface Soil (<0.5 ft)	10K240182	Thorium-230	5/5	1	1.7	1.36	N	1.62	1.66	0
Surface Soil (<0.5 ft)	10K240182	Thorium-232						0.00162	1.11	0
Surface Soil (<0.5 ft)	10K240182	Uranium-234						0.01944	1.13	0
Surface Soil (<0.5 ft)	10K240182	Uranium-235						0.0008424	0.06	0
Surface Soil (<0.5 ft)	10K240182	Uranium-238						0.01944	1.18	0
Soil - All Depths	10K240207	Actinium-227						0.02828	0.21	0
Soil - All Depths	10K240207	Lead-210						0.05656	0	0.05656
Soil - All Depths	10K240207	Protactinium-231						0.03232	0.2	0
Soil - All Depths	10K240207	Radium-226						0.02828	1.05	0
Soil - All Depths	10K240207	Radium-228						0.0014544	0.98	0
Soil - All Depths	10K240207	Thorium-228						0.00404	1.18	0
Soil - All Depths	10K240207	Thorium-230	10/10	1.2	8.1	2.71	L	4.04	1.66	2.38
Soil - All Depths	10K240207	Thorium-232						0.00404	1.11	0
Soil - All Depths	10K240207	Uranium-234						0.04848	1.13	0
Soil - All Depths	10K240207	Uranium-235						0.0021008	0.06	0
Soil - All Depths	10K240207	Uranium-238						0.04848	1.18	0
Subsurface Soil (>0.5 ft)	10K240207	Actinium-227						0.02975	0.21	0
Subsurface Soil (>0.5 ft)	10K240207	Lead-210						0.0595	0	0.0595
Subsurface Soil (>0.5 ft)	10K240207	Protactinium-231						0.034	0.2	0
Subsurface Soil (>0.5 ft)	10K240207	Radium-226						0.02975	1.05	0
Subsurface Soil (>0.5 ft)	10K240207	Radium-228						0.00153	0.98	0
Subsurface Soil (>0.5 ft)	10K240207	Thorium-228						0.00425	1.18	0
Subsurface Soil (>0.5 ft)	10K240207	Thorium-230	8/8	1.6	8.1	2.8	X	4.25	1.66	2.59
Subsurface Soil (>0.5 ft)	10K240207	Thorium-232						0.00425	1.11	0
Subsurface Soil (>0.5 ft)	10K240207	Uranium-234						0.051	1.13	0
Subsurface Soil (>0.5 ft)	10K240207	Uranium-235						0.00221	0.06	0
Subsurface Soil (>0.5 ft)	10K240207	Uranium-238						0.051	1.18	0
Surface Soil (<0.5 ft)	10K240207	Actinium-227						0.0245	0.21	0
Surface Soil (<0.5 ft)	10K240207	Lead-210						0.049	0	0.049
Surface Soil (<0.5 ft)	10K240207	Protactinium-231						0.028	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K240207	Radium-226						0.0245	1.05	0
Surface Soil (<0.5 ft)	10K240207	Radium-228						0.00126	0.98	0
Surface Soil (<0.5 ft)	10K240207	Thorium-228						0.0035	1.18	0
Surface Soil (<0.5 ft)	10K240207	Thorium-230	2/2	1.2	3.5	2.35	D	3.5	1.66	1.84
Surface Soil (<0.5 ft)	10K240207	Thorium-232						0.0035	1.11	0
Surface Soil (<0.5 ft)	10K240207	Uranium-234						0.042	1.13	0
Surface Soil (<0.5 ft)	10K240207	Uranium-235						0.00182	0.06	0
Surface Soil (<0.5 ft)	10K240207	Uranium-238						0.042	1.18	0
Soil - All Depths	10K330030/VP-27	Actinium-227						0.04333	0.21	0
Soil - All Depths	10K330030/VP-27	Lead-210						0.08666	0	0.08666
Soil - All Depths	10K330030/VP-27	Protactinium-231						0.04952	0.2	0
Soil - All Depths	10K330030/VP-27	Radium-226						0.04333	1.05	0
Soil - All Depths	10K330030/VP-27	Radium-228						0.0022284	0.98	0
Soil - All Depths	10K330030/VP-27	Thorium-228						0.00619	1.18	0
Soil - All Depths	10K330030/VP-27	Thorium-230	7/7	1.5	6.6	3.49	L	6.19	1.66	4.53
Soil - All Depths	10K330030/VP-27	Thorium-232						0.00619	1.11	0
Soil - All Depths	10K330030/VP-27	Uranium-234						0.07428	1.13	0
Soil - All Depths	10K330030/VP-27	Uranium-235						0.0032188	0.06	0
Soil - All Depths	10K330030/VP-27	Uranium-238						0.07428	1.18	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Actinium-227						0.04137	0.21	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Lead-210						0.08274	0	0.08274
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Protactinium-231						0.04728	0.2	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Radium-226						0.04137	1.05	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Radium-228						0.0021276	0.98	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Thorium-228						0.00591	1.18	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Thorium-230	4/4	1.5	6.6	3.15	D	5.91	1.66	4.25
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Thorium-232						0.00591	1.11	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Uranium-234						0.07092	1.13	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Uranium-235						0.0030732	0.06	0
Subsurface Soil (>0.5 ft)	10K330030/VP-27	Uranium-238						0.07092	1.18	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Actinium-227						0.028	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Lead-210						0.056	0	0.056
Surface Soil (<0.5 ft)	10K330030/VP-27	Protactinium-231						0.032	0.2	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Radium-226						0.028	1.05	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Radium-228						0.00144	0.98	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Thorium-228						0.004	1.18	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Thorium-230	3/3	3.9	4	3.93	D	4	1.66	2.34
Surface Soil (<0.5 ft)	10K330030/VP-27	Thorium-232						0.004	1.11	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Uranium-234						0.048	1.13	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Uranium-235						0.00208	0.06	0
Surface Soil (<0.5 ft)	10K330030/VP-27	Uranium-238						0.048	1.18	0
Soil - All Depths	10K330140/VP-24	Actinium-227						0.00945	0.21	0
Soil - All Depths	10K330140/VP-24	Lead-210						0.0189	0	0.0189
Soil - All Depths	10K330140/VP-24	Protactinium-231						0.0108	0.2	0
Soil - All Depths	10K330140/VP-24	Radium-226	4/4	0.91	1.6	1.25	D	1.59	1.05	0.54
Soil - All Depths	10K330140/VP-24	Radium-228						0.000486	0.98	0
Soil - All Depths	10K330140/VP-24	Thorium-228						0.00135	1.18	0
Soil - All Depths	10K330140/VP-24	Thorium-230	16/20	0.77	1.7	1.19	L	1.35	1.66	0
Soil - All Depths	10K330140/VP-24	Thorium-232	4/4	1.3	1.7	1.5	D	1.7	1.11	0.59
Soil - All Depths	10K330140/VP-24	Uranium-234						0.0162	1.13	0
Soil - All Depths	10K330140/VP-24	Uranium-235						0.000702	0.06	0
Soil - All Depths	10K330140/VP-24	Uranium-238	2/4	4.5	4.8	3.63	D	4.8	1.18	3.62
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Actinium-227						0.00966	0.21	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Lead-210						0.01932	0	0.01932
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Protactinium-231						0.01104	0.2	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Radium-226						0.00966	1.05	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Radium-228						0.0004968	0.98	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Thorium-228						0.00138	1.18	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Thorium-230	12/16	0.9	1.7	1.23	N	1.38	1.66	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Thorium-232						0.00138	1.11	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Uranium-234						0.01656	1.13	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Uranium-235						0.0007176	0.06	0
Subsurface Soil (>0.5 ft)	10K330140/VP-24	Uranium-238						0.01656	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Actinium-227						0.00931	0.21	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Lead-210						0.01862	0	0.01862
Surface Soil (<0.5 ft)	10K330140/VP-24	Protactinium-231						0.01064	0.2	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Radium-226	4/4	0.91	1.6	1.25	D	1.59	1.05	0.54
Surface Soil (<0.5 ft)	10K330140/VP-24	Radium-228						0.0004788	0.98	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Thorium-228						0.00133	1.18	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Thorium-230	4/4	0.77	1.4	1.01	D	1.33	1.66	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Thorium-232	4/4	1.3	1.7	1.5	D	1.7	1.11	0.59
Surface Soil (<0.5 ft)	10K330140/VP-24	Uranium-234						0.01596	1.13	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Uranium-235						0.0006916	0.06	0
Surface Soil (<0.5 ft)	10K330140/VP-24	Uranium-238	2/4	4.5	4.8	3.63	D	4.8	1.18	3.62
Soil - All Depths	10K330223/VP-29	Actinium-227						0.0224	0.21	0
Soil - All Depths	10K330223/VP-29	Lead-210						0.0448	0	0.0448
Soil - All Depths	10K330223/VP-29	Protactinium-231						0.0256	0.2	0
Soil - All Depths	10K330223/VP-29	Radium-226						0.0224	1.05	0
Soil - All Depths	10K330223/VP-29	Radium-228						0.001152	0.98	0
Soil - All Depths	10K330223/VP-29	Thorium-228						0.0032	1.18	0
Soil - All Depths	10K330223/VP-29	Thorium-230	6/6	0.7	3.2	1.55	L	3.2	1.66	1.54
Soil - All Depths	10K330223/VP-29	Thorium-232						0.0032	1.11	0
Soil - All Depths	10K330223/VP-29	Uranium-234						0.0384	1.13	0
Soil - All Depths	10K330223/VP-29	Uranium-235						0.001664	0.06	0
Soil - All Depths	10K330223/VP-29	Uranium-238						0.0384	1.18	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Actinium-227						0.0224	0.21	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Lead-210						0.0448	0	0.0448
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Protactinium-231						0.0256	0.2	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Radium-226						0.0224	1.05	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Radium-228						0.001152	0.98	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Thorium-228						0.0032	1.18	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Thorium-230	6/6	0.7	3.2	1.55	L	3.2	1.66	1.54
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Thorium-232						0.0032	1.11	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Uranium-234						0.0384	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Uranium-235						0.001664	0.06	0
Subsurface Soil (>0.5 ft)	10K330223/VP-29	Uranium-238						0.0384	1.18	0
Soil - All Depths	10K330232/VP-30	Actinium-227						0.0133	0.21	0
Soil - All Depths	10K330232/VP-30	Lead-210						0.0266	0	0.0266
Soil - All Depths	10K330232/VP-30	Protactinium-231						0.0152	0.2	0
Soil - All Depths	10K330232/VP-30	Radium-226						0.0133	1.05	0
Soil - All Depths	10K330232/VP-30	Radium-228						0.000684	0.98	0
Soil - All Depths	10K330232/VP-30	Thorium-228						0.0019	1.18	0
Soil - All Depths	10K330232/VP-30	Thorium-230	1/1	1.9	1.9	1.9	D	1.9	1.66	0.24
Soil - All Depths	10K330232/VP-30	Thorium-232						0.0019	1.11	0
Soil - All Depths	10K330232/VP-30	Uranium-234						0.0228	1.13	0
Soil - All Depths	10K330232/VP-30	Uranium-235						0.000988	0.06	0
Soil - All Depths	10K330232/VP-30	Uranium-238						0.0228	1.18	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Actinium-227						0.0133	0.21	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Lead-210						0.0266	0	0.0266
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Protactinium-231						0.0152	0.2	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Radium-226						0.0133	1.05	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Radium-228						0.000684	0.98	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Thorium-228						0.0019	1.18	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Thorium-230	1/1	1.9	1.9	1.9	D	1.9	1.66	0.24
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Thorium-232						0.0019	1.11	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Uranium-234						0.0228	1.13	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Uranium-235						0.000988	0.06	0
Subsurface Soil (>0.5 ft)	10K330232/VP-30	Uranium-238						0.0228	1.18	0
Soil - All Depths	10K330241/VP-32	Actinium-227						0.04564	0.21	0
Soil - All Depths	10K330241/VP-32	Lead-210						0.09128	0	0.09128
Soil - All Depths	10K330241/VP-32	Protactinium-231						0.05216	0.2	0
Soil - All Depths	10K330241/VP-32	Radium-226						0.04564	1.05	0
Soil - All Depths	10K330241/VP-32	Radium-228						0.0023472	0.98	0
Soil - All Depths	10K330241/VP-32	Thorium-228						0.00652	1.18	0
Soil - All Depths	10K330241/VP-32	Thorium-230	16/17	1.2	12	3.52	L	6.52	1.66	4.86

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K330241/VP-32	Thorium-232						0.00652	1.11	0
Soil - All Depths	10K330241/VP-32	Uranium-234						0.07824	1.13	0
Soil - All Depths	10K330241/VP-32	Uranium-235						0.0033904	0.06	0
Soil - All Depths	10K330241/VP-32	Uranium-238						0.07824	1.18	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Actinium-227						0.084	0.21	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Lead-210						0.168	0	0.168
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Protactinium-231						0.096	0.2	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Radium-226						0.084	1.05	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Radium-228						0.00432	0.98	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Thorium-228						0.012	1.18	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Thorium-230	9/10	1.2	12	4.32	L	12	1.66	10.34
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Thorium-232						0.012	1.11	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Uranium-234						0.144	1.13	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Uranium-235						0.00624	0.06	0
Subsurface Soil (>0.5 ft)	10K330241/VP-32	Uranium-238						0.144	1.18	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Actinium-227						0.02541	0.21	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Lead-210						0.05082	0	0.05082
Surface Soil (<0.5 ft)	10K330241/VP-32	Protactinium-231						0.02904	0.2	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Radium-226						0.02541	1.05	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Radium-228						0.0013068	0.98	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Thorium-228						0.00363	1.18	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Thorium-230	7/7	1.4	4	2.39	L	3.63	1.66	1.97
Surface Soil (<0.5 ft)	10K330241/VP-32	Thorium-232						0.00363	1.11	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Uranium-234						0.04356	1.13	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Uranium-235						0.0018876	0.06	0
Surface Soil (<0.5 ft)	10K330241/VP-32	Uranium-238						0.04356	1.18	0
Soil - All Depths	10K330250/VP-31A	Actinium-227						0.0777	0.21	0
Soil - All Depths	10K330250/VP-31A	Lead-210						0.1554	0	0.1554
Soil - All Depths	10K330250/VP-31A	Protactinium-231						0.0888	0.2	0
Soil - All Depths	10K330250/VP-31A	Radium-226	1/1	1.4	1.4	1.4	D	1.4	1.05	0.35
Soil - All Depths	10K330250/VP-31A	Radium-228						0.003996	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K330250/VP-31A	Thorium-228						0.0111	1.18	0
Soil - All Depths	10K330250/VP-31A	Thorium-230	10/10	1.7	27	6.37	X	11.1	1.66	9.44
Soil - All Depths	10K330250/VP-31A	Thorium-232	1/1	2	2	2	D	2	1.11	0.89
Soil - All Depths	10K330250/VP-31A	Uranium-234						0.1332	1.13	0
Soil - All Depths	10K330250/VP-31A	Uranium-235						0.005772	0.06	0
Soil - All Depths	10K330250/VP-31A	Uranium-238						0.1332	1.18	0
Soil - All Depths	10K330250/VP-31A	Uranium-238	0/1			5	D		1.18	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Actinium-227						0.0882	0.21	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Lead-210						0.1764	0	0.1764
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Protactinium-231						0.1008	0.2	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Radium-226						0.0882	1.05	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Radium-228						0.004536	0.98	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Thorium-228						0.0126	1.18	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Thorium-230	7/7	1.7	27	5.71	X	12.6	1.66	10.94
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Thorium-232						0.0126	1.11	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Uranium-234						0.1512	1.13	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Uranium-235						0.006552	0.06	0
Subsurface Soil (>0.5 ft)	10K330250/VP-31A	Uranium-238						0.1512	1.18	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Actinium-227						0.098	0.21	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Lead-210						0.196	0	0.196
Surface Soil (<0.5 ft)	10K330250/VP-31A	Protactinium-231						0.112	0.2	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Radium-226	1/1	1.4	1.4	1.4	D	1.4	1.05	0.35
Surface Soil (<0.5 ft)	10K330250/VP-31A	Radium-228						0.00504	0.98	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Thorium-228						0.014	1.18	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Thorium-230	3/3	3.3	14	7.9	D	14	1.66	12.34
Surface Soil (<0.5 ft)	10K330250/VP-31A	Thorium-232	1/1	2	2	2	D	2	1.11	0.89
Surface Soil (<0.5 ft)	10K330250/VP-31A	Uranium-234						0.168	1.13	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Uranium-235						0.00728	0.06	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Uranium-238						0.168	1.18	0
Surface Soil (<0.5 ft)	10K330250/VP-31A	Uranium-238	0/1			5	D		1.18	0
Soil - All Depths	10K330324/VP-34	Actinium-227						0.021	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K330324/VP-34	Lead-210						0.042	0	0.042
Soil - All Depths	10K330324/VP-34	Protactinium-231						0.024	0.2	0
Soil - All Depths	10K330324/VP-34	Radium-226						0.021	1.05	0
Soil - All Depths	10K330324/VP-34	Radium-228						0.00108	0.98	0
Soil - All Depths	10K330324/VP-34	Thorium-228						0.003	1.18	0
Soil - All Depths	10K330324/VP-34	Thorium-230	4/4	1.8	3	2.4	D	3	1.66	1.34
Soil - All Depths	10K330324/VP-34	Thorium-232						0.003	1.11	0
Soil - All Depths	10K330324/VP-34	Uranium-234						0.036	1.13	0
Soil - All Depths	10K330324/VP-34	Uranium-235						0.00156	0.06	0
Soil - All Depths	10K330324/VP-34	Uranium-238						0.036	1.18	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Actinium-227						0.021	0.21	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Lead-210						0.042	0	0.042
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Protactinium-231						0.024	0.2	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Radium-226						0.021	1.05	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Radium-228						0.00108	0.98	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Thorium-228						0.003	1.18	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Thorium-230	4/4	1.8	3	2.4	D	3	1.66	1.34
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Thorium-232						0.003	1.11	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Uranium-234						0.036	1.13	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Uranium-235						0.00156	0.06	0
Subsurface Soil (>0.5 ft)	10K330324/VP-34	Uranium-238						0.036	1.18	0
Soil - All Depths	10K330333/VP-33	Actinium-227						0.02093	0.21	0
Soil - All Depths	10K330333/VP-33	Lead-210						0.04186	0	0.04186
Soil - All Depths	10K330333/VP-33	Protactinium-231						0.02392	0.2	0
Soil - All Depths	10K330333/VP-33	Radium-226						0.02093	1.05	0
Soil - All Depths	10K330333/VP-33	Radium-228						0.0010764	0.98	0
Soil - All Depths	10K330333/VP-33	Thorium-228						0.00299	1.18	0
Soil - All Depths	10K330333/VP-33	Thorium-230	4/4	1.3	3.1	2.08	D	2.99	1.66	1.33
Soil - All Depths	10K330333/VP-33	Thorium-232						0.00299	1.11	0
Soil - All Depths	10K330333/VP-33	Uranium-234						0.03588	1.13	0
Soil - All Depths	10K330333/VP-33	Uranium-235						0.0015548	0.06	0
Soil - All Depths	10K330333/VP-33	Uranium-238						0.03588	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Actinium-227						0.02093	0.21	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Lead-210						0.04186	0	0.04186
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Protactinium-231						0.02392	0.2	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Radium-226						0.02093	1.05	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Radium-228						0.0010764	0.98	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Thorium-228						0.00299	1.18	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Thorium-230	4/4	1.3	3.1	2.08	D	2.99	1.66	1.33
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Thorium-232						0.00299	1.11	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Uranium-234						0.03588	1.13	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Uranium-235						0.0015548	0.06	0
Subsurface Soil (>0.5 ft)	10K330333/VP-33	Uranium-238						0.03588	1.18	0
Soil - All Depths	10K330342/VP-33	Actinium-227						0.0147	0.21	0
Soil - All Depths	10K330342/VP-33	Lead-210						0.0294	0	0.0294
Soil - All Depths	10K330342/VP-33	Protactinium-231						0.0168	0.2	0
Soil - All Depths	10K330342/VP-33	Radium-226						0.0147	1.05	0
Soil - All Depths	10K330342/VP-33	Radium-228						0.000756	0.98	0
Soil - All Depths	10K330342/VP-33	Thorium-228						0.0021	1.18	0
Soil - All Depths	10K330342/VP-33	Thorium-230	2/2	1.8	2.1	1.95	D	2.1	1.66	0.44
Soil - All Depths	10K330342/VP-33	Thorium-232						0.0021	1.11	0
Soil - All Depths	10K330342/VP-33	Uranium-234						0.0252	1.13	0
Soil - All Depths	10K330342/VP-33	Uranium-235						0.001092	0.06	0
Soil - All Depths	10K330342/VP-33	Uranium-238						0.0252	1.18	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Actinium-227						0.0147	0.21	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Lead-210						0.0294	0	0.0294
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Protactinium-231						0.0168	0.2	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Radium-226						0.0147	1.05	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Radium-228						0.000756	0.98	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Thorium-228						0.0021	1.18	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Thorium-230	2/2	1.8	2.1	1.95	D	2.1	1.66	0.44
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Thorium-232						0.0021	1.11	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Uranium-234						0.0252	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Uranium-235						0.001092	0.06	0
Subsurface Soil (>0.5 ft)	10K330342/VP-33	Uranium-238						0.0252	1.18	0
Soil - All Depths	10K330351/VP-28	Actinium-227						0.0273	0.21	0
Soil - All Depths	10K330351/VP-28	Lead-210						0.0546	0	0.0546
Soil - All Depths	10K330351/VP-28	Protactinium-231						0.0312	0.2	0
Soil - All Depths	10K330351/VP-28	Radium-226						0.0273	1.05	0
Soil - All Depths	10K330351/VP-28	Radium-228						0.001404	0.98	0
Soil - All Depths	10K330351/VP-28	Thorium-228						0.0039	1.18	0
Soil - All Depths	10K330351/VP-28	Thorium-230	5/5	1.5	3.9	2.36	L	3.9	1.66	2.24
Soil - All Depths	10K330351/VP-28	Thorium-232						0.0039	1.11	0
Soil - All Depths	10K330351/VP-28	Uranium-234						0.0468	1.13	0
Soil - All Depths	10K330351/VP-28	Uranium-235						0.002028	0.06	0
Soil - All Depths	10K330351/VP-28	Uranium-238						0.0468	1.18	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Actinium-227						0.0273	0.21	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Lead-210						0.0546	0	0.0546
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Protactinium-231						0.0312	0.2	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Radium-226						0.0273	1.05	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Radium-228						0.001404	0.98	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Thorium-228						0.0039	1.18	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Thorium-230	5/5	1.5	3.9	2.36	L	3.9	1.66	2.24
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Thorium-232						0.0039	1.11	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Uranium-234						0.0468	1.13	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Uranium-235						0.002028	0.06	0
Subsurface Soil (>0.5 ft)	10K330351/VP-28	Uranium-238						0.0468	1.18	0
Soil - All Depths	10K420010/VP-9(C)	Actinium-227						0.04095	0.21	0
Soil - All Depths	10K420010/VP-9(C)	Lead-210						0.0819	0	0.0819
Soil - All Depths	10K420010/VP-9(C)	Protactinium-231						0.0468	0.2	0
Soil - All Depths	10K420010/VP-9(C)	Radium-226	3/4	1.4	1.8	1.45	D	1.8	1.05	0.75
Soil - All Depths	10K420010/VP-9(C)	Radium-228						0.002106	0.98	0
Soil - All Depths	10K420010/VP-9(C)	Thorium-228						0.00585	1.18	0
Soil - All Depths	10K420010/VP-9(C)	Thorium-230	4/4	1	6.5	3.03	D	5.85	1.66	4.19

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K420010/VP-9(C)	Thorium-232	3/4	1	1.3	1.08	D	1.25	1.11	0.14
Soil - All Depths	10K420010/VP-9(C)	Uranium-234						0.0702	1.13	0
Soil - All Depths	10K420010/VP-9(C)	Uranium-235						0.003042	0.06	0
Soil - All Depths	10K420010/VP-9(C)	Uranium-238	0/4			7.5	D	10.3	1.18	9.12
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Actinium-227						0.04095	0.21	0
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Lead-210						0.0819	0	0.0819
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Protactinium-231						0.0468	0.2	0
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Radium-226	3/4	1.4	1.8	1.45	D	1.8	1.05	0.75
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Radium-228						0.002106	0.98	0
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Thorium-228						0.00585	1.18	0
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Thorium-230	4/4	1	6.5	3.03	D	5.85	1.66	4.19
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Thorium-232	3/4	1	1.3	1.08	D	1.25	1.11	0.14
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Uranium-234						0.0702	1.13	0
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Uranium-235						0.003042	0.06	0
Surface Soil (<0.5 ft)	10K420010/VP-9(C)	Uranium-238	0/4			7.5	D	10.3	1.18	9.12
Soil - All Depths	10K430042/VP-63	Actinium-227						0.0182	0.21	0
Soil - All Depths	10K430042/VP-63	Lead-210						0.0364	0	0.0364
Soil - All Depths	10K430042/VP-63	Protactinium-231						0.0208	0.2	0
Soil - All Depths	10K430042/VP-63	Radium-226						0.0182	1.05	0
Soil - All Depths	10K430042/VP-63	Radium-228						0.000936	0.98	0
Soil - All Depths	10K430042/VP-63	Thorium-228						0.0026	1.18	0
Soil - All Depths	10K430042/VP-63	Thorium-230	1/1	2.6	2.6	2.6	D	2.6	1.66	0.94
Soil - All Depths	10K430042/VP-63	Thorium-232						0.0026	1.11	0
Soil - All Depths	10K430042/VP-63	Uranium-234						0.0312	1.13	0
Soil - All Depths	10K430042/VP-63	Uranium-235						0.001352	0.06	0
Soil - All Depths	10K430042/VP-63	Uranium-238						0.0312	1.18	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Actinium-227						0.0182	0.21	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Lead-210						0.0364	0	0.0364
Surface Soil (<0.5 ft)	10K430042/VP-63	Protactinium-231						0.0208	0.2	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Radium-226						0.0182	1.05	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Radium-228						0.000936	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Thorium-228						0.0026	1.18	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Thorium-230	1/1	2.6	2.6	2.6	D	2.6	1.66	0.94
Surface Soil (<0.5 ft)	10K430042/VP-63	Thorium-232						0.0026	1.11	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Uranium-234						0.0312	1.13	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Uranium-235						0.001352	0.06	0
Surface Soil (<0.5 ft)	10K430042/VP-63	Uranium-238						0.0312	1.18	0
Soil - All Depths	10K440074/VP-8(C)	Actinium-227						0.0805	0.21	0
Soil - All Depths	10K440074/VP-8(C)	Lead-210						0.161	0	0.161
Soil - All Depths	10K440074/VP-8(C)	Protactinium-231						0.092	0.2	0
Soil - All Depths	10K440074/VP-8(C)	Radium-226	31/34	0.4	2.8	1.55	N	1.73	1.05	0.68
Soil - All Depths	10K440074/VP-8(C)	Radium-228						0.00414	0.98	0
Soil - All Depths	10K440074/VP-8(C)	Thorium-228						0.0115	1.18	0
Soil - All Depths	10K440074/VP-8(C)	Thorium-230	33/33	1	40	7.62	L	11.5	1.66	9.84
Soil - All Depths	10K440074/VP-8(C)	Thorium-232	27/34	0.9	4	1.9	L	2.2	1.11	1.09
Soil - All Depths	10K440074/VP-8(C)	Uranium-234						0.138	1.13	0
Soil - All Depths	10K440074/VP-8(C)	Uranium-235						0.00598	0.06	0
Soil - All Depths	10K440074/VP-8(C)	Uranium-238	3/34	3	4.2	6.38	D	4.2	1.18	3.02
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Actinium-227						0.1624	0.21	0
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Lead-210						0.3248	0	0.3248
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Protactinium-231						0.1856	0.2	0
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Radium-226	11/13	0.5	2.7	1.32	L	1.93	1.05	0.88
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Radium-228						0.008352	0.98	0
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Thorium-228						0.0232	1.18	0
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Thorium-230	12/12	1.1	40	8.26	L	23.2	1.66	21.54
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Thorium-232	8/13	0.9	3	1.42	L	1.72	1.11	0.61
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Uranium-234						0.2784	1.13	0
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Uranium-235						0.012064	0.06	0
Subsurface Soil (>0.5 ft)	10K440074/VP-8(C)	Uranium-238	0/13			6.41	D	7.47	1.18	6.29
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Actinium-227						0.0868	0.21	0
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Lead-210						0.1736	0	0.1736
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Protactinium-231						0.0992	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Radium-226	20/21	0.4	2.8	1.69	N	1.9	1.05	0.85
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Radium-228						0.004464	0.98	0
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Thorium-228						0.0124	1.18	0
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Thorium-230	21/21	1	23	7.25	L	12.4	1.66	10.74
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Thorium-232	19/21	1	4	2.2	L	2.66	1.11	1.55
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Uranium-234						0.1488	1.13	0
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Uranium-235						0.006448	0.06	0
Surface Soil (<0.5 ft)	10K440074/VP-8(C)	Uranium-238	3/21	3	4.2	6.36	D	4.2	1.18	3.02
Soil - All Depths	10K440096	Actinium-227						0.06349	0.21	0
Soil - All Depths	10K440096	Lead-210						0.12698	0	0.12698
Soil - All Depths	10K440096	Protactinium-231						0.07256	0.2	0
Soil - All Depths	10K440096	Radium-226	43/46	0.4	2.5	1.41	N	1.53	1.05	0.48
Soil - All Depths	10K440096	Radium-228						0.0032652	0.98	0
Soil - All Depths	10K440096	Thorium-228						0.00907	1.18	0
Soil - All Depths	10K440096	Thorium-230	46/46	0.8	61	6.13	X	9.07	1.66	7.41
Soil - All Depths	10K440096	Thorium-232	34/46	0.7	5	1.59	X	1.8	1.11	0.69
Soil - All Depths	10K440096	Uranium-234						0.10884	1.13	0
Soil - All Depths	10K440096	Uranium-235						0.0047164	0.06	0
Soil - All Depths	10K440096	Uranium-238	1/46	4.8	4.8	6.21	D	4.8	1.18	3.62
Subsurface Soil (>0.5 ft)	10K440096	Actinium-227						0.364	0.21	0.154
Subsurface Soil (>0.5 ft)	10K440096	Lead-210						0.728	0	0.728
Subsurface Soil (>0.5 ft)	10K440096	Protactinium-231						0.416	0.2	0.216
Subsurface Soil (>0.5 ft)	10K440096	Radium-226	7/7	0.7	2.2	1.24	L	1.89	1.05	0.84
Subsurface Soil (>0.5 ft)	10K440096	Radium-228						0.01872	0.98	0
Subsurface Soil (>0.5 ft)	10K440096	Thorium-228						0.052	1.18	0
Subsurface Soil (>0.5 ft)	10K440096	Thorium-230	7/7	1.6	52	14.6	L	52	1.66	50.34
Subsurface Soil (>0.5 ft)	10K440096	Thorium-232	4/7	0.9	1.9	1.19	D	1.44	1.11	0.33
Subsurface Soil (>0.5 ft)	10K440096	Uranium-234						0.624	1.13	0
Subsurface Soil (>0.5 ft)	10K440096	Uranium-235						0.02704	0.06	0
Subsurface Soil (>0.5 ft)	10K440096	Uranium-238	0/7			5	D	6.59	1.18	5.41
Surface Soil (<0.5 ft)	10K440096	Actinium-227						0.05117	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K440096	Lead-210						0.10234	0	0.10234
Surface Soil (<0.5 ft)	10K440096	Protactinium-231						0.05848	0.2	0
Surface Soil (<0.5 ft)	10K440096	Radium-226	36/39	0.4	2.5	1.44	N	1.57	1.05	0.52
Surface Soil (<0.5 ft)	10K440096	Radium-228						0.0026316	0.98	0
Surface Soil (<0.5 ft)	10K440096	Thorium-228						0.00731	1.18	0
Surface Soil (<0.5 ft)	10K440096	Thorium-230	39/39	0.8	61	4.62	X	7.31	1.66	5.65
Surface Soil (<0.5 ft)	10K440096	Thorium-232	30/39	0.7	5	1.67	L	1.98	1.11	0.87
Surface Soil (<0.5 ft)	10K440096	Uranium-234						0.08772	1.13	0
Surface Soil (<0.5 ft)	10K440096	Uranium-235						0.0038012	0.06	0
Surface Soil (<0.5 ft)	10K440096	Uranium-238	1/39	4.8	4.8	6.43	D	4.8	1.18	3.62
Soil - All Depths	10K440104/VP-6(C)	Actinium-227						0.0133	0.21	0
Soil - All Depths	10K440104/VP-6(C)	Lead-210						0.0266	0	0.0266
Soil - All Depths	10K440104/VP-6(C)	Protactinium-231						0.0152	0.2	0
Soil - All Depths	10K440104/VP-6(C)	Radium-226	2/2	1.1	1.5	1.3	D	1.5	1.05	0.45
Soil - All Depths	10K440104/VP-6(C)	Radium-228						0.000684	0.98	0
Soil - All Depths	10K440104/VP-6(C)	Thorium-228						0.0019	1.18	0
Soil - All Depths	10K440104/VP-6(C)	Thorium-230	2/2	1.1	1.9	1.5	D	1.9	1.66	0.24
Soil - All Depths	10K440104/VP-6(C)	Thorium-232	2/2	1.6	1.8	1.7	D	1.8	1.11	0.69
Soil - All Depths	10K440104/VP-6(C)	Uranium-234						0.0228	1.13	0
Soil - All Depths	10K440104/VP-6(C)	Uranium-235						0.000988	0.06	0
Soil - All Depths	10K440104/VP-6(C)	Uranium-238	0/2			5.85	D	6.8	1.18	5.62
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Actinium-227						0.0133	0.21	0
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Lead-210						0.0266	0	0.0266
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Protactinium-231						0.0152	0.2	0
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Radium-226	2/2	1.1	1.5	1.3	D	1.5	1.05	0.45
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Radium-228						0.000684	0.98	0
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Thorium-228						0.0019	1.18	0
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Thorium-230	2/2	1.1	1.9	1.5	D	1.9	1.66	0.24
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Thorium-232	2/2	1.6	1.8	1.7	D	1.8	1.11	0.69
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Uranium-234						0.0228	1.13	0
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Uranium-235						0.000988	0.06	0
Surface Soil (<0.5 ft)	10K440104/VP-6(C)	Uranium-238	0/2			5.85	D	6.8	1.18	5.62

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K440113/VP-7(C)	Actinium-227						0.0364	0.21	0
Soil - All Depths	10K440113/VP-7(C)	Lead-210						0.0728	0	0.0728
Soil - All Depths	10K440113/VP-7(C)	Protactinium-231						0.0416	0.2	0
Soil - All Depths	10K440113/VP-7(C)	Radium-226	2/2	1.2	1.7	1.45	D	1.7	1.05	0.65
Soil - All Depths	10K440113/VP-7(C)	Radium-228						0.001872	0.98	0
Soil - All Depths	10K440113/VP-7(C)	Thorium-228						0.0052	1.18	0
Soil - All Depths	10K440113/VP-7(C)	Thorium-230	2/2	1.2	5.2	3.2	D	5.2	1.66	3.54
Soil - All Depths	10K440113/VP-7(C)	Thorium-232	1/2	3	3	1.7	D	3	1.11	1.89
Soil - All Depths	10K440113/VP-7(C)	Uranium-234						0.0624	1.13	0
Soil - All Depths	10K440113/VP-7(C)	Uranium-235						0.002704	0.06	0
Soil - All Depths	10K440113/VP-7(C)	Uranium-238	0/2			9.5	D	31.6	1.18	30.42
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Actinium-227						0.0364	0.21	0
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Lead-210						0.0728	0	0.0728
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Protactinium-231						0.0416	0.2	0
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Radium-226	2/2	1.2	1.7	1.45	D	1.7	1.05	0.65
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Radium-228						0.001872	0.98	0
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Thorium-228						0.0052	1.18	0
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Thorium-230	2/2	1.2	5.2	3.2	D	5.2	1.66	3.54
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Thorium-232	1/2	3	3	1.7	D	3	1.11	1.89
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Uranium-234						0.0624	1.13	0
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Uranium-235						0.002704	0.06	0
Surface Soil (<0.5 ft)	10K440113/VP-7(C)	Uranium-238	0/2			9.5	D	31.6	1.18	30.42
Soil - All Depths	10K510067/VP-6(L)	Actinium-227						0.04116	0.21	0
Soil - All Depths	10K510067/VP-6(L)	Lead-210						0.08232	0	0.08232
Soil - All Depths	10K510067/VP-6(L)	Protactinium-231						0.04704	0.2	0
Soil - All Depths	10K510067/VP-6(L)	Radium-226	84/88	0.4	3	1.49	N	1.58	1.05	0.53
Soil - All Depths	10K510067/VP-6(L)	Radium-228						0.0021168	0.98	0
Soil - All Depths	10K510067/VP-6(L)	Thorium-228						0.00588	1.18	0
Soil - All Depths	10K510067/VP-6(L)	Thorium-230	83/84	1	40	4.86	X	5.88	1.66	4.22
Soil - All Depths	10K510067/VP-6(L)	Thorium-232	80/88	0.8	4	1.97	X	2.11	1.11	1
Soil - All Depths	10K510067/VP-6(L)	Uranium-234						0.07056	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K510067/VP-6(L)	Uranium-235						0.0030576	0.06	0
Soil - All Depths	10K510067/VP-6(L)	Uranium-238	0/88			8.36	D	8.81	1.18	7.63
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Actinium-227						0.04585	0.21	0
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Lead-210						0.0917	0	0.0917
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Protactinium-231						0.0524	0.2	0
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Radium-226	15/16	1	2.2	1.63	N	1.81	1.05	0.76
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Radium-228						0.002358	0.98	0
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Thorium-228						0.00655	1.18	0
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Thorium-230	12/13	1.2	9.6	3.66	L	6.55	1.66	4.89
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Thorium-232	15/16	0.9	4	2.44	L	3.17	1.11	2.06
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Uranium-234						0.0786	1.13	0
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Uranium-235						0.003406	0.06	0
Subsurface Soil (>0.5 ft)	10K510067/VP-6(L)	Uranium-238	0/16			8.06	D	9.3	1.18	8.12
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Actinium-227						0.04389	0.21	0
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Lead-210						0.08778	0	0.08778
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Protactinium-231						0.05016	0.2	0
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Radium-226	69/72	0.4	3	1.46	L	1.58	1.05	0.53
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Radium-228						0.0022572	0.98	0
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Thorium-228						0.00627	1.18	0
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Thorium-230	71/71	1	40	5.08	X	6.27	1.66	4.61
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Thorium-232	65/72	0.8	4	1.87	X	2	1.11	0.89
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Uranium-234						0.07524	1.13	0
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Uranium-235						0.0032604	0.06	0
Surface Soil (<0.5 ft)	10K510067/VP-6(L)	Uranium-238	0/72			8.43	D	8.91	1.18	7.73
Soil - All Depths	10K520022/VP-3(L)	Actinium-227						0.2674	0.21	0.0574
Soil - All Depths	10K520022/VP-3(L)	Lead-210						0.5348	0	0.5348
Soil - All Depths	10K520022/VP-3(L)	Protactinium-231						0.3056	0.2	0.1056
Soil - All Depths	10K520022/VP-3(L)	Radium-226	94/94	0.6	10	1.83	X	2.03	1.05	0.98
Soil - All Depths	10K520022/VP-3(L)	Radium-228						0.013752	0.98	0
Soil - All Depths	10K520022/VP-3(L)	Thorium-228						0.0382	1.18	0
Soil - All Depths	10K520022/VP-3(L)	Thorium-230	113/113	0.2	1200	19.6	X	38.2	1.66	36.54

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K520022/VP-3(L)	Thorium-232	82/94	0.9	5	1.99	X	2.14	1.11	1.03
Soil - All Depths	10K520022/VP-3(L)	Uranium-234						0.4584	1.13	0
Soil - All Depths	10K520022/VP-3(L)	Uranium-235						0.019864	0.06	0
Soil - All Depths	10K520022/VP-3(L)	Uranium-238	1/94	17	17	9.93	D	10.9	1.18	9.72
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Actinium-227						0.2863	0.21	0.0763
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Lead-210						0.5726	0	0.5726
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Protactinium-231						0.3272	0.2	0.1272
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Radium-226	77/77	0.6	10	1.83	X	2.06	1.05	1.01
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Radium-228						0.014724	0.98	0
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Thorium-228						0.0409	1.18	0
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Thorium-230	83/83	0.5	1200	16.9	X	40.9	1.66	39.24
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Thorium-232	68/77	0.9	5	2.03	X	2.19	1.11	1.08
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Uranium-234						0.4908	1.13	0
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Uranium-235						0.021268	0.06	0
Subsurface Soil (>0.5 ft)	10K520022/VP-3(L)	Uranium-238	1/77	17	17	10.2	D	11.4	1.18	10.22
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Actinium-227						0.4445	0.21	0.2345
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Lead-210						0.889	0	0.889
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Protactinium-231						0.508	0.2	0.308
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Radium-226	17/17	1.1	4.2	1.85	X	2.19	1.05	1.14
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Radium-228						0.02286	0.98	0
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Thorium-228						0.0635	1.18	0
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Thorium-230	30/30	0.2	390	27	L	63.5	1.66	61.84
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Thorium-232	14/17	1.1	4	1.81	X	2.2	1.11	1.09
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Uranium-234						0.762	1.13	0
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Uranium-235						0.03302	0.06	0
Surface Soil (<0.5 ft)	10K520022/VP-3(L)	Uranium-238	0/17			8.88	D	9.96	1.18	8.78
Soil - All Depths	10K520033/VP-5(L)	Actinium-227						0.01645	0.21	0
Soil - All Depths	10K520033/VP-5(L)	Lead-210						0.0329	0	0.0329
Soil - All Depths	10K520033/VP-5(L)	Protactinium-231						0.0188	0.2	0
Soil - All Depths	10K520033/VP-5(L)	Radium-226	77/77	0.7	4	1.7	L	1.82	1.05	0.77
Soil - All Depths	10K520033/VP-5(L)	Radium-228						0.000846	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K520033/VP-5(L)	Thorium-228						0.00235	1.18	0
Soil - All Depths	10K520033/VP-5(L)	Thorium-230	79/81	0.6	12	2	X	2.35	1.66	0.69
Soil - All Depths	10K520033/VP-5(L)	Thorium-232	72/77	0.8	7	2.24	X	2.44	1.11	1.33
Soil - All Depths	10K520033/VP-5(L)	Uranium-234						0.0282	1.13	0
Soil - All Depths	10K520033/VP-5(L)	Uranium-235						0.001222	0.06	0
Soil - All Depths	10K520033/VP-5(L)	Uranium-238	0/77			10.2	D	11.1	1.18	9.92
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Actinium-227						0.01288	0.21	0
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Lead-210						0.02576	0	0.02576
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Protactinium-231						0.01472	0.2	0
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Radium-226	65/65	0.9	4	1.76	X	1.9	1.05	0.85
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Radium-228						0.0006624	0.98	0
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Thorium-228						0.00184	1.18	0
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Thorium-230	65/66	0.6	7.2	1.61	X	1.84	1.66	0.18
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Thorium-232	60/65	1	7	2.36	X	2.59	1.11	1.48
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Uranium-234						0.02208	1.13	0
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Uranium-235						0.0009568	0.06	0
Subsurface Soil (>0.5 ft)	10K520033/VP-5(L)	Uranium-238	0/65			10.6	D	11.6	1.18	10.42
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Actinium-227						0.05481	0.21	0
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Lead-210						0.10962	0	0.10962
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Protactinium-231						0.06264	0.2	0
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Radium-226	12/12	0.7	1.9	1.37	L	1.72	1.05	0.67
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Radium-228						0.0028188	0.98	0
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Thorium-228						0.00783	1.18	0
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Thorium-230	14/15	1.2	12	3.73	L	7.83	1.66	6.17
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Thorium-232	12/12	0.8	3	1.58	L	1.96	1.11	0.85
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Uranium-234						0.09396	1.13	0
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Uranium-235						0.0040716	0.06	0
Surface Soil (<0.5 ft)	10K520033/VP-5(L)	Uranium-238	0/12			8	D	9.36	1.18	8.18
Soil - All Depths	10K520044/VP-4(L)	Actinium-227						0.1491	0.21	0
Soil - All Depths	10K520044/VP-4(L)	Lead-210						0.2982	0	0.2982
Soil - All Depths	10K520044/VP-4(L)	Protactinium-231						0.1704	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K520044/VP-4(L)	Radium-226	91/91	0.5	10	1.77	X	1.97	1.05	0.92
Soil - All Depths	10K520044/VP-4(L)	Radium-228						0.007668	0.98	0
Soil - All Depths	10K520044/VP-4(L)	Thorium-228						0.0213	1.18	0
Soil - All Depths	10K520044/VP-4(L)	Thorium-230	90/91	0.7	460	11.5	X	21.3	1.66	19.64
Soil - All Depths	10K520044/VP-4(L)	Thorium-232	81/91	0.5	4	1.83	X	1.97	1.11	0.86
Soil - All Depths	10K520044/VP-4(L)	Uranium-234						0.2556	1.13	0
Soil - All Depths	10K520044/VP-4(L)	Uranium-235						0.011076	0.06	0
Soil - All Depths	10K520044/VP-4(L)	Uranium-238	0/91			8.7	D	9.38	1.18	8.2
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Actinium-227						0.091	0.21	0
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Lead-210						0.182	0	0.182
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Protactinium-231						0.104	0.2	0
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Radium-226	75/75	0.5	7	1.66	L	1.8	1.05	0.75
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Radium-228						0.00468	0.98	0
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Thorium-228						0.013	1.18	0
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Thorium-230	74/75	0.7	280	6.78	X	13	1.66	11.34
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Thorium-232	70/75	0.5	4	1.9	L	2.1	1.11	0.99
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Uranium-234						0.156	1.13	0
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Uranium-235						0.00676	0.06	0
Subsurface Soil (>0.5 ft)	10K520044/VP-4(L)	Uranium-238	0/75			8.76	D	9.54	1.18	8.36
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Actinium-227						0.5859	0.21	0.3759
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Lead-210						1.1718	0	1.1718
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Protactinium-231						0.6696	0.2	0.4696
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Radium-226	16/16	1.2	10	2.26	X	3.18	1.05	2.13
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Radium-228						0.030132	0.98	0
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Thorium-228						0.0837	1.18	0
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Thorium-230	16/16	1.2	460	33.9	X	83.7	1.66	82.04
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Thorium-232	11/16	1	3	1.52	X	1.81	1.11	0.7
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Uranium-234						1.0044	1.13	0
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Uranium-235						0.043524	0.06	0
Surface Soil (<0.5 ft)	10K520044/VP-4(L)	Uranium-238	0/16			8.44	D	9.69	1.18	8.51
Soil - All Depths	10K520066/VP-37	Actinium-227						0.1715	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K520066/VP-37	Lead-210						0.343	0	0.343
Soil - All Depths	10K520066/VP-37	Protactinium-231						0.196	0.2	0
Soil - All Depths	10K520066/VP-37	Radium-226	69/69	0.6	2.7	1.55	N	1.64	1.05	0.59
Soil - All Depths	10K520066/VP-37	Radium-228						0.00882	0.98	0
Soil - All Depths	10K520066/VP-37	Thorium-228						0.0245	1.18	0
Soil - All Depths	10K520066/VP-37	Thorium-230	91/92	0.6	600	13.1	X	24.5	1.66	22.84
Soil - All Depths	10K520066/VP-37	Thorium-232	63/69	0.6	4	1.95	L	2.15	1.11	1.04
Soil - All Depths	10K520066/VP-37	Uranium-234						0.294	1.13	0
Soil - All Depths	10K520066/VP-37	Uranium-235						0.01274	0.06	0
Soil - All Depths	10K520066/VP-37	Uranium-238	0/68			8.41	D	9.06	1.18	7.88
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Actinium-227						0.04417	0.21	0
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Lead-210						0.08834	0	0.08834
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Protactinium-231						0.05048	0.2	0
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Radium-226	63/63	0.6	2.7	1.56	N	1.66	1.05	0.61
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Radium-228						0.0022716	0.98	0
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Thorium-228						0.00631	1.18	0
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Thorium-230	76/77	0.6	74	4.11	X	6.31	1.66	4.65
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Thorium-232	59/63	0.6	4	1.96	L	2.17	1.11	1.06
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Uranium-234						0.07572	1.13	0
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Uranium-235						0.0032812	0.06	0
Subsurface Soil (>0.5 ft)	10K520066/VP-37	Uranium-238	0/62			8.34	D	9.03	1.18	7.85
Surface Soil (<0.5 ft)	10K520066/VP-37	Actinium-227						0.917	0.21	0.707
Surface Soil (<0.5 ft)	10K520066/VP-37	Lead-210						1.834	0	1.834
Surface Soil (<0.5 ft)	10K520066/VP-37	Protactinium-231						1.048	0.2	0.848
Surface Soil (<0.5 ft)	10K520066/VP-37	Radium-226	6/6	1.1	2.1	1.47	L	1.94	1.05	0.89
Surface Soil (<0.5 ft)	10K520066/VP-37	Radium-228						0.04716	0.98	0
Surface Soil (<0.5 ft)	10K520066/VP-37	Thorium-228						0.131	1.18	0
Surface Soil (<0.5 ft)	10K520066/VP-37	Thorium-230	15/15	1.2	600	59.1	X	131	1.66	129.34
Surface Soil (<0.5 ft)	10K520066/VP-37	Thorium-232	4/6	1.5	3	1.87	D	2.62	1.11	1.51
Surface Soil (<0.5 ft)	10K520066/VP-37	Uranium-234						1.572	1.13	0.442
Surface Soil (<0.5 ft)	10K520066/VP-37	Uranium-235						0.06812	0.06	0.00812
Surface Soil (<0.5 ft)	10K520066/VP-37	Uranium-238	0/6			9.17	D	11.4	1.18	10.22

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K520165	Actinium-227						0.077	0.21	0
Soil - All Depths	10K520165	Lead-210						0.154	0	0.154
Soil - All Depths	10K520165	Protactinium-231						0.088	0.2	0
Soil - All Depths	10K520165	Radium-226	3/3	2.1	2.5	2.33	D	2.5	1.05	1.45
Soil - All Depths	10K520165	Radium-228						0.00396	0.98	0
Soil - All Depths	10K520165	Thorium-228						0.011	1.18	0
Soil - All Depths	10K520165	Thorium-230	5/5	1.2	11	3.92	L	11	1.66	9.34
Soil - All Depths	10K520165	Thorium-232	3/3	2.5	3.7	2.97	D	3.7	1.11	2.59
Soil - All Depths	10K520165	Uranium-234						0.132	1.13	0
Soil - All Depths	10K520165	Uranium-235						0.00572	0.06	0
Soil - All Depths	10K520165	Uranium-238	3/3	9.9	11.8	10.8	D	11.8	1.18	10.62
Surface Soil (<0.5 ft)	10K520165	Actinium-227						0.077	0.21	0
Surface Soil (<0.5 ft)	10K520165	Lead-210						0.154	0	0.154
Surface Soil (<0.5 ft)	10K520165	Protactinium-231						0.088	0.2	0
Surface Soil (<0.5 ft)	10K520165	Radium-226	3/3	2.1	2.5	2.33	D	2.5	1.05	1.45
Surface Soil (<0.5 ft)	10K520165	Radium-228						0.00396	0.98	0
Surface Soil (<0.5 ft)	10K520165	Thorium-228						0.011	1.18	0
Surface Soil (<0.5 ft)	10K520165	Thorium-230	5/5	1.2	11	3.92	L	11	1.66	9.34
Surface Soil (<0.5 ft)	10K520165	Thorium-232	3/3	2.5	3.7	2.97	D	3.7	1.11	2.59
Surface Soil (<0.5 ft)	10K520165	Uranium-234						0.132	1.13	0
Surface Soil (<0.5 ft)	10K520165	Uranium-235						0.00572	0.06	0
Surface Soil (<0.5 ft)	10K520165	Uranium-238	3/3	9.9	11.8	10.8	D	11.8	1.18	10.62
Soil - All Depths	10K530076	Actinium-227						0.0441	0.21	0
Soil - All Depths	10K530076	Lead-210						0.0882	0	0.0882
Soil - All Depths	10K530076	Protactinium-231						0.0504	0.2	0
Soil - All Depths	10K530076	Radium-226						0.0441	1.05	0
Soil - All Depths	10K530076	Radium-228						0.002268	0.98	0
Soil - All Depths	10K530076	Thorium-228						0.0063	1.18	0
Soil - All Depths	10K530076	Thorium-230	4/4	2.2	6.3	4.13	D	6.3	1.66	4.64
Soil - All Depths	10K530076	Thorium-232						0.0063	1.11	0
Soil - All Depths	10K530076	Uranium-234						0.0756	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K530076	Uranium-235						0.003276	0.06	0
Soil - All Depths	10K530076	Uranium-238						0.0756	1.18	0
Surface Soil (<0.5 ft)	10K530076	Actinium-227						0.0441	0.21	0
Surface Soil (<0.5 ft)	10K530076	Lead-210						0.0882	0	0.0882
Surface Soil (<0.5 ft)	10K530076	Protactinium-231						0.0504	0.2	0
Surface Soil (<0.5 ft)	10K530076	Radium-226						0.0441	1.05	0
Surface Soil (<0.5 ft)	10K530076	Radium-228						0.002268	0.98	0
Surface Soil (<0.5 ft)	10K530076	Thorium-228						0.0063	1.18	0
Surface Soil (<0.5 ft)	10K530076	Thorium-230	4/4	2.2	6.3	4.13	D	6.3	1.66	4.64
Surface Soil (<0.5 ft)	10K530076	Thorium-232						0.0063	1.11	0
Surface Soil (<0.5 ft)	10K530076	Uranium-234						0.0756	1.13	0
Surface Soil (<0.5 ft)	10K530076	Uranium-235						0.003276	0.06	0
Surface Soil (<0.5 ft)	10K530076	Uranium-238						0.0756	1.18	0
Soil - All Depths	10K530087	Actinium-227						0.3899	0.21	0.1799
Soil - All Depths	10K530087	Lead-210						0.7798	0	0.7798
Soil - All Depths	10K530087	Protactinium-231						0.4456	0.2	0.2456
Soil - All Depths	10K530087	Radium-226	50/50	0.7	11	1.85	X	2.2	1.05	1.15
Soil - All Depths	10K530087	Radium-228						0.020052	0.98	0
Soil - All Depths	10K530087	Thorium-228						0.0557	1.18	0
Soil - All Depths	10K530087	Thorium-230	62/62	0.8	750	33.9	X	55.7	1.66	54.04
Soil - All Depths	10K530087	Thorium-232	47/50	0.7	4	1.83	L	2.04	1.11	0.93
Soil - All Depths	10K530087	Uranium-234						0.6684	1.13	0
Soil - All Depths	10K530087	Uranium-235						0.028964	0.06	0
Soil - All Depths	10K530087	Uranium-238	1/50	18	18	9.06	D	9.83	1.18	8.65
Subsurface Soil (>0.5 ft)	10K530087	Actinium-227						0.04144	0.21	0
Subsurface Soil (>0.5 ft)	10K530087	Lead-210						0.08288	0	0.08288
Subsurface Soil (>0.5 ft)	10K530087	Protactinium-231						0.04736	0.2	0
Subsurface Soil (>0.5 ft)	10K530087	Radium-226	32/32	0.7	2.5	1.42	N	1.55	1.05	0.5
Subsurface Soil (>0.5 ft)	10K530087	Radium-228						0.0021312	0.98	0
Subsurface Soil (>0.5 ft)	10K530087	Thorium-228						0.00592	1.18	0
Subsurface Soil (>0.5 ft)	10K530087	Thorium-230	33/33	0.9	44	3.72	X	5.92	1.66	4.26

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K530087	Thorium-232	29/32	1	2.6	1.61	X	1.76	1.11	0.65
Subsurface Soil (>0.5 ft)	10K530087	Uranium-234						0.07104	1.13	0
Subsurface Soil (>0.5 ft)	10K530087	Uranium-235						0.0030784	0.06	0
Subsurface Soil (>0.5 ft)	10K530087	Uranium-238	0/32			8.06	D	8.89	1.18	7.71
Surface Soil (<0.5 ft)	10K530087	Actinium-227						2.506	0.21	2.296
Surface Soil (<0.5 ft)	10K530087	Lead-210						5.012	0	5.012
Surface Soil (<0.5 ft)	10K530087	Protactinium-231						2.864	0.2	2.664
Surface Soil (<0.5 ft)	10K530087	Radium-226	18/18	1	11	2.61	X	3.52	1.05	2.47
Surface Soil (<0.5 ft)	10K530087	Radium-228						0.12888	0.98	0
Surface Soil (<0.5 ft)	10K530087	Thorium-228						0.358	1.18	0
Surface Soil (<0.5 ft)	10K530087	Thorium-230	29/29	0.8	750	68.2	L	358	1.66	356.34
Surface Soil (<0.5 ft)	10K530087	Thorium-232	18/18	0.7	4	2.22	N	2.61	1.11	1.5
Surface Soil (<0.5 ft)	10K530087	Uranium-234						4.296	1.13	3.166
Surface Soil (<0.5 ft)	10K530087	Uranium-235						0.18616	0.06	0.12616
Surface Soil (<0.5 ft)	10K530087	Uranium-238	1/18	18	18	10.8	D	12.2	1.18	11.02
Soil - All Depths	10K530098/VP-1(L)	Actinium-227						0.4844	0.21	0.2744
Soil - All Depths	10K530098/VP-1(L)	Lead-210						0.9688	0	0.9688
Soil - All Depths	10K530098/VP-1(L)	Protactinium-231						0.5536	0.2	0.3536
Soil - All Depths	10K530098/VP-1(L)	Radium-226	24/24	0.68	2.8	1.77	N	1.97	1.05	0.92
Soil - All Depths	10K530098/VP-1(L)	Radium-228						0.024912	0.98	0
Soil - All Depths	10K530098/VP-1(L)	Thorium-228						0.0692	1.18	0
Soil - All Depths	10K530098/VP-1(L)	Thorium-230	102/102	0.7	810	48.6	X	69.2	1.66	67.54
Soil - All Depths	10K530098/VP-1(L)	Thorium-232	20/24	0.47	5	1.64	L	2.08	1.11	0.97
Soil - All Depths	10K530098/VP-1(L)	Uranium-234						0.8304	1.13	0
Soil - All Depths	10K530098/VP-1(L)	Uranium-235						0.035984	0.06	0
Soil - All Depths	10K530098/VP-1(L)	Uranium-238	2/24	4.5	5.8	8.44	D	5.8	1.18	4.62
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Actinium-227						0.04956	0.21	0
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Lead-210						0.09912	0	0.09912
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Protactinium-231						0.05664	0.2	0
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Radium-226	15/15	0.68	2.3	1.51	N	1.71	1.05	0.66
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Radium-228						0.0025488	0.98	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Thorium-228						0.00708	1.18	0
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Thorium-230	65/65	0.7	67	4.9	X	7.08	1.66	5.42
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Thorium-232	14/15	0.7	3	1.54	L	1.95	1.11	0.84
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Uranium-234						0.08496	1.13	0
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Uranium-235						0.0036816	0.06	0
Subsurface Soil (>0.5 ft)	10K530098/VP-1(L)	Uranium-238	2/15	4.5	5.8	7.62	D	5.8	1.18	4.62
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Actinium-227						1.239	0.21	1.029
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Lead-210						2.478	0	2.478
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Protactinium-231						1.416	0.2	1.216
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Radium-226	9/9	1.1	2.8	2.21	N	2.54	1.05	1.49
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Radium-228						0.06372	0.98	0
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Thorium-228						0.177	1.18	0
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Thorium-230	37/37	0.9	810	125	X	177	1.66	175.34
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Thorium-232	6/9	0.47	5	1.81	L	4.19	1.11	3.08
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Uranium-234						2.124	1.13	0.994
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Uranium-235						0.09204	0.06	0.03204
Surface Soil (<0.5 ft)	10K530098/VP-1(L)	Uranium-238	0/9			9.8	D	12.3	1.18	11.12
Soil - All Depths	10K540031/VP-41	Actinium-227						0.01652	0.21	0
Soil - All Depths	10K540031/VP-41	Lead-210						0.03304	0	0.03304
Soil - All Depths	10K540031/VP-41	Protactinium-231						0.01888	0.2	0
Soil - All Depths	10K540031/VP-41	Radium-226						0.01652	1.05	0
Soil - All Depths	10K540031/VP-41	Radium-228						0.0008496	0.98	0
Soil - All Depths	10K540031/VP-41	Thorium-228						0.00236	1.18	0
Soil - All Depths	10K540031/VP-41	Thorium-230	24/24	0.8	5.6	2	L	2.36	1.66	0.7
Soil - All Depths	10K540031/VP-41	Thorium-232						0.00236	1.11	0
Soil - All Depths	10K540031/VP-41	Uranium-234						0.02832	1.13	0
Soil - All Depths	10K540031/VP-41	Uranium-235						0.0012272	0.06	0
Soil - All Depths	10K540031/VP-41	Uranium-238						0.02832	1.18	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Actinium-227						0.01652	0.21	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Lead-210						0.03304	0	0.03304
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Protactinium-231						0.01888	0.2	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Radium-226						0.01652	1.05	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Radium-228						0.0008496	0.98	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Thorium-228						0.00236	1.18	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Thorium-230	24/24	0.8	5.6	2	L	2.36	1.66	0.7
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Thorium-232						0.00236	1.11	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Uranium-234						0.02832	1.13	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Uranium-235						0.0012272	0.06	0
Subsurface Soil (>0.5 ft)	10K540031/VP-41	Uranium-238						0.02832	1.18	0
Soil - All Depths	10K540075/VP-43	Actinium-227						0.01071	0.21	0
Soil - All Depths	10K540075/VP-43	Lead-210						0.02142	0	0.02142
Soil - All Depths	10K540075/VP-43	Protactinium-231						0.01224	0.2	0
Soil - All Depths	10K540075/VP-43	Radium-226						0.01071	1.05	0
Soil - All Depths	10K540075/VP-43	Radium-228						0.0005508	0.98	0
Soil - All Depths	10K540075/VP-43	Thorium-228						0.00153	1.18	0
Soil - All Depths	10K540075/VP-43	Thorium-230	0/2			0.9	D	1.53	1.66	0
Soil - All Depths	10K540075/VP-43	Thorium-232						0.00153	1.11	0
Soil - All Depths	10K540075/VP-43	Uranium-234						0.01836	1.13	0
Soil - All Depths	10K540075/VP-43	Uranium-235						0.0007956	0.06	0
Soil - All Depths	10K540075/VP-43	Uranium-238						0.01836	1.18	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Actinium-227						0.01071	0.21	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Lead-210						0.02142	0	0.02142
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Protactinium-231						0.01224	0.2	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Radium-226						0.01071	1.05	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Radium-228						0.0005508	0.98	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Thorium-228						0.00153	1.18	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Thorium-230	0/2			0.9	D	1.53	1.66	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Thorium-232						0.00153	1.11	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Uranium-234						0.01836	1.13	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Uranium-235						0.0007956	0.06	0
Subsurface Soil (>0.5 ft)	10K540075/VP-43	Uranium-238						0.01836	1.18	0
Soil - All Depths	10K540097/VP-38	Actinium-227						0.03213	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K540097/VP-38	Lead-210						0.06426	0	0.06426
Soil - All Depths	10K540097/VP-38	Protactinium-231						0.03672	0.2	0
Soil - All Depths	10K540097/VP-38	Radium-226	165/166	0.6	5	1.59	L	1.67	1.05	0.62
Soil - All Depths	10K540097/VP-38	Radium-228						0.0016524	0.98	0
Soil - All Depths	10K540097/VP-38	Thorium-228						0.00459	1.18	0
Soil - All Depths	10K540097/VP-38	Thorium-230	233/237	0.5	150	3.33	X	4.59	1.66	2.93
Soil - All Depths	10K540097/VP-38	Thorium-232	143/166	0.9	5	2.06	X	2.17	1.11	1.06
Soil - All Depths	10K540097/VP-38	Uranium-234						0.05508	1.13	0
Soil - All Depths	10K540097/VP-38	Uranium-235						0.0023868	0.06	0
Soil - All Depths	10K540097/VP-38	Uranium-238	0/166			9.59	D	10.1	1.18	8.92
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Actinium-227						0.02478	0.21	0
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Lead-210						0.04956	0	0.04956
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Protactinium-231						0.02832	0.2	0
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Radium-226	135/136	0.6	3	1.52	X	1.6	1.05	0.55
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Radium-228						0.0012744	0.98	0
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Thorium-228						0.00354	1.18	0
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Thorium-230	196/200	0.5	69	2.69	X	3.54	1.66	1.88
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Thorium-232	115/136	1	5	2.08	X	2.21	1.11	1.1
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Uranium-234						0.04248	1.13	0
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Uranium-235						0.0018408	0.06	0
Subsurface Soil (>0.5 ft)	10K540097/VP-38	Uranium-238	0/136			9.58	D	10.2	1.18	9.02
Surface Soil (<0.5 ft)	10K540097/VP-38	Actinium-227						0.0945	0.21	0
Surface Soil (<0.5 ft)	10K540097/VP-38	Lead-210						0.189	0	0.189
Surface Soil (<0.5 ft)	10K540097/VP-38	Protactinium-231						0.108	0.2	0
Surface Soil (<0.5 ft)	10K540097/VP-38	Radium-226	30/30	0.9	5	1.89	L	2.15	1.05	1.1
Surface Soil (<0.5 ft)	10K540097/VP-38	Radium-228						0.00486	0.98	0
Surface Soil (<0.5 ft)	10K540097/VP-38	Thorium-228						0.0135	1.18	0
Surface Soil (<0.5 ft)	10K540097/VP-38	Thorium-230	37/37	1	150	6.79	X	13.5	1.66	11.84
Surface Soil (<0.5 ft)	10K540097/VP-38	Thorium-232	28/30	0.9	3	1.97	X	2.16	1.11	1.05
Surface Soil (<0.5 ft)	10K540097/VP-38	Uranium-234						0.162	1.13	0
Surface Soil (<0.5 ft)	10K540097/VP-38	Uranium-235						0.00702	0.06	0
Surface Soil (<0.5 ft)	10K540097/VP-38	Uranium-238	0/30			9.63	D	10.6	1.18	9.42

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K610178/VP-35	Actinium-227						0.01589	0.21	0
Soil - All Depths	10K610178/VP-35	Lead-210						0.03178	0	0.03178
Soil - All Depths	10K610178/VP-35	Protactinium-231						0.01816	0.2	0
Soil - All Depths	10K610178/VP-35	Radium-226	217/218	0.7	3.2	1.65	L	1.71	1.05	0.66
Soil - All Depths	10K610178/VP-35	Radium-228						0.0008172	0.98	0
Soil - All Depths	10K610178/VP-35	Thorium-228						0.00227	1.18	0
Soil - All Depths	10K610178/VP-35	Thorium-230	229/230	0.8	18	2.1	X	2.27	1.66	0.61
Soil - All Depths	10K610178/VP-35	Thorium-232	209/218	0.8	5	2.04	X	2.12	1.11	1.01
Soil - All Depths	10K610178/VP-35	Uranium-234						0.02724	1.13	0
Soil - All Depths	10K610178/VP-35	Uranium-235						0.0011804	0.06	0
Soil - All Depths	10K610178/VP-35	Uranium-238	1/218	10.6	10.6	9.57	D	9.9	1.18	8.72
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Actinium-227						0.01547	0.21	0
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Lead-210						0.03094	0	0.03094
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Protactinium-231						0.01768	0.2	0
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Radium-226	21/21	0.7	2.7	1.54	L	1.78	1.05	0.73
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Radium-228						0.0007956	0.98	0
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Thorium-228						0.00221	1.18	0
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Thorium-230	31/31	0.8	5.5	1.91	L	2.21	1.66	0.55
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Thorium-232	21/21	0.8	5	2.21	L	2.72	1.11	1.61
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Uranium-234						0.02652	1.13	0
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Uranium-235						0.0011492	0.06	0
Subsurface Soil (>0.5 ft)	10K610178/VP-35	Uranium-238	0/21			10.1	D	11.2	1.18	10.02
Surface Soil (<0.5 ft)	10K610178/VP-35	Actinium-227						0.01624	0.21	0
Surface Soil (<0.5 ft)	10K610178/VP-35	Lead-210						0.03248	0	0.03248
Surface Soil (<0.5 ft)	10K610178/VP-35	Protactinium-231						0.01856	0.2	0
Surface Soil (<0.5 ft)	10K610178/VP-35	Radium-226	196/197	0.7	3.2	1.66	L	1.72	1.05	0.67
Surface Soil (<0.5 ft)	10K610178/VP-35	Radium-228						0.0008352	0.98	0
Surface Soil (<0.5 ft)	10K610178/VP-35	Thorium-228						0.00232	1.18	0
Surface Soil (<0.5 ft)	10K610178/VP-35	Thorium-230	198/199	0.8	18	2.13	X	2.32	1.66	0.66
Surface Soil (<0.5 ft)	10K610178/VP-35	Thorium-232	188/197	0.8	5	2.02	X	2.1	1.11	0.99
Surface Soil (<0.5 ft)	10K610178/VP-35	Uranium-234						0.02784	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K610178/VP-35	Uranium-235						0.0012064	0.06	0
Surface Soil (<0.5 ft)	10K610178/VP-35	Uranium-238	1/197	10.6	10.6	9.51	D	9.85	1.18	8.67
Soil - All Depths	10K610189/VP-36	Actinium-227						0.01617	0.21	0
Soil - All Depths	10K610189/VP-36	Lead-210						0.03234	0	0.03234
Soil - All Depths	10K610189/VP-36	Protactinium-231						0.01848	0.2	0
Soil - All Depths	10K610189/VP-36	Radium-226						0.01617	1.05	0
Soil - All Depths	10K610189/VP-36	Radium-228						0.0008316	0.98	0
Soil - All Depths	10K610189/VP-36	Thorium-228						0.00231	1.18	0
Soil - All Depths	10K610189/VP-36	Thorium-230	11/11	1.5	2.7	2.03	L	2.31	1.66	0.65
Soil - All Depths	10K610189/VP-36	Thorium-232						0.00231	1.11	0
Soil - All Depths	10K610189/VP-36	Uranium-234						0.02772	1.13	0
Soil - All Depths	10K610189/VP-36	Uranium-235						0.0012012	0.06	0
Soil - All Depths	10K610189/VP-36	Uranium-238						0.02772	1.18	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Actinium-227						0.01617	0.21	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Lead-210						0.03234	0	0.03234
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Protactinium-231						0.01848	0.2	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Radium-226						0.01617	1.05	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Radium-228						0.0008316	0.98	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Thorium-228						0.00231	1.18	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Thorium-230	11/11	1.5	2.7	2.03	L	2.31	1.66	0.65
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Thorium-232						0.00231	1.11	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Uranium-234						0.02772	1.13	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Uranium-235						0.0012012	0.06	0
Subsurface Soil (>0.5 ft)	10K610189/VP-36	Uranium-238						0.02772	1.18	0
Soil - All Depths	10K620412	Actinium-227						0.0462	0.21	0
Soil - All Depths	10K620412	Lead-210						0.0924	0	0.0924
Soil - All Depths	10K620412	Protactinium-231						0.0528	0.2	0
Soil - All Depths	10K620412	Radium-226	3/3	1.1	1.7	1.43	D	1.7	1.05	0.65
Soil - All Depths	10K620412	Radium-228						0.002376	0.98	0
Soil - All Depths	10K620412	Thorium-228						0.0066	1.18	0
Soil - All Depths	10K620412	Thorium-230	2/3	2.3	6.6	3.1	D	6.6	1.66	4.94

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10K620412	Thorium-232	3/3	1.1	1.3	1.17	D	1.3	1.11	0.19
Soil - All Depths	10K620412	Uranium-234						0.0792	1.13	0
Soil - All Depths	10K620412	Uranium-235						0.003432	0.06	0
Soil - All Depths	10K620412	Uranium-238	1/3	2.5	2.5	2.8	D	2.5	1.18	1.32
Surface Soil (<0.5 ft)	10K620412	Actinium-227						0.0462	0.21	0
Surface Soil (<0.5 ft)	10K620412	Lead-210						0.0924	0	0.0924
Surface Soil (<0.5 ft)	10K620412	Protactinium-231						0.0528	0.2	0
Surface Soil (<0.5 ft)	10K620412	Radium-226	3/3	1.1	1.7	1.43	D	1.7	1.05	0.65
Surface Soil (<0.5 ft)	10K620412	Radium-228						0.002376	0.98	0
Surface Soil (<0.5 ft)	10K620412	Thorium-228						0.0066	1.18	0
Surface Soil (<0.5 ft)	10K620412	Thorium-230	2/3	2.3	6.6	3.1	D	6.6	1.66	4.94
Surface Soil (<0.5 ft)	10K620412	Thorium-232	3/3	1.1	1.3	1.17	D	1.3	1.11	0.19
Surface Soil (<0.5 ft)	10K620412	Uranium-234						0.0792	1.13	0
Surface Soil (<0.5 ft)	10K620412	Uranium-235						0.003432	0.06	0
Surface Soil (<0.5 ft)	10K620412	Uranium-238	1/3	2.5	2.5	2.8	D	2.5	1.18	1.32
Soil - All Depths	10K620452	Actinium-227						0.0056	0.21	0
Soil - All Depths	10K620452	Lead-210						0.0112	0	0.0112
Soil - All Depths	10K620452	Protactinium-231						0.0064	0.2	0
Soil - All Depths	10K620452	Radium-226	1/1	1	1	1	D	1	1.05	0
Soil - All Depths	10K620452	Radium-228						0.000288	0.98	0
Soil - All Depths	10K620452	Thorium-228						0.0008	1.18	0
Soil - All Depths	10K620452	Thorium-230	1/1	0.8	0.8	0.8	D	0.8	1.66	0
Soil - All Depths	10K620452	Thorium-232	1/1	0.9	0.9	0.9	D	0.9	1.11	0
Soil - All Depths	10K620452	Uranium-234						0.0096	1.13	0
Soil - All Depths	10K620452	Uranium-235						0.000416	0.06	0
Soil - All Depths	10K620452	Uranium-238						0.0096	1.18	0
Soil - All Depths	10K620452	Uranium-238	0/1			3.3	D		1.18	0
Surface Soil (<0.5 ft)	10K620452	Actinium-227						0.0056	0.21	0
Surface Soil (<0.5 ft)	10K620452	Lead-210						0.0112	0	0.0112
Surface Soil (<0.5 ft)	10K620452	Protactinium-231						0.0064	0.2	0
Surface Soil (<0.5 ft)	10K620452	Radium-226	1/1	1	1	1	D	1	1.05	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K620452	Radium-228						0.000288	0.98	0
Surface Soil (<0.5 ft)	10K620452	Thorium-228						0.0008	1.18	0
Surface Soil (<0.5 ft)	10K620452	Thorium-230	1/1	0.8	0.8	0.8	D	0.8	1.66	0
Surface Soil (<0.5 ft)	10K620452	Thorium-232	1/1	0.9	0.9	0.9	D	0.9	1.11	0
Surface Soil (<0.5 ft)	10K620452	Uranium-234						0.0096	1.13	0
Surface Soil (<0.5 ft)	10K620452	Uranium-235						0.000416	0.06	0
Surface Soil (<0.5 ft)	10K620452	Uranium-238						0.0096	1.18	0
Surface Soil (<0.5 ft)	10K620452	Uranium-238	0/1			3.3	D		1.18	0
Soil - All Depths	10K630363/VP-39	Actinium-227						0.03108	0.21	0
Soil - All Depths	10K630363/VP-39	Lead-210						0.06216	0	0.06216
Soil - All Depths	10K630363/VP-39	Protactinium-231						0.03552	0.2	0
Soil - All Depths	10K630363/VP-39	Radium-226	99/100	0.6	5	1.43	L	1.53	1.05	0.48
Soil - All Depths	10K630363/VP-39	Radium-228						0.0015984	0.98	0
Soil - All Depths	10K630363/VP-39	Thorium-228						0.00444	1.18	0
Soil - All Depths	10K630363/VP-39	Thorium-230	127/130	0.8	52	3.32	X	4.44	1.66	2.78
Soil - All Depths	10K630363/VP-39	Thorium-232	93/100	0.8	5	1.87	X	2.01	1.11	0.9
Soil - All Depths	10K630363/VP-39	Uranium-234						0.05328	1.13	0
Soil - All Depths	10K630363/VP-39	Uranium-235						0.0023088	0.06	0
Soil - All Depths	10K630363/VP-39	Uranium-238	0/101			8.79	D	9.55	1.18	8.37
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Actinium-227						0.0175	0.21	0
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Lead-210						0.035	0	0.035
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Protactinium-231						0.02	0.2	0
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Radium-226	77/78	0.6	5	1.5	L	1.63	1.05	0.58
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Radium-228						0.0009	0.98	0
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Thorium-228						0.0025	1.18	0
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Thorium-230	98/101	0.8	14	2.12	X	2.5	1.66	0.84
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Thorium-232	72/78	0.9	5	1.97	X	2.14	1.11	1.03
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Uranium-234						0.03	1.13	0
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Uranium-235						0.0013	0.06	0
Subsurface Soil (>0.5 ft)	10K630363/VP-39	Uranium-238	0/78			9.37	D	10.3	1.18	9.12
Surface Soil (<0.5 ft)	10K630363/VP-39	Actinium-227						0.0861	0.21	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10K630363/VP-39	Lead-210						0.1722	0	0.1722
Surface Soil (<0.5 ft)	10K630363/VP-39	Protactinium-231						0.0984	0.2	0
Surface Soil (<0.5 ft)	10K630363/VP-39	Radium-226	22/22	0.6	1.8	1.16	L	1.33	1.05	0.28
Surface Soil (<0.5 ft)	10K630363/VP-39	Radium-228						0.004428	0.98	0
Surface Soil (<0.5 ft)	10K630363/VP-39	Thorium-228						0.0123	1.18	0
Surface Soil (<0.5 ft)	10K630363/VP-39	Thorium-230	29/29	0.9	52	7.48	X	12.3	1.66	10.64
Surface Soil (<0.5 ft)	10K630363/VP-39	Thorium-232	21/22	0.8	2.8	1.49	L	1.77	1.11	0.66
Surface Soil (<0.5 ft)	10K630363/VP-39	Uranium-234						0.1476	1.13	0
Surface Soil (<0.5 ft)	10K630363/VP-39	Uranium-235						0.006396	0.06	0
Surface Soil (<0.5 ft)	10K630363/VP-39	Uranium-238	0/23			6.83	D	7.89	1.18	6.71
Soil - All Depths	10L220893/VP-1	Actinium-227						0.0126	0.21	0
Soil - All Depths	10L220893/VP-1	Lead-210						0.0252	0	0.0252
Soil - All Depths	10L220893/VP-1	Protactinium-231						0.0144	0.2	0
Soil - All Depths	10L220893/VP-1	Radium-226						0.0126	1.05	0
Soil - All Depths	10L220893/VP-1	Radium-228						0.000648	0.98	0
Soil - All Depths	10L220893/VP-1	Thorium-228						0.0018	1.18	0
Soil - All Depths	10L220893/VP-1	Thorium-230	3/3	0.8	1.8	1.23	D	1.8	1.66	0.14
Soil - All Depths	10L220893/VP-1	Thorium-232						0.0018	1.11	0
Soil - All Depths	10L220893/VP-1	Uranium-234						0.0216	1.13	0
Soil - All Depths	10L220893/VP-1	Uranium-235						0.000936	0.06	0
Soil - All Depths	10L220893/VP-1	Uranium-238						0.0216	1.18	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Actinium-227						0.0126	0.21	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Lead-210						0.0252	0	0.0252
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Protactinium-231						0.0144	0.2	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Radium-226						0.0126	1.05	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Radium-228						0.000648	0.98	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Thorium-228						0.0018	1.18	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Thorium-230	3/3	0.8	1.8	1.23	D	1.8	1.66	0.14
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Thorium-232						0.0018	1.11	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Uranium-234						0.0216	1.13	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Uranium-235						0.000936	0.06	0
Subsurface Soil (>0.5 ft)	10L220893/VP-1	Uranium-238						0.0216	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10L240093/VP-2	Actinium-227						0.01428	0.21	0
Soil - All Depths	10L240093/VP-2	Lead-210						0.02856	0	0.02856
Soil - All Depths	10L240093/VP-2	Protactinium-231						0.01632	0.2	0
Soil - All Depths	10L240093/VP-2	Radium-226						0.01428	1.05	0
Soil - All Depths	10L240093/VP-2	Radium-228						0.0007344	0.98	0
Soil - All Depths	10L240093/VP-2	Thorium-228						0.00204	1.18	0
Soil - All Depths	10L240093/VP-2	Thorium-230	15/17	0.9	3.5	1.58	L	2.04	1.66	0.38
Soil - All Depths	10L240093/VP-2	Thorium-232						0.00204	1.11	0
Soil - All Depths	10L240093/VP-2	Uranium-234						0.02448	1.13	0
Soil - All Depths	10L240093/VP-2	Uranium-235						0.0010608	0.06	0
Soil - All Depths	10L240093/VP-2	Uranium-238						0.02448	1.18	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Actinium-227						0.01428	0.21	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Lead-210						0.02856	0	0.02856
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Protactinium-231						0.01632	0.2	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Radium-226						0.01428	1.05	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Radium-228						0.0007344	0.98	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Thorium-228						0.00204	1.18	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Thorium-230	15/17	0.9	3.5	1.58	L	2.04	1.66	0.38
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Thorium-232						0.00204	1.11	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Uranium-234						0.02448	1.13	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Uranium-235						0.0010608	0.06	0
Subsurface Soil (>0.5 ft)	10L240093/VP-2	Uranium-238						0.02448	1.18	0
Soil - All Depths	10L310011/VP-13	Actinium-227						0.364	0.21	0.154
Soil - All Depths	10L310011/VP-13	Lead-210						0.728	0	0.728
Soil - All Depths	10L310011/VP-13	Protactinium-231						0.416	0.2	0.216
Soil - All Depths	10L310011/VP-13	Radium-226	4/4	1.1	2.5	1.63	D	2.41	1.05	1.36
Soil - All Depths	10L310011/VP-13	Radium-228						0.01872	0.98	0
Soil - All Depths	10L310011/VP-13	Thorium-228						0.052	1.18	0
Soil - All Depths	10L310011/VP-13	Thorium-230	35/36	1	370	28	X	52	1.66	50.34
Soil - All Depths	10L310011/VP-13	Thorium-232	3/4	1.3	2.4	1.6	D	2.31	1.11	1.2
Soil - All Depths	10L310011/VP-13	Uranium-234						0.624	1.13	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10L310011/VP-13	Uranium-235						0.02704	0.06	0
Soil - All Depths	10L310011/VP-13	Uranium-238	0/4			10	D	11	1.18	9.82
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Actinium-227						0.3703	0.21	0.1603
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Lead-210						0.7406	0	0.7406
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Protactinium-231						0.4232	0.2	0.2232
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Radium-226	3/3	1.1	2.5	1.57	D	2.5	1.05	1.45
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Radium-228						0.019044	0.98	0
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Thorium-228						0.0529	1.18	0
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Thorium-230	34/35	1	370	28.2	X	52.9	1.66	51.24
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Thorium-232	2/3	1.7	2.4	1.7	D	2.4	1.11	1.29
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Uranium-234						0.6348	1.13	0
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Uranium-235						0.027508	0.06	0
Subsurface Soil (>0.5 ft)	10L310011/VP-13	Uranium-238	0/3			9.67	D	10.6	1.18	9.42
Surface Soil (<0.5 ft)	10L310011/VP-13	Actinium-227						0.147	0.21	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Lead-210						0.294	0	0.294
Surface Soil (<0.5 ft)	10L310011/VP-13	Protactinium-231						0.168	0.2	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Radium-226	1/1	1.8	1.8	1.8	D	1.8	1.05	0.75
Surface Soil (<0.5 ft)	10L310011/VP-13	Radium-228						0.00756	0.98	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Thorium-228						0.021	1.18	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Thorium-230	1/1	21	21	21	D	21	1.66	19.34
Surface Soil (<0.5 ft)	10L310011/VP-13	Thorium-232	1/1	1.3	1.3	1.3	D	1.3	1.11	0.19
Surface Soil (<0.5 ft)	10L310011/VP-13	Uranium-234						0.252	1.13	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Uranium-235						0.01092	0.06	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Uranium-238						0.252	1.18	0
Surface Soil (<0.5 ft)	10L310011/VP-13	Uranium-238	0/1			11	D		1.18	0
Soil - All Depths	10L330022/VP-8	Actinium-227						0.0805	0.21	0
Soil - All Depths	10L330022/VP-8	Lead-210						0.161	0	0.161
Soil - All Depths	10L330022/VP-8	Protactinium-231						0.092	0.2	0
Soil - All Depths	10L330022/VP-8	Radium-226						0.0805	1.05	0
Soil - All Depths	10L330022/VP-8	Radium-228						0.00414	0.98	0
Soil - All Depths	10L330022/VP-8	Thorium-228						0.0115	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10L330022/VP-8	Thorium-230	4/4	1.2	13	4.98	D	11.5	1.66	9.84
Soil - All Depths	10L330022/VP-8	Thorium-232						0.0115	1.11	0
Soil - All Depths	10L330022/VP-8	Uranium-234						0.138	1.13	0
Soil - All Depths	10L330022/VP-8	Uranium-235						0.00598	0.06	0
Soil - All Depths	10L330022/VP-8	Uranium-238						0.138	1.18	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Actinium-227						0.0805	0.21	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Lead-210						0.161	0	0.161
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Protactinium-231						0.092	0.2	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Radium-226						0.0805	1.05	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Radium-228						0.00414	0.98	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Thorium-228						0.0115	1.18	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Thorium-230	4/4	1.2	13	4.98	D	11.5	1.66	9.84
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Thorium-232						0.0115	1.11	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Uranium-234						0.138	1.13	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Uranium-235						0.00598	0.06	0
Subsurface Soil (>0.5 ft)	10L330022/VP-8	Uranium-238						0.138	1.18	0
Soil - All Depths	10L330031/VP-7	Actinium-227						0.0798	0.21	0
Soil - All Depths	10L330031/VP-7	Lead-210						0.1596	0	0.1596
Soil - All Depths	10L330031/VP-7	Protactinium-231						0.0912	0.2	0
Soil - All Depths	10L330031/VP-7	Radium-226						0.0798	1.05	0
Soil - All Depths	10L330031/VP-7	Radium-228						0.004104	0.98	0
Soil - All Depths	10L330031/VP-7	Thorium-228						0.0114	1.18	0
Soil - All Depths	10L330031/VP-7	Thorium-230	14/18	1.2	32	5.18	L	11.4	1.66	9.74
Soil - All Depths	10L330031/VP-7	Thorium-232						0.0114	1.11	0
Soil - All Depths	10L330031/VP-7	Uranium-234						0.1368	1.13	0
Soil - All Depths	10L330031/VP-7	Uranium-235						0.005928	0.06	0
Soil - All Depths	10L330031/VP-7	Uranium-238						0.1368	1.18	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Actinium-227						0.0798	0.21	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Lead-210						0.1596	0	0.1596
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Protactinium-231						0.0912	0.2	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Radium-226						0.0798	1.05	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Radium-228						0.004104	0.98	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Thorium-228						0.0114	1.18	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Thorium-230	14/18	1.2	32	5.18	L	11.4	1.66	9.74
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Thorium-232						0.0114	1.11	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Uranium-234						0.1368	1.13	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Uranium-235						0.005928	0.06	0
Subsurface Soil (>0.5 ft)	10L330031/VP-7	Uranium-238						0.1368	1.18	0
Soil - All Depths	10L330040/VP-6	Actinium-227						0.01785	0.21	0
Soil - All Depths	10L330040/VP-6	Lead-210						0.0357	0	0.0357
Soil - All Depths	10L330040/VP-6	Protactinium-231						0.0204	0.2	0
Soil - All Depths	10L330040/VP-6	Radium-226						0.01785	1.05	0
Soil - All Depths	10L330040/VP-6	Radium-228						0.000918	0.98	0
Soil - All Depths	10L330040/VP-6	Thorium-228						0.00255	1.18	0
Soil - All Depths	10L330040/VP-6	Thorium-230	4/4	1.1	2.8	1.6	D	2.55	1.66	0.89
Soil - All Depths	10L330040/VP-6	Thorium-232						0.00255	1.11	0
Soil - All Depths	10L330040/VP-6	Uranium-234						0.0306	1.13	0
Soil - All Depths	10L330040/VP-6	Uranium-235						0.001326	0.06	0
Soil - All Depths	10L330040/VP-6	Uranium-238						0.0306	1.18	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Actinium-227						0.01785	0.21	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Lead-210						0.0357	0	0.0357
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Protactinium-231						0.0204	0.2	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Radium-226						0.01785	1.05	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Radium-228						0.000918	0.98	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Thorium-228						0.00255	1.18	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Thorium-230	4/4	1.1	2.8	1.6	D	2.55	1.66	0.89
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Thorium-232						0.00255	1.11	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Uranium-234						0.0306	1.13	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Uranium-235						0.001326	0.06	0
Subsurface Soil (>0.5 ft)	10L330040/VP-6	Uranium-238						0.0306	1.18	0
Soil - All Depths	10L330073/VP-9	Actinium-227						0.084	0.21	0
Soil - All Depths	10L330073/VP-9	Lead-210						0.168	0	0.168

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	10L330073/VP-9	Protactinium-231						0.096	0.2	0
Soil - All Depths	10L330073/VP-9	Radium-226						0.084	1.05	0
Soil - All Depths	10L330073/VP-9	Radium-228						0.00432	0.98	0
Soil - All Depths	10L330073/VP-9	Thorium-228						0.012	1.18	0
Soil - All Depths	10L330073/VP-9	Thorium-230	7/8	1	12	4.49	L	12	1.66	10.34
Soil - All Depths	10L330073/VP-9	Thorium-232						0.012	1.11	0
Soil - All Depths	10L330073/VP-9	Uranium-234						0.144	1.13	0
Soil - All Depths	10L330073/VP-9	Uranium-235						0.00624	0.06	0
Soil - All Depths	10L330073/VP-9	Uranium-238						0.144	1.18	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Actinium-227						0.084	0.21	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Lead-210						0.168	0	0.168
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Protactinium-231						0.096	0.2	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Radium-226						0.084	1.05	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Radium-228						0.00432	0.98	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Thorium-228						0.012	1.18	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Thorium-230	7/8	1	12	4.49	L	12	1.66	10.34
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Thorium-232						0.012	1.11	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Uranium-234						0.144	1.13	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Uranium-235						0.00624	0.06	0
Subsurface Soil (>0.5 ft)	10L330073/VP-9	Uranium-238						0.144	1.18	0
Soil - All Depths	10L330114/VP-4,5	Actinium-227						0.01743	0.21	0
Soil - All Depths	10L330114/VP-4,5	Lead-210						0.03486	0	0.03486
Soil - All Depths	10L330114/VP-4,5	Protactinium-231						0.01992	0.2	0
Soil - All Depths	10L330114/VP-4,5	Radium-226						0.01743	1.05	0
Soil - All Depths	10L330114/VP-4,5	Radium-228						0.0008964	0.98	0
Soil - All Depths	10L330114/VP-4,5	Thorium-228						0.00249	1.18	0
Soil - All Depths	10L330114/VP-4,5	Thorium-230	8/8	1.1	3	1.79	L	2.49	1.66	0.83
Soil - All Depths	10L330114/VP-4,5	Thorium-232						0.00249	1.11	0
Soil - All Depths	10L330114/VP-4,5	Uranium-234						0.02988	1.13	0
Soil - All Depths	10L330114/VP-4,5	Uranium-235						0.0012948	0.06	0
Soil - All Depths	10L330114/VP-4,5	Uranium-238						0.02988	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Actinium-227						0.01743	0.21	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Lead-210						0.03486	0	0.03486
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Protactinium-231						0.01992	0.2	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Radium-226						0.01743	1.05	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Radium-228						0.0008964	0.98	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Thorium-228						0.00249	1.18	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Thorium-230	8/8	1.1	3	1.79	L	2.49	1.66	0.83
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Thorium-232						0.00249	1.11	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Uranium-234						0.02988	1.13	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Uranium-235						0.0012948	0.06	0
Subsurface Soil (>0.5 ft)	10L330114/VP-4,5	Uranium-238						0.02988	1.18	0
Soil - All Depths	10L330123/VP-3	Actinium-227						0.0273	0.21	0
Soil - All Depths	10L330123/VP-3	Lead-210						0.0546	0	0.0546
Soil - All Depths	10L330123/VP-3	Protactinium-231						0.0312	0.2	0
Soil - All Depths	10L330123/VP-3	Radium-226						0.0273	1.05	0
Soil - All Depths	10L330123/VP-3	Radium-228						0.001404	0.98	0
Soil - All Depths	10L330123/VP-3	Thorium-228						0.0039	1.18	0
Soil - All Depths	10L330123/VP-3	Thorium-230	5/7	1.2	3.9	1.7	L	3.9	1.66	2.24
Soil - All Depths	10L330123/VP-3	Thorium-232						0.0039	1.11	0
Soil - All Depths	10L330123/VP-3	Uranium-234						0.0468	1.13	0
Soil - All Depths	10L330123/VP-3	Uranium-235						0.002028	0.06	0
Soil - All Depths	10L330123/VP-3	Uranium-238						0.0468	1.18	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Actinium-227						0.0273	0.21	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Lead-210						0.0546	0	0.0546
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Protactinium-231						0.0312	0.2	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Radium-226						0.0273	1.05	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Radium-228						0.001404	0.98	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Thorium-228						0.0039	1.18	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Thorium-230	5/7	1.2	3.9	1.7	L	3.9	1.66	2.24
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Thorium-232						0.0039	1.11	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Uranium-234						0.0468	1.13	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Uranium-235						0.002028	0.06	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	10L330123/VP-3	Uranium-238						0.0468	1.18	0
Soil - All Depths	10L340041/VP-40A	Actinium-227	0/2			0.14	D	0.329	0.209	0.12
Soil - All Depths	10L340041/VP-40A	Lead-210						2.534	0	2.534
Soil - All Depths	10L340041/VP-40A	Protactinium-231	0/2			-1.49	D	0	0.195	0
Soil - All Depths	10L340041/VP-40A	Radium-226	590/603	0.49	1100	4.61	X	7.66	1.05	6.61
Soil - All Depths	10L340041/VP-40A	Radium-228	2/2	0.83	0.89	0.86	D	0.89	0.977	0
Soil - All Depths	10L340041/VP-40A	Thorium-228	2/2	0.83	0.89	0.86	D	0.89	1.18	0
Soil - All Depths	10L340041/VP-40A	Thorium-230	523/526	0.03	26000	98.1	X	181	1.66	179.34
Soil - All Depths	10L340041/VP-40A	Thorium-232	533/602	0.6	7	1.88	X	1.94	1.11	0.83
Soil - All Depths	10L340041/VP-40A	Uranium-234						2.172	1.13	1.042
Soil - All Depths	10L340041/VP-40A	Uranium-235	0/2			0.095	D	0.19	0.0618	0.1282
Soil - All Depths	10L340041/VP-40A	Uranium-238	20/603	2	390	9.47	D	10.6	1.18	9.42
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Actinium-227						0.1617	0.21	0
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Lead-210						0.3234	0	0.3234
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Protactinium-231						0.1848	0.2	0
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Radium-226	334/340	0.6	170	2.35	X	3.18	1.05	2.13
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Radium-228						0.008316	0.98	0
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Thorium-228						0.0231	1.18	0
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Thorium-230	252/253	0.03	1400	13.8	X	23.1	1.66	21.44
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Thorium-232	312/340	0.6	7	1.82	X	1.9	1.11	0.79
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Uranium-234						0.2772	1.13	0
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Uranium-235						0.012012	0.06	0
Subsurface Soil (>0.5 ft)	10L340041/VP-40A	Uranium-238	6/340	2	150	8.51	D	9.28	1.18	8.1
Surface Soil (<0.5 ft)	10L340041/VP-40A	Actinium-227	0/2			0.14	D	0.329	0.209	0.12
Surface Soil (<0.5 ft)	10L340041/VP-40A	Lead-210						4.69	0	4.69
Surface Soil (<0.5 ft)	10L340041/VP-40A	Protactinium-231	0/2			-1.49	D	0	0.195	0
Surface Soil (<0.5 ft)	10L340041/VP-40A	Radium-226	256/263	0.49	1100	7.52	X	14.4	1.05	13.35
Surface Soil (<0.5 ft)	10L340041/VP-40A	Radium-228	2/2	0.83	0.89	0.86	D	0.89	0.977	0
Surface Soil (<0.5 ft)	10L340041/VP-40A	Thorium-228	2/2	0.83	0.89	0.86	D	0.89	1.18	0
Surface Soil (<0.5 ft)	10L340041/VP-40A	Thorium-230	271/273	0.8	26000	176	X	335	1.66	333.34
Surface Soil (<0.5 ft)	10L340041/VP-40A	Thorium-232	221/262	0.7	7	1.96	X	2.06	1.11	0.95

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10L340041/VP-40A	Uranium-234						4.02	1.13	2.89
Surface Soil (<0.5 ft)	10L340041/VP-40A	Uranium-235	0/2			0.095	D	0.19	0.0618	0.1282
Surface Soil (<0.5 ft)	10L340041/VP-40A	Uranium-238	14/263	3.7	390	10.7	D	13.1	1.18	11.92
Soil - All Depths	10L340142/VP-12	Actinium-227						0.2191	0.21	0.0091
Soil - All Depths	10L340142/VP-12	Lead-210						0.4382	0	0.4382
Soil - All Depths	10L340142/VP-12	Protactinium-231						0.2504	0.2	0.0504
Soil - All Depths	10L340142/VP-12	Radium-226	37/37	0.6	5	1.69	L	1.97	1.05	0.92
Soil - All Depths	10L340142/VP-12	Radium-228						0.011268	0.98	0
Soil - All Depths	10L340142/VP-12	Thorium-228						0.0313	1.18	0
Soil - All Depths	10L340142/VP-12	Thorium-230	39/40	0.8	280	17.8	X	31.3	1.66	29.64
Soil - All Depths	10L340142/VP-12	Thorium-232	29/37	0.8	3	1.64	X	1.82	1.11	0.71
Soil - All Depths	10L340142/VP-12	Uranium-234						0.3756	1.13	0
Soil - All Depths	10L340142/VP-12	Uranium-235						0.016276	0.06	0
Soil - All Depths	10L340142/VP-12	Uranium-238	0/37			9.16	D	10.5	1.18	9.32
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Actinium-227						0.05789	0.21	0
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Lead-210						0.11578	0	0.11578
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Protactinium-231						0.06616	0.2	0
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Radium-226	28/28	0.6	2.9	1.59	L	1.89	1.05	0.84
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Radium-228						0.0029772	0.98	0
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Thorium-228						0.00827	1.18	0
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Thorium-230	30/31	0.8	28	5.08	L	8.27	1.66	6.61
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Thorium-232	23/28	0.8	3	1.7	X	1.91	1.11	0.8
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Uranium-234						0.09924	1.13	0
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Uranium-235						0.0043004	0.06	0
Subsurface Soil (>0.5 ft)	10L340142/VP-12	Uranium-238	0/28			10.1	D	11.4	1.18	10.22
Surface Soil (<0.5 ft)	10L340142/VP-12	Actinium-227						1.96	0.21	1.75
Surface Soil (<0.5 ft)	10L340142/VP-12	Lead-210						3.92	0	3.92
Surface Soil (<0.5 ft)	10L340142/VP-12	Protactinium-231						2.24	0.2	2.04
Surface Soil (<0.5 ft)	10L340142/VP-12	Radium-226	9/9	0.8	5	2	L	3.5	1.05	2.45
Surface Soil (<0.5 ft)	10L340142/VP-12	Radium-228						0.1008	0.98	0
Surface Soil (<0.5 ft)	10L340142/VP-12	Thorium-228						0.28	1.18	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	10L340142/VP-12	Thorium-230	9/9	1	280	61.4	L	280	1.66	278.34
Surface Soil (<0.5 ft)	10L340142/VP-12	Thorium-232	6/9	1	3	1.43	N	1.92	1.11	0.81
Surface Soil (<0.5 ft)	10L340142/VP-12	Uranium-234						3.36	1.13	2.23
Surface Soil (<0.5 ft)	10L340142/VP-12	Uranium-235						0.1456	0.06	0.0856
Surface Soil (<0.5 ft)	10L340142/VP-12	Uranium-238	0/9			6.37	D	9.79	1.18	8.61
Soil - All Depths	10L340151/VP-10,11	Actinium-227						0.0385	0.21	0
Soil - All Depths	10L340151/VP-10,11	Lead-210						0.077	0	0.077
Soil - All Depths	10L340151/VP-10,11	Protactinium-231						0.044	0.2	0
Soil - All Depths	10L340151/VP-10,11	Radium-226						0.0385	1.05	0
Soil - All Depths	10L340151/VP-10,11	Radium-228						0.00198	0.98	0
Soil - All Depths	10L340151/VP-10,11	Thorium-228						0.0055	1.18	0
Soil - All Depths	10L340151/VP-10,11	Thorium-230	14/15	1.3	13	3.74	L	5.5	1.66	3.84
Soil - All Depths	10L340151/VP-10,11	Thorium-232						0.0055	1.11	0
Soil - All Depths	10L340151/VP-10,11	Uranium-234						0.066	1.13	0
Soil - All Depths	10L340151/VP-10,11	Uranium-235						0.00286	0.06	0
Soil - All Depths	10L340151/VP-10,11	Uranium-238						0.066	1.18	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Actinium-227						0.0385	0.21	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Lead-210						0.077	0	0.077
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Protactinium-231						0.044	0.2	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Radium-226						0.0385	1.05	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Radium-228						0.00198	0.98	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Thorium-228						0.0055	1.18	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Thorium-230	14/15	1.3	13	3.74	L	5.5	1.66	3.84
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Thorium-232						0.0055	1.11	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Uranium-234						0.066	1.13	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Uranium-235						0.00286	0.06	0
Subsurface Soil (>0.5 ft)	10L340151/VP-10,11	Uranium-238						0.066	1.18	0
Soil - All Depths	11K510035/VP-14	Actinium-227						0.0147	0.21	0
Soil - All Depths	11K510035/VP-14	Lead-210						0.0294	0	0.0294
Soil - All Depths	11K510035/VP-14	Protactinium-231						0.0168	0.2	0
Soil - All Depths	11K510035/VP-14	Radium-226						0.0147	1.05	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	11K510035/VP-14	Radium-228						0.000756	0.98	0
Soil - All Depths	11K510035/VP-14	Thorium-228						0.0021	1.18	0
Soil - All Depths	11K510035/VP-14	Thorium-230	6/9	1.2	2.8	1.47	L	2.1	1.66	0.44
Soil - All Depths	11K510035/VP-14	Thorium-232						0.0021	1.11	0
Soil - All Depths	11K510035/VP-14	Uranium-234						0.0252	1.13	0
Soil - All Depths	11K510035/VP-14	Uranium-235						0.001092	0.06	0
Soil - All Depths	11K510035/VP-14	Uranium-238						0.0252	1.18	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Actinium-227						0.0147	0.21	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Lead-210						0.0294	0	0.0294
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Protactinium-231						0.0168	0.2	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Radium-226						0.0147	1.05	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Radium-228						0.000756	0.98	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Thorium-228						0.0021	1.18	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Thorium-230	6/9	1.2	2.8	1.47	L	2.1	1.66	0.44
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Thorium-232						0.0021	1.11	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Uranium-234						0.0252	1.13	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Uranium-235						0.001092	0.06	0
Subsurface Soil (>0.5 ft)	11K510035/VP-14	Uranium-238						0.0252	1.18	0
Soil - All Depths	11K520056/VP-15	Actinium-227						0.01862	0.21	0
Soil - All Depths	11K520056/VP-15	Lead-210						0.03724	0	0.03724
Soil - All Depths	11K520056/VP-15	Protactinium-231						0.02128	0.2	0
Soil - All Depths	11K520056/VP-15	Radium-226						0.01862	1.05	0
Soil - All Depths	11K520056/VP-15	Radium-228						0.0009576	0.98	0
Soil - All Depths	11K520056/VP-15	Thorium-228						0.00266	1.18	0
Soil - All Depths	11K520056/VP-15	Thorium-230	17/20	1	4.8	2.02	L	2.66	1.66	1
Soil - All Depths	11K520056/VP-15	Thorium-232						0.00266	1.11	0
Soil - All Depths	11K520056/VP-15	Uranium-234						0.03192	1.13	0
Soil - All Depths	11K520056/VP-15	Uranium-235						0.0013832	0.06	0
Soil - All Depths	11K520056/VP-15	Uranium-238						0.03192	1.18	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Actinium-227						0.01862	0.21	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Lead-210						0.03724	0	0.03724

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Protactinium-231						0.02128	0.2	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Radium-226						0.01862	1.05	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Radium-228						0.0009576	0.98	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Thorium-228						0.00266	1.18	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Thorium-230	17/20	1	4.8	2.02	L	2.66	1.66	1
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Thorium-232						0.00266	1.11	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Uranium-234						0.03192	1.13	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Uranium-235						0.0013832	0.06	0
Subsurface Soil (>0.5 ft)	11K520056/VP-15	Uranium-238						0.03192	1.18	0
Soil - All Depths	11K630221	Actinium-227	1/1	0.29	0.29	0.29	D	0.29	0.209	0.081
Soil - All Depths	11K630221	Lead-210						0.1694	0	0.1694
Soil - All Depths	11K630221	Protactinium-231	0/1			0.04	D		0.195	0
Soil - All Depths	11K630221	Protactinium-231						0.0968	0.2	0
Soil - All Depths	11K630221	Radium-226	1/1	0.84	0.84	0.84	D	0.84	1.05	0
Soil - All Depths	11K630221	Radium-228	1/1	0.9	0.9	0.9	D	0.9	0.977	0
Soil - All Depths	11K630221	Thorium-228	1/1	0.91	0.91	0.91	D	0.91	1.18	0
Soil - All Depths	11K630221	Thorium-230	1/1	12.13	12.13	12.1	D	12.1	1.66	10.44
Soil - All Depths	11K630221	Thorium-232	1/1	0.75	0.75	0.75	D	0.75	1.11	0
Soil - All Depths	11K630221	Uranium-234						0.1452	1.13	0
Soil - All Depths	11K630221	Uranium-235						0.006292	0.06	0
Soil - All Depths	11K630221	Uranium-235	0/1			0.38	D		0.0618	0
Soil - All Depths	11K630221	Uranium-238						0.1452	1.18	0
Soil - All Depths	11K630221	Uranium-238	0/1			1.55	D		1.18	0
Surface Soil (<0.5 ft)	11K630221	Actinium-227	1/1	0.29	0.29	0.29	D	0.29	0.209	0.081
Surface Soil (<0.5 ft)	11K630221	Lead-210						0.1694	0	0.1694
Surface Soil (<0.5 ft)	11K630221	Protactinium-231	0/1			0.04	D		0.195	0
Surface Soil (<0.5 ft)	11K630221	Protactinium-231						0.0968	0.2	0
Surface Soil (<0.5 ft)	11K630221	Radium-226	1/1	0.84	0.84	0.84	D	0.84	1.05	0
Surface Soil (<0.5 ft)	11K630221	Radium-228	1/1	0.9	0.9	0.9	D	0.9	0.977	0
Surface Soil (<0.5 ft)	11K630221	Thorium-228	1/1	0.91	0.91	0.91	D	0.91	1.18	0
Surface Soil (<0.5 ft)	11K630221	Thorium-230	1/1	12.13	12.13	12.1	D	12.1	1.66	10.44
Surface Soil (<0.5 ft)	11K630221	Thorium-232	1/1	0.75	0.75	0.75	D	0.75	1.11	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	11K630221	Uranium-234						0.1452	1.13	0
Surface Soil (<0.5 ft)	11K630221	Uranium-235						0.006292	0.06	0
Surface Soil (<0.5 ft)	11K630221	Uranium-235	0/1			0.38	D		0.0618	0
Surface Soil (<0.5 ft)	11K630221	Uranium-238						0.1452	1.18	0
Surface Soil (<0.5 ft)	11K630221	Uranium-238	0/1			1.55	D		1.18	0
Soil - All Depths	11L520011	Actinium-227						0.01813	0.21	0
Soil - All Depths	11L520011	Lead-210						0.03626	0	0.03626
Soil - All Depths	11L520011	Protactinium-231						0.02072	0.2	0
Soil - All Depths	11L520011	Radium-226	2/2	1.3	1.9	1.6	D	1.9	1.05	0.85
Soil - All Depths	11L520011	Radium-228						0.0009324	0.98	0
Soil - All Depths	11L520011	Thorium-228						0.00259	1.18	0
Soil - All Depths	11L520011	Thorium-230	7/8	1.1	3.2	2.06	N	2.59	1.66	0.93
Soil - All Depths	11L520011	Thorium-232	1/2	1.8	1.8	1.4	D	1.8	1.11	0.69
Soil - All Depths	11L520011	Uranium-234						0.03108	1.13	0
Soil - All Depths	11L520011	Uranium-235						0.0013468	0.06	0
Soil - All Depths	11L520011	Uranium-238	0/2			7	D	19.6	1.18	18.42
Subsurface Soil (>0.5 ft)	11L520011	Actinium-227						0.0168	0.21	0
Subsurface Soil (>0.5 ft)	11L520011	Lead-210						0.0336	0	0.0336
Subsurface Soil (>0.5 ft)	11L520011	Protactinium-231						0.0192	0.2	0
Subsurface Soil (>0.5 ft)	11L520011	Radium-226	2/2	1.3	1.9	1.6	D	1.9	1.05	0.85
Subsurface Soil (>0.5 ft)	11L520011	Radium-228						0.000864	0.98	0
Subsurface Soil (>0.5 ft)	11L520011	Thorium-228						0.0024	1.18	0
Subsurface Soil (>0.5 ft)	11L520011	Thorium-230	6/7	1.1	3	1.9	N	2.4	1.66	0.74
Subsurface Soil (>0.5 ft)	11L520011	Thorium-232	1/2	1.8	1.8	1.4	D	1.8	1.11	0.69
Subsurface Soil (>0.5 ft)	11L520011	Uranium-234						0.0288	1.13	0
Subsurface Soil (>0.5 ft)	11L520011	Uranium-235						0.001248	0.06	0
Subsurface Soil (>0.5 ft)	11L520011	Uranium-238	0/2			7	D	19.6	1.18	18.42
Surface Soil (<0.5 ft)	11L520011	Actinium-227						0.0224	0.21	0
Surface Soil (<0.5 ft)	11L520011	Lead-210						0.0448	0	0.0448
Surface Soil (<0.5 ft)	11L520011	Protactinium-231						0.0256	0.2	0
Surface Soil (<0.5 ft)	11L520011	Radium-226						0.0224	1.05	0

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	11L520011	Radium-228						0.001152	0.98	0
Surface Soil (<0.5 ft)	11L520011	Thorium-228						0.0032	1.18	0
Surface Soil (<0.5 ft)	11L520011	Thorium-230	1/1	3.2	3.2	3.2	D	3.2	1.66	1.54
Surface Soil (<0.5 ft)	11L520011	Thorium-232						0.0032	1.11	0
Surface Soil (<0.5 ft)	11L520011	Uranium-234						0.0384	1.13	0
Surface Soil (<0.5 ft)	11L520011	Uranium-235						0.001664	0.06	0
Surface Soil (<0.5 ft)	11L520011	Uranium-238						0.0384	1.18	0
Soil - All Depths	CWC	Actinium-227						1.936	0.21	1.726
Soil - All Depths	CWC	Lead-210						4.224	0	4.224
Soil - All Depths	CWC	Protactinium-231						2.288	0.2	2.088
Soil - All Depths	CWC	Radium-226	9/10	0.9	2.3	1.38	L	1.76	1.05	0.71
Soil - All Depths	CWC	Radium-228						0.1576	0.98	0
Soil - All Depths	CWC	Thorium-228						1.97	1.18	0.79
Soil - All Depths	CWC	Thorium-230	10/10	1	4.1	2.35	N	2.97	1.66	1.31
Soil - All Depths	CWC	Thorium-232	7/10	1.2	3	1.59	L	1.97	1.11	0.86
Soil - All Depths	CWC	Uranium-234						5.69	1.13	4.56
Soil - All Depths	CWC	Uranium-235						0.26174	0.06	0.20174
Soil - All Depths	CWC	Uranium-238	0/10			4.43	D	5.69	1.18	4.51
Surface Soil (<0.5 ft)	CWC	Actinium-227						1.936	0.21	1.726
Surface Soil (<0.5 ft)	CWC	Lead-210						4.224	0	4.224
Surface Soil (<0.5 ft)	CWC	Protactinium-231						2.288	0.2	2.088
Surface Soil (<0.5 ft)	CWC	Radium-226	9/10	0.9	2.3	1.38	L	1.76	1.05	0.71
Surface Soil (<0.5 ft)	CWC	Radium-228						0.1576	0.98	0
Surface Soil (<0.5 ft)	CWC	Thorium-228						1.97	1.18	0.79
Surface Soil (<0.5 ft)	CWC	Thorium-230	10/10	1	4.1	2.35	N	2.97	1.66	1.31
Surface Soil (<0.5 ft)	CWC	Thorium-232	7/10	1.2	3	1.59	L	1.97	1.11	0.86
Surface Soil (<0.5 ft)	CWC	Uranium-234						5.69	1.13	4.56
Surface Soil (<0.5 ft)	CWC	Uranium-235						0.26174	0.06	0.20174
Surface Soil (<0.5 ft)	CWC	Uranium-238	0/10			4.43	D	5.69	1.18	4.51
Soil - All Depths	Futura	Actinium-227						50.6	0.21	50.39
Soil - All Depths	Futura	Lead-210						110.4	0	110.4

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Soil - All Depths	Futura	Protactinium-231						59.8	0.2	59.6
Soil - All Depths	Futura	Radium-226	359/361	0.4	2300	29.7	X	46	1.05	44.95
Soil - All Depths	Futura	Radium-228						0.1864	0.98	0
Soil - All Depths	Futura	Thorium-228						2.33	1.18	1.15
Soil - All Depths	Futura	Thorium-230	172/173	0.5	2000	68.9	X	102	1.66	100.34
Soil - All Depths	Futura	Thorium-232	333/361	0.7	26	2.17	X	2.33	1.11	1.22
Soil - All Depths	Futura	Uranium-234						54.2	1.13	53.07
Soil - All Depths	Futura	Uranium-235						2.4932	0.06	2.4332
Soil - All Depths	Futura	Uranium-238	48/361	2.3	2500	37	D	54.2	1.18	53.02
Soil - All Depths	HISS	Actinium-227	8/21	0.29	5.36	1.06	D	1.68	0.209	1.471
Soil - All Depths	HISS	Lead-210						23.04	0	23.04
Soil - All Depths	HISS	Protactinium-231	0/21			0.962	D	1.67	0.195	1.475
Soil - All Depths	HISS	Radium-226	537/544	0.5	700	6.91	X	9.6	1.05	8.55
Soil - All Depths	HISS	Radium-228	20/21	0.29	1.16	0.915	X	0.986	0.977	0.009
Soil - All Depths	HISS	Thorium-228	20/21	0.29	1.16	0.915	X	0.986	1.18	0
Soil - All Depths	HISS	Thorium-230	215/228	0.8	830	37.9	Z	51.9	1.66	50.24
Soil - All Depths	HISS	Thorium-232	481/544	0.29	5	1.73	X	1.79	1.11	0.68
Soil - All Depths	HISS	Uranium-234						17.1	1.13	15.97
Soil - All Depths	HISS	Uranium-235	0/21			1.01	D	1.59	0.0618	1.5282
Soil - All Depths	HISS	Uranium-238	62/543	4	800	13.9	D	17.1	1.18	15.92
Subsurface Soil (>0.5 ft)	IA-1	Actinium-227	5/14	0.2	0.8	0.473	D	0.785	0.209	0.576
Subsurface Soil (>0.5 ft)	IA-1	Lead-210						360.4	0	360.4
Subsurface Soil (>0.5 ft)	IA-1	Protactinium-231	0/14			0.664	D	1.32	0.195	1.125
Subsurface Soil (>0.5 ft)	IA-1	Radium-226	26/35	0.8	2700	82	X	212	1.05	210.95
Subsurface Soil (>0.5 ft)	IA-1	Radium-228	11/11	0.64	1.01	0.857	N	0.921	0.977	0
Subsurface Soil (>0.5 ft)	IA-1	Thorium-228	11/11	0.7	1.63	1.21	L	1.42	1.18	0.24
Subsurface Soil (>0.5 ft)	IA-1	Thorium-230	20/20	0	120	14.2	Z	27.7	1.66	26.04
Subsurface Soil (>0.5 ft)	IA-1	Thorium-232	22/35	0.45	63	3.51	X	6.48	1.11	5.37
Subsurface Soil (>0.5 ft)	IA-1	Uranium-234						110	1.13	108.87
Subsurface Soil (>0.5 ft)	IA-1	Uranium-235	2/11	0.22	0.25	0.112	D	0.155	0.0618	0.0932
Subsurface Soil (>0.5 ft)	IA-1	Uranium-238	8/35	4.68	1200	52.9	D	110	1.18	108.82

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<5 ft)	IA-1	Actinium-227	0/1			2.6	D		0.209	0
Surface Soil (<5 ft)	IA-1	Actinium-227						538.2	0.21	537.99
Surface Soil (<5 ft)	IA-1	Lead-210						994.5	0	994.5
Surface Soil (<5 ft)	IA-1	Protactinium-231	0/1			5.2	D		0.195	0
Surface Soil (<5 ft)	IA-1	Protactinium-231						585	0.2	584.8
Surface Soil (<5 ft)	IA-1	Radium-226	7/13	1	2700	216	X	585	1.05	583.95
Surface Soil (<5 ft)	IA-1	Radium-228						4.34	0.98	3.36
Surface Soil (<5 ft)	IA-1	Thorium-228						13.175	1.18	11.995
Surface Soil (<5 ft)	IA-1	Thorium-230	4/4	1.8	110	33.7	D	94.3	1.66	92.64
Surface Soil (<5 ft)	IA-1	Thorium-232	6/13	1.1	63	7.14	D	15.5	1.11	14.39
Surface Soil (<5 ft)	IA-1	Uranium-234						287	1.13	285.87
Surface Soil (<5 ft)	IA-1	Uranium-235						13.202	0.06	13.142
Surface Soil (<5 ft)	IA-1	Uranium-238	3/13	40	1200	128	D	287	1.18	285.82
Subsurface Soil (>0.5 ft)	IA-10	Actinium-227						4.0112	0.21	3.8012
Subsurface Soil (>0.5 ft)	IA-10	Lead-210						7.412	0	7.412
Subsurface Soil (>0.5 ft)	IA-10	Protactinium-231						4.36	0.2	4.16
Subsurface Soil (>0.5 ft)	IA-10	Radium-226	44/58	0.6	44	2.64	Z	4.36	1.05	3.31
Subsurface Soil (>0.5 ft)	IA-10	Radium-228						0.5712	0.98	0
Subsurface Soil (>0.5 ft)	IA-10	Thorium-228						1.734	1.18	0.554
Subsurface Soil (>0.5 ft)	IA-10	Thorium-230	60/63	0.4	46	6.04	Z	7.83	1.66	6.17
Subsurface Soil (>0.5 ft)	IA-10	Thorium-232	43/58	0.7	4	1.78	Z	2.04	1.11	0.93
Subsurface Soil (>0.5 ft)	IA-10	Uranium-234						10.9	1.13	9.77
Subsurface Soil (>0.5 ft)	IA-10	Uranium-235						0.5014	0.06	0.4414
Subsurface Soil (>0.5 ft)	IA-10	Uranium-238	2/58	43.9	45	8.23	D	10.9	1.18	9.72
Surface Soil (<0.5 ft)	IA-10	Actinium-227	0/4			0.1	D	0.217	0.209	0.008
Surface Soil (<0.5 ft)	IA-10	Lead-210						2.193	0	2.193
Surface Soil (<0.5 ft)	IA-10	Protactinium-231	0/4			-0.0175	D	0.305	0.195	0.11
Surface Soil (<0.5 ft)	IA-10	Radium-226	95/119	0.3	2.8	1.19	Z	1.29	1.05	0.24
Surface Soil (<0.5 ft)	IA-10	Radium-228	4/4	0.88	0.94	0.908	D	0.94	0.977	0
Surface Soil (<0.5 ft)	IA-10	Thorium-228	4/4	1.23	2.29	1.71	D	2.23	1.18	1.05
Surface Soil (<0.5 ft)	IA-10	Thorium-230	112/121	0.4	29	3.8	Z	4.44	1.66	2.78
Surface Soil (<0.5 ft)	IA-10	Thorium-232	88/119	0.5	4	1.39	Z	1.52	1.11	0.41

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	IA-10	Uranium-234						5.45	1.13	4.32
Surface Soil (<0.5 ft)	IA-10	Uranium-235	0/4			0.108	D	0.18	0.0618	0.1182
Surface Soil (<0.5 ft)	IA-10	Uranium-238	0/119			4.54	D	5.45	1.18	4.27
Surface Soil (<5 ft)	IA-11	Thorium-230	2/2	1.5	1.9	1.7	D	1.9	1.66	0.24
Subsurface Soil (>0.5 ft)	IA-12	Actinium-227	2/3	1.45	2.23	1.29	D	2.23	0.209	2.021
Subsurface Soil (>0.5 ft)	IA-12	Lead-210						4.352	0	4.352
Subsurface Soil (>0.5 ft)	IA-12	Protactinium-231	2/3	1.43	2.31	1.49	D	2.31	0.195	2.115
Subsurface Soil (>0.5 ft)	IA-12	Radium-226	148/148	0.6	26	2.25	X	2.56	1.05	1.51
Subsurface Soil (>0.5 ft)	IA-12	Radium-228	3/3	0.9	1.21	1.06	D	1.21	0.977	0.233
Subsurface Soil (>0.5 ft)	IA-12	Thorium-228	3/3	1.17	1.72	1.43	D	1.72	1.18	0.54
Subsurface Soil (>0.5 ft)	IA-12	Thorium-230	116/117	1.5	1900	47.2	X	74.9	1.66	73.24
Subsurface Soil (>0.5 ft)	IA-12	Thorium-232	133/148	0.9	5	1.9	X	2.01	1.11	0.9
Subsurface Soil (>0.5 ft)	IA-12	Uranium-234						9.47	1.13	8.34
Subsurface Soil (>0.5 ft)	IA-12	Uranium-235	2/3	1.17	1.75	0.987	D	1.75	0.0618	1.6882
Subsurface Soil (>0.5 ft)	IA-12	Uranium-238	14/148	5	31	8.91	D	9.47	1.18	8.29
Surface Soil (<0.5 ft)	IA-12	Actinium-227						3.8824	0.21	3.6724
Surface Soil (<0.5 ft)	IA-12	Lead-210						7.174	0	7.174
Surface Soil (<0.5 ft)	IA-12	Protactinium-231						4.22	0.2	4.02
Surface Soil (<0.5 ft)	IA-12	Radium-226	86/86	0.8	37	3.36	X	4.22	1.05	3.17
Surface Soil (<0.5 ft)	IA-12	Radium-228						0.4788	0.98	0
Surface Soil (<0.5 ft)	IA-12	Thorium-228						1.4535	1.18	0.2735
Surface Soil (<0.5 ft)	IA-12	Thorium-230	37/37	5.5	2200	173	L	319	1.66	317.34
Surface Soil (<0.5 ft)	IA-12	Thorium-232	70/86	0.6	5	1.57	X	1.71	1.11	0.6
Surface Soil (<0.5 ft)	IA-12	Uranium-234						12.3	1.13	11.17
Surface Soil (<0.5 ft)	IA-12	Uranium-235						0.5658	0.06	0.5058
Surface Soil (<0.5 ft)	IA-12	Uranium-238	11/86	5	94	10.4	D	12.3	1.18	11.12
Subsurface Soil (>0.5 ft)	IA-13	Actinium-227						1.8584	0.21	1.6484
Subsurface Soil (>0.5 ft)	IA-13	Lead-210						3.434	0	3.434
Subsurface Soil (>0.5 ft)	IA-13	Protactinium-231						2.02	0.2	1.82
Subsurface Soil (>0.5 ft)	IA-13	Radium-226	380/389	0.65	7	1.95	X	2.02	1.05	0.97

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	IA-13	Radium-228						0.588	0.98	0
Subsurface Soil (>0.5 ft)	IA-13	Thorium-228						1.785	1.18	0.605
Subsurface Soil (>0.5 ft)	IA-13	Thorium-230	375/378	0.45	100	2.6	X	3.24	1.66	1.58
Subsurface Soil (>0.5 ft)	IA-13	Thorium-232	278/389	0.6	6	2.02	X	2.1	1.11	0.99
Subsurface Soil (>0.5 ft)	IA-13	Uranium-234						10.8	1.13	9.67
Subsurface Soil (>0.5 ft)	IA-13	Uranium-235						0.4968	0.06	0.4368
Subsurface Soil (>0.5 ft)	IA-13	Uranium-238	6/389	1.2	16	10.2	D	10.8	1.18	9.62
Surface Soil (<0.5 ft)	IA-13	Actinium-227	26/38	0.2	0.71	0.328	X	0.382	0.209	0.173
Surface Soil (<0.5 ft)	IA-13	Lead-210						2.703	0	2.703
Surface Soil (<0.5 ft)	IA-13	Protactinium-231	2/38	1.55	1.92	0.391	D	0.514	0.195	0.319
Surface Soil (<0.5 ft)	IA-13	Radium-226	110/111	0.54	3.3	1.48	X	1.59	1.05	0.54
Surface Soil (<0.5 ft)	IA-13	Radium-228	37/37	0.14	1.13	0.844	X	0.911	0.977	0
Surface Soil (<0.5 ft)	IA-13	Thorium-228	38/38	0.39	2.14	1.11	N	1.2	1.18	0.02
Surface Soil (<0.5 ft)	IA-13	Thorium-230	108/109	0.42	110	11.4	L	15.4	1.66	13.74
Surface Soil (<0.5 ft)	IA-13	Thorium-232	103/112	0.44	4	1.44	L	1.54	1.11	0.43
Surface Soil (<0.5 ft)	IA-13	Uranium-234						4.03	1.13	2.9
Surface Soil (<0.5 ft)	IA-13	Uranium-235	11/38	0.2	0.51	0.168	D	0.195	0.0618	0.1332
Surface Soil (<0.5 ft)	IA-13	Uranium-238	3/112	2.8	7	3.58	D	4.03	1.18	2.85
Subsurface Soil (>0.5 ft)	IA-2	Actinium-227	44/57	0.18	130.4	3.27	X	7.14	0.209	6.931
Subsurface Soil (>0.5 ft)	IA-2	Lead-210						48.28	0	48.28
Subsurface Soil (>0.5 ft)	IA-2	Protactinium-231	5/57	2.33	179.3	3.99	D	9.28	0.195	9.085
Subsurface Soil (>0.5 ft)	IA-2	Radium-226	93/130	0.5	590	17.2	X	28.4	1.05	27.35
Subsurface Soil (>0.5 ft)	IA-2	Radium-228	57/57	0.67	4.82	1.02	X	1.14	0.977	0.163
Subsurface Soil (>0.5 ft)	IA-2	Thorium-228	57/57	0.74	4.82	1.43	X	1.58	1.18	0.4
Subsurface Soil (>0.5 ft)	IA-2	Thorium-230	90/91	0	14070	198	Z	456	1.66	454.34
Subsurface Soil (>0.5 ft)	IA-2	Thorium-232	78/130	0.6	4.82	2.16	X	2.35	1.11	1.24
Subsurface Soil (>0.5 ft)	IA-2	Uranium-234						49.9	1.13	48.77
Subsurface Soil (>0.5 ft)	IA-2	Uranium-235	24/57	0.19	37.21	1.16	D	2.28	0.0618	2.2182
Subsurface Soil (>0.5 ft)	IA-2	Uranium-238	26/128	3.99	706	36.6	D	49.9	1.18	48.72
Surface Soil (<5 ft)	IA-2	Actinium-227	11/13	0.18	130.4	13.1	X	30.9	0.209	30.691
Surface Soil (<5 ft)	IA-2	Lead-210						115.94	0	115.94

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<5 ft)	IA-2	Protactinium-231	5/13	2.66	179.3	17.1	D	41.4	0.195	41.205
Surface Soil (<5 ft)	IA-2	Radium-226	32/53	0.85	590	38.6	X	68.2	1.05	67.15
Surface Soil (<5 ft)	IA-2	Radium-228	13/13	0.38	4.82	1.19	X	1.74	0.977	0.763
Surface Soil (<5 ft)	IA-2	Thorium-228	13/13	0.5	4.82	1.39	X	1.92	1.18	0.74
Surface Soil (<5 ft)	IA-2	Thorium-230	30/30	0	14070	584	Z	1380	1.66	1378.34
Surface Soil (<5 ft)	IA-2	Thorium-232	23/53	0.44	4.82	2.71	D	3.15	1.11	2.04
Surface Soil (<5 ft)	IA-2	Uranium-234						98.1	1.13	96.97
Surface Soil (<5 ft)	IA-2	Uranium-235	10/13	0.25	37.21	4.65	Z	9.68	0.0618	9.6182
Surface Soil (<5 ft)	IA-2	Uranium-238	14/54	6.02	706	67.8	D	98.1	1.18	96.92
Subsurface Soil (>0.5 ft)	IA-3	Actinium-227	37/54	0.19	99.15	3.58	Z	6.98	0.209	6.771
Subsurface Soil (>0.5 ft)	IA-3	Lead-210						197.2	0	197.2
Subsurface Soil (>0.5 ft)	IA-3	Protactinium-231	7/54	1.5	56.27	2.24	D	4.25	0.195	4.055
Subsurface Soil (>0.5 ft)	IA-3	Radium-226	132/167	0.7	5620	57.7	X	116	1.05	114.95
Subsurface Soil (>0.5 ft)	IA-3	Radium-228	53/53	0.42	1.61	0.973	X	1.01	0.977	0.033
Subsurface Soil (>0.5 ft)	IA-3	Thorium-228	53/53	0.59	1.79	1.18	N	1.24	1.18	0.06
Subsurface Soil (>0.5 ft)	IA-3	Thorium-230	96/97	0.6	7241	189	Z	347	1.66	345.34
Subsurface Soil (>0.5 ft)	IA-3	Thorium-232	114/166	0.4	5	2.23	X	2.74	1.11	1.63
Subsurface Soil (>0.5 ft)	IA-3	Uranium-234						72.1	1.13	70.97
Subsurface Soil (>0.5 ft)	IA-3	Uranium-235	33/53	0.19	17.99	1.04	Z	1.7	0.0618	1.6382
Subsurface Soil (>0.5 ft)	IA-3	Uranium-238	47/167	3.04	1600	49.9	D	72.1	1.18	70.92
Surface Soil (<5 ft)	IA-3	Actinium-227	11/15	0.19	47.16	4.99	X	10.7	0.209	10.491
Surface Soil (<5 ft)	IA-3	Lead-210						27.03	0	27.03
Surface Soil (<5 ft)	IA-3	Protactinium-231	6/15	1.56	31.66	3.87	D	7.86	0.195	7.665
Surface Soil (<5 ft)	IA-3	Radium-226	59/74	0.7	208	10.1	X	15.9	1.05	14.85
Surface Soil (<5 ft)	IA-3	Radium-228	15/15	0.33	1.81	0.846	L	1.1	0.977	0.123
Surface Soil (<5 ft)	IA-3	Thorium-228	15/15	0.34	1.81	1.04	N	1.23	1.18	0.05
Surface Soil (<5 ft)	IA-3	Thorium-230	36/36	1.09	5335	226	X	482	1.66	480.34
Surface Soil (<5 ft)	IA-3	Thorium-232	51/74	0.4	5	1.96	L	2.27	1.11	1.16
Surface Soil (<5 ft)	IA-3	Uranium-234						31.4	1.13	30.27
Surface Soil (<5 ft)	IA-3	Uranium-235	11/15	0.22	8.21	1.46	Z	2.61	0.0618	2.5482
Surface Soil (<5 ft)	IA-3	Uranium-238	18/74	3.04	270	23.6	D	31.4	1.18	30.22

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	IA-4	Actinium-227	26/41	0.16	16.18	0.797	X	1.47	0.209	1.261
Subsurface Soil (>0.5 ft)	IA-4	Lead-210						200.6	0	200.6
Subsurface Soil (>0.5 ft)	IA-4	Protactinium-231	2/41	2.49	3.98	0.41	D	0.628	0.195	0.433
Subsurface Soil (>0.5 ft)	IA-4	Radium-226	64/105	0.62	1740	74	X	118	1.05	116.95
Subsurface Soil (>0.5 ft)	IA-4	Radium-228	40/40	0.78	1.25	0.93	X	0.955	0.977	0
Subsurface Soil (>0.5 ft)	IA-4	Thorium-228	40/40	0.57	2.2	1.25	L	1.36	1.18	0.18
Subsurface Soil (>0.5 ft)	IA-4	Thorium-230	74/74	1.08	2440	107	X	182	1.66	180.34
Subsurface Soil (>0.5 ft)	IA-4	Thorium-232	50/103	0.56	7	3.18	D	3.69	1.11	2.58
Subsurface Soil (>0.5 ft)	IA-4	Uranium-234						86.1	1.13	84.97
Subsurface Soil (>0.5 ft)	IA-4	Uranium-235	21/40	0.18	82.19	2.46	Z	5.91	0.0618	5.8482
Subsurface Soil (>0.5 ft)	IA-4	Uranium-238	12/104	3.34	1769	56.4	D	86.1	1.18	84.92
Surface Soil (<5 ft)	IA-4	Actinium-227	6/6	0.23	4.76	1.61	L	4.76	0.209	4.551
Surface Soil (<5 ft)	IA-4	Lead-210						453.9	0	453.9
Surface Soil (<5 ft)	IA-4	Protactinium-231	3/6	2.49	3.98	1.75	D	3.29	0.195	3.095
Surface Soil (<5 ft)	IA-4	Radium-226	20/40	0.82	1518	170	X	267	1.05	265.95
Surface Soil (<5 ft)	IA-4	Radium-228	6/6	0.95	1.2	1.04	L	1.13	0.977	0.153
Surface Soil (<5 ft)	IA-4	Thorium-228	6/6	1.02	2.2	1.4	L	1.86	1.18	0.68
Surface Soil (<5 ft)	IA-4	Thorium-230	15/15	1.1	2440	398	L	2440	1.66	2438.34
Surface Soil (<5 ft)	IA-4	Thorium-232	8/38	1.15	4	4.76	D	4	1.11	2.89
Surface Soil (<5 ft)	IA-4	Uranium-234						72.4	1.13	71.27
Surface Soil (<5 ft)	IA-4	Uranium-235	5/6	1.21	3.89	1.96	N	3.06	0.0618	2.9982
Surface Soil (<5 ft)	IA-4	Uranium-238	4/38	14.83	72.35	79.2	D	72.4	1.18	71.22
Subsurface Soil (>0.5 ft)	IA-5	Actinium-227	89/131	0.16	292.7	3.54	Z	7.31	0.209	7.101
Subsurface Soil (>0.5 ft)	IA-5	Lead-210						32.81	0	32.81
Subsurface Soil (>0.5 ft)	IA-5	Protactinium-231	11/131	1.21	346.4	4.03	D	8.48	0.195	8.285
Subsurface Soil (>0.5 ft)	IA-5	Radium-226	232/315	0.59	900	13.4	X	19.3	1.05	18.25
Subsurface Soil (>0.5 ft)	IA-5	Radium-228	130/131	0.71	3.56	0.944	X	0.983	0.977	0.006
Subsurface Soil (>0.5 ft)	IA-5	Thorium-228	130/131	0.61	3.56	1.24	X	1.28	1.18	0.1
Subsurface Soil (>0.5 ft)	IA-5	Thorium-230	246/246	0.78	14680	190	X	296	1.66	294.34
Subsurface Soil (>0.5 ft)	IA-5	Thorium-232	197/316	0.42	7.5	2.19	X	2.33	1.11	1.22
Subsurface Soil (>0.5 ft)	IA-5	Uranium-234						33.6	1.13	32.47
Subsurface Soil (>0.5 ft)	IA-5	Uranium-235	51/131	0.17	32.11	0.715	D	1.18	0.0618	1.1182

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	IA-5	Uranium-238	41/316	5.08	1000	27.3	D	33.6	1.18	32.42
Surface Soil (<5 ft)	IA-5	Actinium-227	34/43	0.19	292.7	10.4	Z	22	0.209	21.791
Surface Soil (<5 ft)	IA-5	Lead-210						49.98	0	49.98
Surface Soil (<5 ft)	IA-5	Protactinium-231	12/43	0.9	346.4	12.2	D	25.9	0.195	25.705
Surface Soil (<5 ft)	IA-5	Radium-226	107/160	0.6	900	18.8	X	29.4	1.05	28.35
Surface Soil (<5 ft)	IA-5	Radium-228	42/43	0.61	3.56	1.09	X	1.2	0.977	0.223
Surface Soil (<5 ft)	IA-5	Thorium-228	42/43	0.71	3.56	1.32	X	1.44	1.18	0.26
Surface Soil (<5 ft)	IA-5	Thorium-230	106/106	1	14680	419	X	662	1.66	660.34
Surface Soil (<5 ft)	IA-5	Thorium-232	88/160	0.64	7.5	2.45	X	2.63	1.11	1.52
Surface Soil (<5 ft)	IA-5	Uranium-234						51.6	1.13	50.47
Surface Soil (<5 ft)	IA-5	Uranium-235	30/43	0.2	32.11	2.05	Z	3.45	0.0618	3.3882
Surface Soil (<5 ft)	IA-5	Uranium-238	34/160	6	1000	40	D	51.6	1.18	50.42
Subsurface Soil (>0.5 ft)	IA-6	Actinium-227	2/5	0.22	17.89	3.7	D	11.3	0.209	11.091
Subsurface Soil (>0.5 ft)	IA-6	Lead-210						9.809	0	9.809
Subsurface Soil (>0.5 ft)	IA-6	Protactinium-231	1/5	18.78	18.78	3.74	D	11.8	0.195	11.605
Subsurface Soil (>0.5 ft)	IA-6	Radium-226	16/32	0.85	36	3.77	X	5.77	1.05	4.72
Subsurface Soil (>0.5 ft)	IA-6	Radium-228	5/5	0.84	1.37	1	L	1.24	0.977	0.263
Subsurface Soil (>0.5 ft)	IA-6	Thorium-228	5/5	1.33	1.67	1.46	L	1.61	1.18	0.43
Subsurface Soil (>0.5 ft)	IA-6	Thorium-230	25/25	0.6	2100	138	X	287	1.66	285.34
Subsurface Soil (>0.5 ft)	IA-6	Thorium-232	13/32	0.74	7	2.8	D	3.16	1.11	2.05
Subsurface Soil (>0.5 ft)	IA-6	Uranium-234						32	1.13	30.87
Subsurface Soil (>0.5 ft)	IA-6	Uranium-235	3/5	0.2	4.33	1.03	D	2.79	0.0618	2.7282
Subsurface Soil (>0.5 ft)	IA-6	Uranium-238	8/32	8.28	32	29	D	32	1.18	30.82
Surface Soil (<5 ft)	IA-6	Actinium-227	1/1	17.89	17.89	17.9	D	17.9	0.209	17.691
Surface Soil (<5 ft)	IA-6	Lead-210						16.354	0	16.354
Surface Soil (<5 ft)	IA-6	Protactinium-231	1/1	18.78	18.78	18.8	D	18.8	0.195	18.605
Surface Soil (<5 ft)	IA-6	Radium-226	11/24	1	39.4	5.98	D	9.62	1.05	8.57
Surface Soil (<5 ft)	IA-6	Radium-228	1/1	1.37	1.37	1.37	D	1.37	0.977	0.393
Surface Soil (<5 ft)	IA-6	Thorium-228	1/1	1.37	1.37	1.37	D	1.37	1.18	0.19
Surface Soil (<5 ft)	IA-6	Thorium-230	15/15	1.4	2100	211	X	464	1.66	462.34
Surface Soil (<5 ft)	IA-6	Thorium-232	8/24	1.2	7	3.04	D	3.45	1.11	2.34

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<5 ft)	IA-6	Uranium-234						32	1.13	30.87
Surface Soil (<5 ft)	IA-6	Uranium-235	1/1	4.33	4.33	4.33	D	4.33	0.0618	4.2682
Surface Soil (<5 ft)	IA-6	Uranium-238	7/24	12	32	33.6	D	32	1.18	30.82
Subsurface Soil (>0.5 ft)	IA-7	Actinium-227	19/35	0.19	0.68	0.269	Z	0.325	0.209	0.116
Subsurface Soil (>0.5 ft)	IA-7	Lead-210						4.454	0	4.454
Subsurface Soil (>0.5 ft)	IA-7	Protactinium-231	8/35	1.2	2.38	0.628	D	0.828	0.195	0.633
Subsurface Soil (>0.5 ft)	IA-7	Radium-226	86/90	0.65	27	2.05	X	2.62	1.05	1.57
Subsurface Soil (>0.5 ft)	IA-7	Radium-228	35/35	0.66	1.15	0.937	N	0.967	0.977	0
Subsurface Soil (>0.5 ft)	IA-7	Thorium-228	35/35	0.69	1.91	1.23	L	1.31	1.18	0.13
Subsurface Soil (>0.5 ft)	IA-7	Thorium-230	72/73	0.86	1400	70.9	X	113	1.66	111.34
Subsurface Soil (>0.5 ft)	IA-7	Thorium-232	80/90	0.59	4	1.61	X	1.75	1.11	0.64
Subsurface Soil (>0.5 ft)	IA-7	Uranium-234						9.59	1.13	8.46
Subsurface Soil (>0.5 ft)	IA-7	Uranium-235	4/35	0.24	0.48	0.108	D	0.137	0.0618	0.0752
Subsurface Soil (>0.5 ft)	IA-7	Uranium-238	20/90	5	39	8.12	D	9.59	1.18	8.41
Surface Soil (<5 ft)	IA-7	Actinium-227	9/19	0.32	695.7	56.5	D	127	0.209	126.791
Surface Soil (<5 ft)	IA-7	Lead-210						140.25	0	140.25
Surface Soil (<5 ft)	IA-7	Protactinium-231	10/19	1.2	685.8	56.4	X	126	0.195	125.805
Surface Soil (<5 ft)	IA-7	Radium-226	87/92	0.7	1818	42.2	X	82.5	1.05	81.45
Surface Soil (<5 ft)	IA-7	Radium-228	19/19	0.81	7.54	1.67	X	2.46	0.977	1.483
Surface Soil (<5 ft)	IA-7	Thorium-228	19/19	1.02	7.54	1.95	X	2.71	1.18	1.53
Surface Soil (<5 ft)	IA-7	Thorium-230	70/71	1	37780	965	X	2010	1.66	2008.34
Surface Soil (<5 ft)	IA-7	Thorium-232	80/92	0.7	7.54	2.15	X	2.61	1.11	1.5
Surface Soil (<5 ft)	IA-7	Uranium-234						28.7	1.13	27.57
Surface Soil (<5 ft)	IA-7	Uranium-235	5/19	0.24	54.18	4.7	D	10.3	0.0618	10.2382
Surface Soil (<5 ft)	IA-7	Uranium-238	24/92	5	201.9	19.3	D	28.7	1.18	27.52
Subsurface Soil (>0.5 ft)	IA-8	Actinium-227	15/28	0.23	0.95	0.291	L	0.597	0.209	0.388
Subsurface Soil (>0.5 ft)	IA-8	Lead-210						7.021	0	7.021
Subsurface Soil (>0.5 ft)	IA-8	Protactinium-231	6/28	1.28	2.63	0.567	D	0.798	0.195	0.603
Subsurface Soil (>0.5 ft)	IA-8	Radium-226	282/294	0.67	130	3.3	X	4.13	1.05	3.08
Subsurface Soil (>0.5 ft)	IA-8	Radium-228	28/28	0.81	1.15	0.948	X	0.973	0.977	0
Subsurface Soil (>0.5 ft)	IA-8	Thorium-228	28/28	0.68	1.98	1.27	N	1.38	1.18	0.2

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	IA-8	Thorium-230	303/303	0.9	15000	91.1	X	175	1.66	173.34
Subsurface Soil (>0.5 ft)	IA-8	Thorium-232	229/294	0.68	14	2.24	X	2.37	1.11	1.26
Subsurface Soil (>0.5 ft)	IA-8	Uranium-234						13.6	1.13	12.47
Subsurface Soil (>0.5 ft)	IA-8	Uranium-235	9/28	0.19	0.44	0.165	D	0.208	0.0618	0.1462
Subsurface Soil (>0.5 ft)	IA-8	Uranium-238	24/294	3.87	66	12.7	D	13.6	1.18	12.42
Surface Soil (<0.5 ft)	IA-8	Actinium-227	23/23	0.18	442.6	43	X	82.3	0.209	82.091
Surface Soil (<0.5 ft)	IA-8	Lead-210						58.99	0	58.99
Surface Soil (<0.5 ft)	IA-8	Protactinium-231	18/23	0.84	450.3	45.4	Z	86.5	0.195	86.305
Surface Soil (<0.5 ft)	IA-8	Radium-226	85/86	0.7	436.4	23.5	X	34.7	1.05	33.65
Surface Soil (<0.5 ft)	IA-8	Radium-228	23/23	0.28	4.76	1.29	X	1.64	0.977	0.663
Surface Soil (<0.5 ft)	IA-8	Thorium-228	23/23	0.49	4.76	1.49	L	1.82	1.18	0.64
Surface Soil (<0.5 ft)	IA-8	Thorium-230	83/84	2.9	20280	917	L	1750	1.66	1748.34
Surface Soil (<0.5 ft)	IA-8	Thorium-232	71/86	0.4	5	1.81	Z	2.03	1.11	0.92
Surface Soil (<0.5 ft)	IA-8	Uranium-234						25.9	1.13	24.77
Surface Soil (<0.5 ft)	IA-8	Uranium-235	21/23	0.32	38.87	5.35	L	20.2	0.0618	20.1382
Surface Soil (<0.5 ft)	IA-8	Uranium-238	29/86	6	190.4	19.9	D	25.9	1.18	24.72
Subsurface Soil (>0.5 ft)	IA-9	Actinium-227	106/140	0.09	189.9	2.85	Z	5.3	0.209	5.091
Subsurface Soil (>0.5 ft)	IA-9	Lead-210						5.576	0	5.576
Subsurface Soil (>0.5 ft)	IA-9	Protactinium-231	21/140	1.02	217.1	3.23	D	6.05	0.195	5.855
Subsurface Soil (>0.5 ft)	IA-9	Radium-226	420/427	0.15	230.7	2.29	Z	3.28	1.05	2.23
Subsurface Soil (>0.5 ft)	IA-9	Radium-228	140/140	0.15	2.79	0.969	X	1	0.977	0.023
Subsurface Soil (>0.5 ft)	IA-9	Thorium-228	139/140	0.6	15.78	1.38	X	1.56	1.18	0.38
Subsurface Soil (>0.5 ft)	IA-9	Thorium-230	402/407	0.6	10140	57.2	X	105	1.66	103.34
Subsurface Soil (>0.5 ft)	IA-9	Thorium-232	404/427	0.5	10.93	1.65	L	1.7	1.11	0.59
Subsurface Soil (>0.5 ft)	IA-9	Uranium-234						6.64	1.13	5.51
Subsurface Soil (>0.5 ft)	IA-9	Uranium-235	30/140	0.18	20.23	0.555	D	0.881	0.0618	0.8192
Subsurface Soil (>0.5 ft)	IA-9	Uranium-238	13/427	2	119.7	6.03	D	6.64	1.18	5.46
Surface Soil (<0.5 ft)	IA-9	Actinium-227	26/61	0.16	46.85	1.39	D	2.84	0.209	2.631
Surface Soil (<0.5 ft)	IA-9	Lead-210						2.873	0	2.873
Surface Soil (<0.5 ft)	IA-9	Protactinium-231	25/61	0.73	51.73	2.12	D	3.69	0.195	3.495
Surface Soil (<0.5 ft)	IA-9	Radium-226	451/478	0.5	29.27	1.53	Z	1.69	1.05	0.64

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	IA-9	Radium-228	61/61	0.26	1.29	0.924	X	0.964	0.977	0
Surface Soil (<0.5 ft)	IA-9	Thorium-228	61/61	0.6	2.1	1.25	L	1.33	1.18	0.15
Surface Soil (<0.5 ft)	IA-9	Thorium-230	510/523	0.51	2787	23.2	X	34.3	1.66	32.64
Surface Soil (<0.5 ft)	IA-9	Thorium-232	443/474	0.47	5	1.59	Z	1.65	1.11	0.54
Surface Soil (<0.5 ft)	IA-9	Uranium-234						6.01	1.13	4.88
Surface Soil (<0.5 ft)	IA-9	Uranium-235	13/61	0.15	6.92	0.324	D	0.549	0.0618	0.4872
Surface Soil (<0.5 ft)	IA-9	Uranium-238	19/479	3.6	42	5.65	D	6.01	1.18	4.83
Soil - All Depths	Norfork Southern	Actinium-227						0.1218	0.21	0
Soil - All Depths	Norfork Southern	Lead-210						0.2436	0	0.2436
Soil - All Depths	Norfork Southern	Protactinium-231						0.1392	0.2	0
Soil - All Depths	Norfork Southern	Radium-226	41/42	0.9	6	2.5	L	2.88	1.05	1.83
Soil - All Depths	Norfork Southern	Radium-228						0.006264	0.98	0
Soil - All Depths	Norfork Southern	Thorium-228						0.0174	1.18	0
Soil - All Depths	Norfork Southern	Thorium-230	128/136	0.8	230	13.3	X	17.4	1.66	15.74
Soil - All Depths	Norfork Southern	Thorium-232	28/42	0.9	4	1.7	X	1.87	1.11	0.76
Soil - All Depths	Norfork Southern	Uranium-234						0.2088	1.13	0
Soil - All Depths	Norfork Southern	Uranium-235						0.009048	0.06	0
Soil - All Depths	Norfork Southern	Uranium-238	0/41			10.1	D	10.9	1.18	9.72
Subsurface Soil (>0.5 ft)	Norfork Southern	Actinium-227						0.1176	0.21	0
Subsurface Soil (>0.5 ft)	Norfork Southern	Lead-210						0.2352	0	0.2352
Subsurface Soil (>0.5 ft)	Norfork Southern	Protactinium-231						0.1344	0.2	0
Subsurface Soil (>0.5 ft)	Norfork Southern	Radium-226	31/32	0.9	6	2.62	L	3.06	1.05	2.01
Subsurface Soil (>0.5 ft)	Norfork Southern	Radium-228						0.006048	0.98	0
Subsurface Soil (>0.5 ft)	Norfork Southern	Thorium-228						0.0168	1.18	0
Subsurface Soil (>0.5 ft)	Norfork Southern	Thorium-230	106/114	0.8	230	12.3	X	16.8	1.66	15.14
Subsurface Soil (>0.5 ft)	Norfork Southern	Thorium-232	24/32	1	4	1.74	X	1.96	1.11	0.85
Subsurface Soil (>0.5 ft)	Norfork Southern	Uranium-234						0.2016	1.13	0
Subsurface Soil (>0.5 ft)	Norfork Southern	Uranium-235						0.008736	0.06	0
Subsurface Soil (>0.5 ft)	Norfork Southern	Uranium-238	0/31			10.3	D	11.3	1.18	10.12
Surface Soil (<0.5 ft)	Norfork Southern	Actinium-227						0.2142	0.21	0.0042
Surface Soil (<0.5 ft)	Norfork Southern	Lead-210						0.4284	0	0.4284

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	Norfork Southern	Protactinium-231						0.2448	0.2	0.0448
Surface Soil (<0.5 ft)	Norfork Southern	Radium-226	10/10	1	4	2.12	L	3.03	1.05	1.98
Surface Soil (<0.5 ft)	Norfork Southern	Radium-228						0.011016	0.98	0
Surface Soil (<0.5 ft)	Norfork Southern	Thorium-228						0.0306	1.18	0
Surface Soil (<0.5 ft)	Norfork Southern	Thorium-230	22/22	1.3	130	18.1	X	30.6	1.66	28.94
Surface Soil (<0.5 ft)	Norfork Southern	Thorium-232	4/10	0.9	2	1.56	D	1.86	1.11	0.75
Surface Soil (<0.5 ft)	Norfork Southern	Uranium-234						0.3672	1.13	0
Surface Soil (<0.5 ft)	Norfork Southern	Uranium-235						0.015912	0.06	0
Surface Soil (<0.5 ft)	Norfork Southern	Uranium-238	0/10			9.5	D	11.3	1.18	10.12
Soil - All Depths	ROAD ROW	Actinium-227	2/4	0.27	0.29	0.215	D	0.29	0.209	0.081
Soil - All Depths	ROAD ROW	Lead-210						0.6986	0	0.6986
Soil - All Depths	ROAD ROW	Protactinium-231	0/4			0.213	D	0.737	0.195	0.542
Soil - All Depths	ROAD ROW	Radium-226	1730/1757	0.4	92	2.7	X	2.89	1.05	1.84
Soil - All Depths	ROAD ROW	Radium-228	4/4	0.8	1.02	0.925	D	1.02	0.977	0.043
Soil - All Depths	ROAD ROW	Thorium-228	4/4	1.14	1.51	1.39	D	1.51	1.18	0.33
Soil - All Depths	ROAD ROW	Thorium-230	2740/2784	0.3	5100	42.2	X	49.9	1.66	48.24
Soil - All Depths	ROAD ROW	Thorium-232	1520/1752	0.35	64	2.13	Z	2.22	1.11	1.11
Soil - All Depths	ROAD ROW	Uranium-234						0.5988	1.13	0
Soil - All Depths	ROAD ROW	Uranium-235	1/4	0.24	0.24	0.133	D	0.24	0.0618	0.1782
Soil - All Depths	ROAD ROW	Uranium-238	47/1754	2.1	78	11.2	D	11.5	1.18	10.32
Subsurface Soil (>0.5 ft)	ROAD ROW	Actinium-227						0.0938	0.21	0
Subsurface Soil (>0.5 ft)	ROAD ROW	Lead-210						0.1876	0	0.1876
Subsurface Soil (>0.5 ft)	ROAD ROW	Protactinium-231						0.1072	0.2	0
Subsurface Soil (>0.5 ft)	ROAD ROW	Radium-226	1359/1381	0.4	39.9	1.99	X	2.07	1.05	1.02
Subsurface Soil (>0.5 ft)	ROAD ROW	Radium-228						0.004824	0.98	0
Subsurface Soil (>0.5 ft)	ROAD ROW	Thorium-228						0.0134	1.18	0
Subsurface Soil (>0.5 ft)	ROAD ROW	Thorium-230	2328/2371	0.3	1100	11.7	X	13.4	1.66	11.74
Subsurface Soil (>0.5 ft)	ROAD ROW	Thorium-232	1199/1376	0.4	64	2.19	X	2.28	1.11	1.17
Subsurface Soil (>0.5 ft)	ROAD ROW	Uranium-234						0.1608	1.13	0
Subsurface Soil (>0.5 ft)	ROAD ROW	Uranium-235						0.006968	0.06	0
Subsurface Soil (>0.5 ft)	ROAD ROW	Uranium-238	11/1379	2.1	48.2	11.3	D	11.6	1.18	10.42

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<0.5 ft)	ROAD ROW	Actinium-227	2/4	0.27	0.29	0.215	D	0.29	0.209	0.081
Surface Soil (<0.5 ft)	ROAD ROW	Lead-210						3.724	0	3.724
Surface Soil (<0.5 ft)	ROAD ROW	Protactinium-231	0/4			0.213	D	0.737	0.195	0.542
Surface Soil (<0.5 ft)	ROAD ROW	Radium-226	371/376	0.6	92	5.29	X	6.09	1.05	5.04
Surface Soil (<0.5 ft)	ROAD ROW	Radium-228	4/4	0.8	1.02	0.925	D	1.02	0.977	0.043
Surface Soil (<0.5 ft)	ROAD ROW	Thorium-228	4/4	1.14	1.51	1.39	D	1.51	1.18	0.33
Surface Soil (<0.5 ft)	ROAD ROW	Thorium-230	412/413	0.6	5100	218	X	266	1.66	264.34
Surface Soil (<0.5 ft)	ROAD ROW	Thorium-232	321/376	0.35	46	1.93	Z	2.14	1.11	1.03
Surface Soil (<0.5 ft)	ROAD ROW	Uranium-234						3.192	1.13	2.062
Surface Soil (<0.5 ft)	ROAD ROW	Uranium-235	1/4	0.24	0.24	0.133	D	0.24	0.0618	0.1782
Surface Soil (<0.5 ft)	ROAD ROW	Uranium-238	36/375	2.3	78	11	D	11.8	1.18	10.62
Subsurface Soil (>0.5 ft)	SLAPS	Actinium-227	222/337	0.16	292.7	2.7	Z	4.39	0.209	4.181
Subsurface Soil (>0.5 ft)	SLAPS	Lead-210						75.65	0	75.65
Subsurface Soil (>0.5 ft)	SLAPS	Protactinium-231	34/337	1.2	346.4	2.8	D	4.76	0.195	4.565
Subsurface Soil (>0.5 ft)	SLAPS	Radium-226	649/874	0.5	5620	31	X	44.5	1.05	43.45
Subsurface Soil (>0.5 ft)	SLAPS	Radium-228	331/332	0.42	4.82	0.958	X	0.985	0.977	0.008
Subsurface Soil (>0.5 ft)	SLAPS	Thorium-228	331/332	0.57	4.82	1.26	X	1.3	1.18	0.12
Subsurface Soil (>0.5 ft)	SLAPS	Thorium-230	623/626	0	14680	159	Z	221	1.66	219.34
Subsurface Soil (>0.5 ft)	SLAPS	Thorium-232	554/872	0.4	63	2.32	X	2.5	1.11	1.39
Subsurface Soil (>0.5 ft)	SLAPS	Uranium-234						42.3	1.13	41.17
Subsurface Soil (>0.5 ft)	SLAPS	Uranium-235	138/332	0.17	82.19	0.975	D	1.47	0.0618	1.4082
Subsurface Soil (>0.5 ft)	SLAPS	Uranium-238	162/872	3.04	1769	35.6	D	42.3	1.18	41.12
Surface Soil (<5 ft)	SLAPS	Actinium-227	72/98	0.18	695.7	18.3	Z	32.6	0.209	32.391
Surface Soil (<5 ft)	SLAPS	Lead-210						99.96	0	99.96
Surface Soil (<5 ft)	SLAPS	Protactinium-231	37/98	0.9	685.8	19.5	D	34.1	0.195	33.905
Surface Soil (<5 ft)	SLAPS	Radium-226	323/456	0.6	2700	42.6	X	58.8	1.05	57.75
Surface Soil (<5 ft)	SLAPS	Radium-228	96/97	0.33	7.54	1.18	X	1.35	0.977	0.373
Surface Soil (<5 ft)	SLAPS	Thorium-228	96/97	0.34	7.54	1.42	X	1.59	1.18	0.41
Surface Soil (<5 ft)	SLAPS	Thorium-230	278/279	0	37780	530	Z	823	1.66	821.34
Surface Soil (<5 ft)	SLAPS	Thorium-232	264/454	0.4	63	2.7	X	2.98	1.11	1.87
Surface Soil (<5 ft)	SLAPS	Uranium-234						49.6	1.13	48.47
Surface Soil (<5 ft)	SLAPS	Uranium-235	62/97	0.2	54.18	2.84	Z	4.22	0.0618	4.1582

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Surface Soil (<5 ft)	SLAPS	Uranium-238	104/455	3.04	1200	41.9	D	49.6	1.18	48.42
Soil - All Depths	Stone Container	Actinium-227	0/1			0.15	D		0.209	0
Soil - All Depths	Stone Container	Actinium-227						2.992	0.21	2.782
Soil - All Depths	Stone Container	Lead-210						6.528	0	6.528
Soil - All Depths	Stone Container	Protactinium-231	0/1			0.03	D		0.195	0
Soil - All Depths	Stone Container	Protactinium-231						3.536	0.2	3.336
Soil - All Depths	Stone Container	Radium-226	365/366	0.33	89	2.29	X	2.72	1.05	1.67
Soil - All Depths	Stone Container	Radium-228	1/1	1.06	1.06	1.06	D	1.06	0.977	0.083
Soil - All Depths	Stone Container	Thorium-228	1/1	1.06	1.06	1.06	D	1.06	1.18	0
Soil - All Depths	Stone Container	Thorium-230	316/318	0.4	5700	80.5	Z	119	1.66	117.34
Soil - All Depths	Stone Container	Thorium-232	332/366	0.7	5	1.88	X	1.95	1.11	0.84
Soil - All Depths	Stone Container	Uranium-234						10.3	1.13	9.17
Soil - All Depths	Stone Container	Uranium-235	0/1			0.21	D		0.0618	0
Soil - All Depths	Stone Container	Uranium-235						0.4738	0.06	0.4138
Soil - All Depths	Stone Container	Uranium-238	25/366	3.3	100	9.7	D	10.3	1.18	9.12
Soil - All Depths	Wabash/VP-2(C)	Actinium-227						0.04326	0.21	0
Soil - All Depths	Wabash/VP-2(C)	Lead-210						0.08652	0	0.08652
Soil - All Depths	Wabash/VP-2(C)	Protactinium-231						0.04944	0.2	0
Soil - All Depths	Wabash/VP-2(C)	Radium-226	16/16	0.7	3	1.64	N	1.93	1.05	0.88
Soil - All Depths	Wabash/VP-2(C)	Radium-228						0.0022248	0.98	0
Soil - All Depths	Wabash/VP-2(C)	Thorium-228						0.00618	1.18	0
Soil - All Depths	Wabash/VP-2(C)	Thorium-230	15/16	1	17	4.33	X	6.18	1.66	4.52
Soil - All Depths	Wabash/VP-2(C)	Thorium-232	13/16	0.9	4	1.76	L	2.19	1.11	1.08
Soil - All Depths	Wabash/VP-2(C)	Uranium-234						0.07416	1.13	0
Soil - All Depths	Wabash/VP-2(C)	Uranium-235						0.0032136	0.06	0
Soil - All Depths	Wabash/VP-2(C)	Uranium-238	0/16			8.59	D	10.9	1.18	9.72
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Actinium-227						0.0462	0.21	0
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Lead-210						0.0924	0	0.0924
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Protactinium-231						0.0528	0.2	0
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Radium-226	4/4	0.7	1.3	0.925	D	1.23	1.05	0.18
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Radium-228						0.002376	0.98	0

Attachment 5. Soil Summary Statistics for Radionuclides (Page 84 of 84)

Data Grouping	Aggregate	Analyte[a]	Freq. Det.[b]	Min. Det. Conc.[b]	Max. Det. Conc.[b]	Mean Conc.[b]	Dist.[b,c]	Exposure Conc.	Mean Background Conc.	Adjusted Expos. Conc.[d]
Soil - All Depths	09K120040/VP-3(C)	Actinium-227						0.0994	0.21	0
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Thorium-228						0.0066	1.18	0
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Thorium-230	4/4	1	6.6	4.68	D	6.6	1.66	4.94
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Thorium-232	4/4	1.1	2	1.45	D	1.96	1.11	0.85
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Uranium-234						0.0792	1.13	0
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Uranium-235						0.003432	0.06	0
Subsurface Soil (>0.5 ft)	Wabash/VP-2(C)	Uranium-238	0/4			5.85	D	7.9	1.18	6.72
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Actinium-227						0.04676	0.21	0
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Lead-210						0.09352	0	0.09352
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Protactinium-231						0.05344	0.2	0
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Radium-226	12/12	0.9	3	1.88	N	2.18	1.05	1.13
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Radium-228						0.0024048	0.98	0
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Thorium-228						0.00668	1.18	0
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Thorium-230	11/12	1.2	17	4.22	X	6.68	1.66	5.02
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Thorium-232	9/12	0.9	4	1.87	L	2.48	1.11	1.37
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Uranium-234						0.08016	1.13	0
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Uranium-235						0.0034736	0.06	0
Surface Soil (<0.5 ft)	Wabash/VP-2(C)	Uranium-238	0/12			9.5	D	12.4	1.18	11.22

[a] All units are pCi/g.
[b] Values supplied only for isotopes that were measured.
[c] Distribution codes:
D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of exposure concentration.
L = Lognormal; H-statistic used in calculations of exposure concentration.
N = Normal; t-statistic used in calculations of exposure concentration.
X = neither normal nor lognormal; t-statistic used in calculations of exposure concentration.
Z = includes negative concentrations; t-statistic used in calculations of exposure concentration.
[d] Adjusted exposure concentration = (Exposure concentration) - (mean background concentration); if this quantity is negative, then the adjusted exposure concentration is set to 0.0 pCi/g.

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 1 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Soil - All Depths	09K220205/VP-54	Aluminum	10/10	mg/kg			4260	7880	5530	L	6180	6180	u	14700	0/10	7.5E+03	N		Below Background
Soil - All Depths	09K220205/VP-54	Arsenic	10/10	mg/kg			0.84	11.9	5.85	N	7.75	7.75	u	18	0/10	3.8E-01	N		Below Background
Soil - All Depths	09K220205/VP-54	Barium	10/10	mg/kg			40.7	279	143	N	183	183	u	279	0/10	5.2E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Beryllium	10/10	mg/kg			0.41	0.56	0.489	L	0.524	0.524	u	0.83	0/10	1.5E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Calcium	10/10	mg/kg			2320	15500	5190	X	7590	7590	u	28900	0/10		N		Below Background
Soil - All Depths	09K220205/VP-54	Chromium	10/10	mg/kg			10	12	10.7	N	11.1	11.1	u	17.3	0/10	3.0E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Cobalt	10/10	mg/kg			5.5	9.6	7.41	L	8.39	8.39	u	31.7	0/10	3.3E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Copper	10/10	mg/kg			9.6	16.4	13.4	N	14.5	14.5	u	19.4	0/10	2.8E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Iron	10/10	mg/kg			7270	28200	12800	L	16900	16900	u	26600	1/10	2.2E+03	N		Essential Nutrient (low conc.)
Soil - All Depths	09K220205/VP-54	Lead	10/10	mg/kg			7.3	30.9	12.8	L	17.2	17.2	u	79.7	0/10	4.0E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Magnesium	10/10	mg/kg			1610	9940	3550	X	5020	5020	u	18400	0/10		N		Below Background
Soil - All Depths	09K220205/VP-54	Manganese	10/10	mg/kg			68.3	4690	1250	L	5960	4690	m	2830	2/10	3.1E+02	Y	Quant.	
Soil - All Depths	09K220205/VP-54	Molybdenum	10/10	mg/kg			6.3	22.7	10.5	L	13.5	13.5	u	22.7	0/10	3.7E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Nickel	10/10	mg/kg			10.1	23.4	14.6	L	17.7	17.7	u	33.9	0/10	1.5E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Potassium	10/10	mg/kg			436	827	634	N	711	711	u	1140	0/10		N		Below Background
Soil - All Depths	09K220205/VP-54	Silver	1/10	mg/kg	1.25	1.3	2.6	2.6	1.39	D	1.64	1.64	u	2.6	0/10	3.7E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Sodium	10/10	mg/kg			51.8	78	66.5	N	71.8	71.8	u	235	0/10		N		Below Background
Soil - All Depths	09K220205/VP-54	Vanadium	10/10	mg/kg			9.5	16.3	12.7	L	13.8	13.8	u	31	0/10	5.2E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Zinc	10/10	mg/kg			30.6	52.8	40.6	L	44.8	44.8	u	278	0/10	2.2E+03	N		Below Background
Soil - All Depths	09K220205/VP-54	Anthracene	1/10	mg/kg	0.205	0.22	0.031	0.031	0.194	D	0.227	0.031	m	0.031	0/10	1.4E+03	N		Below Background
Soil - All Depths	09K220205/VP-54	Benz(a)anthracene	1/10	mg/kg	0.205	0.22	0.17	0.17	0.208	D	0.216	0.17	m	0.3	0/10	5.6E-01	N		Below Background
Soil - All Depths	09K220205/VP-54	Benzo(a)pyrene	1/10	mg/kg	0.205	0.22	0.15	0.15	0.206	D	0.217	0.15	m	0.34	0/10	5.6E-02	N		Below Background
Soil - All Depths	09K220205/VP-54	Benzo(b)fluoranthene	1/10	mg/kg	0.205	0.22	0.21	0.21	0.212	D	0.214	0.21	m	0.31	0/10	5.6E-01	N		Below Background
Soil - All Depths	09K220205/VP-54	Benzo(ghi)perylene	1/10	mg/kg	0.205	0.22	0.084	0.084	0.199	D	0.222	0.084	m	0.39	0/10		N		Below Background
Soil - All Depths	09K220205/VP-54	Benzo(k)fluoranthene	1/10	mg/kg	0.205	0.22	0.18	0.18	0.209	D	0.215	0.18	m	0.29	0/10	5.6E+00	N		Below Background
Soil - All Depths	09K220205/VP-54	Chrysene	1/10	mg/kg	0.205	0.22	0.19	0.19	0.21	D	0.214	0.19	m	0.57	0/10	5.6E+01	N		Below Background
Soil - All Depths	09K220205/VP-54	Dibenz(a,h)anthracene	1/10	mg/kg	0.205	0.22	0.035	0.035	0.194	D	0.227	0.035	m	0.035	0/10	5.6E-02	N		Below Background
Soil - All Depths	09K220205/VP-54	Fluoranthene	1/10	mg/kg	0.205	0.22	0.41	0.41	0.232	D	0.268	0.268	u	0.7	0/10	2.0E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Indeno(1,2,3-cd)pyrene	1/10	mg/kg	0.205	0.22	0.13	0.13	0.204	D	0.219	0.13	m	0.35	0/10	5.6E-01	N		Below Background
Soil - All Depths	09K220205/VP-54	Phenanthrene	1/10	mg/kg	0.205	0.22	0.18	0.18	0.209	D	0.215	0.18	m	0.28	0/10		N		Below Background
Soil - All Depths	09K220205/VP-54	Pyrene	1/10	mg/kg	0.205	0.22	0.34	0.34	0.225	D	0.248	0.248	u	0.66	0/10	1.5E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Acetone	1/10	mg/kg	0.0065	0.0065	0.017	0.017	0.00755	D	0.00947	0.00947	u	0.017	0/10	1.4E+02	N		Below Background
Soil - All Depths	09K220205/VP-54	Toluene	7/9	mg/kg	0.003	0.0065	0.002	0.11	0.0248	L	0.192	0.11	m	0.11	0/9	5.2E+02	N		Below Background
Soil - All Depths	11K630221	Aluminum	1/1	mg/kg			10400	10400	10400	D		10400	m	14700	0/1	7.5E+03	N		Below Background
Soil - All Depths	11K630221	Arsenic	1/1	mg/kg			16.3	16.3	16.3	D		16.3	m	18	0/1	3.8E-01	N		Below Background
Soil - All Depths	11K630221	Barium	1/1	mg/kg			172	172	172	D		172	m	279	0/1	5.2E+02	N		Below Background
Soil - All Depths	11K630221	Beryllium	1/1	mg/kg			0.65	0.65	0.65	D		0.65	m	0.83	0/1	1.5E+01	N		Below Background
Soil - All Depths	11K630221	Boron	1/1	mg/kg			6.2	6.2	6.2	D		6.2	m	9.9	0/1	4.9E+02	N		Below Background
Soil - All Depths	11K630221	Calcium	1/1	mg/kg			4320	4320	4320	D		4320	m	28900	0/1		N		Below Background
Soil - All Depths	11K630221	Chromium	1/1	mg/kg			16.3	16.3	16.3	D		16.3	m	17.3	0/1	3.0E+01	N		Below Background
Soil - All Depths	11K630221	Cobalt	1/1	mg/kg			11.6	11.6	11.6	D		11.6	m	31.7	0/1	3.3E+02	N		Below Background
Soil - All Depths	11K630221	Copper	1/1	mg/kg			20	20	20	D		20	m	19.4	1/1	2.8E+02	N		Max. detect < PRG
Soil - All Depths	11K630221	Iron	1/1	mg/kg			16600	16600	16600	D		16600	m	26600	0/1	2.2E+03	N		Below Background
Soil - All Depths	11K630221	Lead	1/1	mg/kg			52.1	52.1	52.1	D		52.1	m	79.7	0/1	4.0E+01	N		Below Background
Soil - All Depths	11K630221	Lithium	1/1	mg/kg			5.9	5.9	5.9	D		5.9	m	8.1	0/1	1.5E+02	N		Below Background
Soil - All Depths	11K630221	Magnesium	1/1	mg/kg			2700	2700	2700	D		2700	m	18400	0/1		N		Below Background
Soil - All Depths	11K630221	Manganese	1/1	mg/kg			807	807	807	D		807	m	2830	0/1	3.1E+02	N		Below Background
Soil - All Depths	11K630221	Molybdenum	1/1	mg/kg			1.6	1.6	1.6	D		1.6	m	22.7	0/1	3.7E+01	N		Below Background
Soil - All Depths	11K630221	Nickel	1/1	mg/kg			20.7	20.7	20.7	D		20.7	m	33.9	0/1	1.5E+02	N		Below Background
Soil - All Depths	11K630221	Potassium	1/1	mg/kg			1470	1470	1470	D		1470	m	1140	1/1		N		Essential Nutrient (low conc.)
Soil - All Depths	11K630221	Selenium	1/1	mg/kg			0.41	0.41	0.41	D		0.41	m	0.55	0/1	3.7E+01	N		Below Background
Soil - All Depths	11K630221	Sodium	1/1	mg/kg			143	143	143	D		143	m	235	0/1		N		Below Background
Soil - All Depths	11K630221	Strontium	1/1	mg/kg			15.8	15.8	15.8	D		15.8	m	26	0/1	4.5E+03	N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 2 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Soil - All Depths	11K630221	Titanium	1/1	mg/kg			189	189	189	D		189	m	269	0/1		N		Below Background
Soil - All Depths	11K630221	Vanadium	1/1	mg/kg			25.2	25.2	25.2	D		25.2	m	31	0/1	5.2E+01	N		Below Background
Soil - All Depths	11K630221	Zinc	1/1	mg/kg			72.7	72.7	72.7	D		72.7	m	278	0/1	2.2E+03	N		Below Background
Soil - All Depths	11K630221	Benz(a)anthracene	1/1	mg/kg			0.059	0.059	0.059	D		0.059	m	0.3	0/1	5.6E-01	N		Below Background
Soil - All Depths	11K630221	Benzo(a)pyrene	1/1	mg/kg			0.064	0.064	0.064	D		0.064	m	0.34	0/1	5.6E-02	N		Below Background
Soil - All Depths	11K630221	Benzo(b)fluoranthene	1/1	mg/kg			0.057	0.057	0.057	D		0.057	m	0.31	0/1	5.6E-01	N		Below Background
Soil - All Depths	11K630221	Benzo(ghi)perylene	1/1	mg/kg			0.061	0.061	0.061	D		0.061	m	0.39	0/1		N		Below Background
Soil - All Depths	11K630221	Benzo(k)fluoranthene	1/1	mg/kg			0.058	0.058	0.058	D		0.058	m	0.29	0/1	5.6E+00	N		Below Background
Soil - All Depths	11K630221	Bis(2-ethylhexyl)phthalate	1/1	mg/kg			0.091	0.091	0.091	D		0.091	m	0.18	0/1	3.2E+01	N		Below Background
Soil - All Depths	11K630221	Chrysene	1/1	mg/kg			0.11	0.11	0.11	D		0.11	m	0.57	0/1	5.6E+01	N		Below Background
Soil - All Depths	11K630221	Fluoranthene	1/1	mg/kg			0.14	0.14	0.14	D		0.14	m	0.7	0/1	2.0E+02	N		Below Background
Soil - All Depths	11K630221	Indeno(1,2,3-cd)pyrene	1/1	mg/kg			0.052	0.052	0.052	D		0.052	m	0.35	0/1	5.6E-01	N		Below Background
Soil - All Depths	11K630221	Phenanthrene	1/1	mg/kg			0.048	0.048	0.048	D		0.048	m	0.28	0/1		N		Below Background
Soil - All Depths	11K630221	Pyrene	1/1	mg/kg			0.11	0.11	0.11	D		0.11	m	0.66	0/1	1.5E+02	N		Below Background
Soil - All Depths	11K630221	Actinium-227	1/1	pCi/g			0.29	0.29	0.29	D		0.29	m	0.82	0/1		N		Below Background
Soil - All Depths	11K630221	Cesium-137	1/1	pCi/g			0.21	0.21	0.21	D		0.21	m	0.57	0/1		N		Below Background
Soil - All Depths	11K630221	Potassium-40	1/1	pCi/g			16.05	16.05	16.1	D		16.1	m	16.8	0/1		N		Below Background
Soil - All Depths	11K630221	Radium-226	1/1	pCi/g			0.84	0.84	0.84	D		0.84	m	1.55	0/1		N		Below Background
Soil - All Depths	11K630221	Radium-228	1/1	pCi/g			0.9	0.9	0.9	D		0.9	m	1.24	0/1		N		Below Background
Soil - All Depths	11K630221	Thorium-228	1/1	pCi/g			0.91	0.91	0.91	D		0.91	m	2.04	0/1		N		Below Background
Soil - All Depths	11K630221	Thorium-230	1/1	pCi/g			12.13	12.13	12.1	D		12.1	m	2.89	1/1		Y	Quant.	
Soil - All Depths	11K630221	Thorium-232	1/1	pCi/g			0.75	0.75	0.75	D		0.75	m	1.83	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Aluminum	1/1	mg/kg			10400	10400	10400	D		10400	m	14700	0/1	7.5E+03	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Arsenic	1/1	mg/kg			16.3	16.3	16.3	D		16.3	m	18	0/1	3.8E-01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Barium	1/1	mg/kg			172	172	172	D		172	m	279	0/1	5.2E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Beryllium	1/1	mg/kg			0.65	0.65	0.65	D		0.65	m	0.83	0/1	1.5E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Boron	1/1	mg/kg			6.2	6.2	6.2	D		6.2	m	9.9	0/1	4.9E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Calcium	1/1	mg/kg			4320	4320	4320	D		4320	m	28900	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Chromium	1/1	mg/kg			16.3	16.3	16.3	D		16.3	m	17.3	0/1	3.0E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Cobalt	1/1	mg/kg			11.6	11.6	11.6	D		11.6	m	31.7	0/1	3.3E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Copper	1/1	mg/kg			20	20	20	D		20	m	19.4	1/1	2.8E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	11K630221	Iron	1/1	mg/kg			16600	16600	16600	D		16600	m	26600	0/1	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Lead	1/1	mg/kg			52.1	52.1	52.1	D		52.1	m	79.7	0/1	4.0E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Lithium	1/1	mg/kg			5.9	5.9	5.9	D		5.9	m	8.1	0/1	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Magnesium	1/1	mg/kg			2700	2700	2700	D		2700	m	18400	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Manganese	1/1	mg/kg			807	807	807	D		807	m	2830	0/1	3.1E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Molybdenum	1/1	mg/kg			1.6	1.6	1.6	D		1.6	m	22.7	0/1	3.7E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Nickel	1/1	mg/kg			20.7	20.7	20.7	D		20.7	m	33.9	0/1	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Potassium	1/1	mg/kg			1470	1470	1470	D		1470	m	1140	1/1		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	11K630221	Selenium	1/1	mg/kg			0.41	0.41	0.41	D		0.41	m	0.55	0/1	3.7E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Sodium	1/1	mg/kg			143	143	143	D		143	m	235	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Strontium	1/1	mg/kg			15.8	15.8	15.8	D		15.8	m	26	0/1	4.5E+03	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Titanium	1/1	mg/kg			189	189	189	D		189	m	269	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Vanadium	1/1	mg/kg			25.2	25.2	25.2	D		25.2	m	31	0/1	5.2E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Zinc	1/1	mg/kg			72.7	72.7	72.7	D		72.7	m	278	0/1	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Benz(a)anthracene	1/1	mg/kg			0.059	0.059	0.059	D		0.059	m	0.3	0/1	5.6E-01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Benzo(a)pyrene	1/1	mg/kg			0.064	0.064	0.064	D		0.064	m	0.34	0/1	5.6E-02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Benzo(b)fluoranthene	1/1	mg/kg			0.057	0.057	0.057	D		0.057	m	0.31	0/1	5.6E-01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Benzo(ghi)perylene	1/1	mg/kg			0.061	0.061	0.061	D		0.061	m	0.39	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Benzo(k)fluoranthene	1/1	mg/kg			0.058	0.058	0.058	D		0.058	m	0.29	0/1	5.6E+00	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Bis(2-ethylhexyl)phthalate	1/1	mg/kg			0.091	0.091	0.091	D		0.091	m	0.18	0/1	3.2E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Chrysene	1/1	mg/kg			0.11	0.11	0.11	D		0.11	m	0.57	0/1	5.6E+01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Fluoranthene	1/1	mg/kg			0.14	0.14	0.14	D		0.14	m	0.7	0/1	2.0E+02	N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 3 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<0.5 ft)	11K630221	Indeno(1,2,3-cd)pyrene	1/1	mg/kg			0.052	0.052	0.052	D		0.052	m	0.35	0/1	5.6E-01	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Phenanthrene	1/1	mg/kg			0.048	0.048	0.048	D		0.048	m	0.28	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Pyrene	1/1	mg/kg			0.11	0.11	0.11	D		0.11	m	0.66	0/1	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	11K630221	Actinium-227	1/1	pCi/g			0.29	0.29	0.29	D		0.29	m	0.82	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Cesium-137	1/1	pCi/g			0.21	0.21	0.21	D		0.21	m	0.57	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Potassium-40	1/1	pCi/g			16.05	16.05	16.1	D		16.1	m	16.8	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Radium-226	1/1	pCi/g			0.84	0.84	0.84	D		0.84	m	1.55	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Radium-228	1/1	pCi/g			0.9	0.9	0.9	D		0.9	m	1.24	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Thorium-228	1/1	pCi/g			0.91	0.91	0.91	D		0.91	m	2.04	0/1		N		Below Background
Surface Soil (<0.5 ft)	11K630221	Thorium-230	1/1	pCi/g			12.13	12.13	12.1	D		12.1	m	2.89	1/1		Y	Quant.	
Surface Soil (<0.5 ft)	11K630221	Thorium-232	1/1	pCi/g			0.75	0.75	0.75	D		0.75	m	1.83	0/1		N		Below Background
Soil - All Depths	Futura	Arsenic	1/1	mg/kg			320	320	320	D		320	m	18	1/1	3.8E-01	Y	Quant.	
Soil - All Depths	Futura	Barium	1/1	mg/kg			3480	3480	3480	D		3480	m	279	1/1	5.2E+02	Y	Quant.	
Soil - All Depths	Futura	Boron	1/1	mg/kg			182	182	182	D		182	m	9.9	1/1	4.9E+02	N		Max. detect < PRG
Soil - All Depths	Futura	Cadmium	4/14	mg/kg	0.5	0.6	1.3	15.5	1.85	D	3.73	3.73	u	0.62	4/14	3.7E+00	Y	Quant.	
Soil - All Depths	Futura	Cobalt	6/6	mg/kg			42.4	14000	2460	X	7110	7110	u	31.7	6/6	3.3E+02	Y	Qual.	
Soil - All Depths	Futura	Copper	2/2	mg/kg			401	9090	4750	D	32200	9090	m	19.4	2/2	2.8E+02	Y	Qual.	
Soil - All Depths	Futura	Lead	1/1	mg/kg			529	529	529	D		529	m	79.7	1/1	4.0E+01	Y	Qual.	
Soil - All Depths	Futura	Magnesium	6/6	mg/kg			7360	43400	23400	N	35500	35500	u	18400	4/6		N		Essential Nutrient (low conc.)
Soil - All Depths	Futura	Molybdenum	5/14	mg/kg	9.9	12.95	20.9	947	83	D	201	201	u	22.7	4/14	3.7E+01	Y	Quant.	
Soil - All Depths	Futura	Nickel	1/1	mg/kg			17300	17300	17300	D		17300	m	33.9	1/1	1.5E+02	Y	Quant.	
Soil - All Depths	Futura	Selenium	1/14	mg/kg	9.8	12.95	1040	1040	84.6	D	215	215	u	0.55	1/14	3.7E+01	Y	Quant.	
Soil - All Depths	Futura	Vanadium	1/1	mg/kg			2180	2180	2180	D		2180	m	31	1/1	5.2E+01	Y	Quant.	
Soil - All Depths	Futura	Toluene	3/3	mg/kg			0.0015	0.015	0.00607	D	0.0191	0.015	m	0.11	0/3	5.2E+02	N		Below Background
Soil - All Depths	Futura	Trichlorofluoromethane	1/1	mg/kg			0.0013	0.0013	0.0013	D		0.0013	m		NA	3.8E+01	N		Max. detect < PRG
Soil - All Depths	Futura	Radium-226	359/361	pCi/g	1	1	0.4	2300	29.7	X	46	46	u	1.55	189/361		Y	Quant.	
Soil - All Depths	Futura	Thorium-230	172/173	pCi/g	1.2	1.2	0.5	2000	68.9	X	102	102	u	2.89	99/173		Y	Quant.	
Soil - All Depths	Futura	Thorium-232	333/361	pCi/g	1	6	0.7	26	2.17	X	2.33	2.33	u	1.83	172/361		Y	Quant.	
Soil - All Depths	Futura	Uranium-238	48/361	pCi/g	3	37	2.3	2500	37	D	54.2	54.2	u	2.02	48/361		Y	Quant.	
Soil - All Depths	HISS	Nitrate	1/1	mg/kg			1030	1030	1030	D		1030	m		NA		Y	Quant.	
Soil - All Depths	HISS	Sulfate	1/1	mg/kg			824	824	824	D		824	m		NA		Y	Qual.	
Soil - All Depths	HISS	Antimony	1/13	mg/kg	5.4	7.8	242	242	24.8	D	57	57	u	5.2	1/13	3.0E+00	Y	Quant.	
Soil - All Depths	HISS	Arsenic	2/2	mg/kg			51.3	1010	531	D	3560	1010	m	18	2/2	3.8E-01	Y	Quant.	
Soil - All Depths	HISS	Barium	2/2	mg/kg			3010	4360	3690	D	7950	4360	m	279	2/2	5.2E+02	Y	Quant.	
Soil - All Depths	HISS	Boron	1/1	mg/kg			1010	1010	1010	D		1010	m	9.9	1/1	4.9E+02	Y	Quant.	
Soil - All Depths	HISS	Cadmium	5/13	mg/kg	0.45	0.65	1.2	26.6	2.91	D	6.44	6.44	u	0.62	5/13	3.7E+00	Y	Quant.	
Soil - All Depths	HISS	Cobalt	6/6	mg/kg			125	1470	374	X	817	817	u	31.7	6/6	3.3E+02	Y	Qual.	
Soil - All Depths	HISS	Copper	4/4	mg/kg			109	946	334	D	815	815	u	19.4	4/4	2.8E+02	Y	Qual.	
Soil - All Depths	HISS	Lead	1/1	mg/kg			464	464	464	D		464	m	79.7	1/1	4.0E+01	Y	Qual.	
Soil - All Depths	HISS	Magnesium	4/4	mg/kg			7690	11400	9520	D	11700	11400	m	18400	0/4		N		Below Background
Soil - All Depths	HISS	Molybdenum	4/13	mg/kg	9.05	13.05	19.1	1100	99.8	D	248	248	u	22.7	2/13	3.7E+01	Y	Quant.	
Soil - All Depths	HISS	Nickel	1/1	mg/kg			1780	1780	1780	D		1780	m	33.9	1/1	1.5E+02	Y	Quant.	
Soil - All Depths	HISS	Selenium	2/13	mg/kg	9	13.05	41.1	1020	91.1	D	229	229	u	0.55	2/13	3.7E+01	Y	Quant.	
Soil - All Depths	HISS	Silver	1/1	mg/kg			18.3	18.3	18.3	D		18.3	m	2.6	1/1	3.7E+01	N		Max. detect < PRG
Soil - All Depths	HISS	Thallium	2/13	mg/kg	9	13.05	51.8	959	87.3	D	217	217	u	0	2/13	6.0E-01	Y	Quant.	
Soil - All Depths	HISS	Vanadium	1/1	mg/kg			712	712	712	D		712	m	31	1/1	5.2E+01	Y	Quant.	
Soil - All Depths	HISS	Zinc	1/1	mg/kg			308	308	308	D		308	m	278	1/1	2.2E+03	N		Max. detect < PRG
Soil - All Depths	HISS	Toluene	2/2	mg/kg			0.0028	0.0029	0.00285	D	0.00317	0.0029	m	0.11	0/2	5.2E+02	N		Below Background
Soil - All Depths	HISS	Actinium-227	8/21	pCi/g	-0.01	0.58	0.29	5.36	1.06	D	1.68	1.68	u	0.82	5/21		Y	Quant.	
Soil - All Depths	HISS	Cesium-137	1/21	pCi/g	-0.05	0.05	0.1	0.1	0.00667	D	0.0179	0.0179	u	0.57	0/21		N		Below Background
Soil - All Depths	HISS	Potassium-40	9/9	pCi/g			13.67	16.89	15.8	N	16.4	16.4	u	16.8	1/9		Y	Quant.	
Soil - All Depths	HISS	Radium-226	537/544	pCi/g	1	2	0.5	700	6.91	X	9.6	9.6	u	1.55	235/544		Y	Quant.	

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 4 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Soil - All Depths	HISS	Radium-228	20/21	pCi/g	0.78	0.78	0.29	1.16	0.915	X	0.986	0.986	u	1.24	0/21		N		Below Background
Soil - All Depths	HISS	Thorium-228	20/21	pCi/g	0.78	0.78	0.29	1.16	0.915	X	0.986	0.986	u	2.04	0/21		N		Below Background
Soil - All Depths	HISS	Thorium-230	215/228	pCi/g	-3.76	20.03	0.8	830	37.9	Z	51.9	51.9	u	2.89	92/228		Y	Quant.	
Soil - All Depths	HISS	Thorium-232	481/544	pCi/g	0.78	4	0.29	5	1.73	X	1.79	1.79	u	1.83	193/544		Y	Quant.	
Soil - All Depths	HISS	Uranium-238	62/543	pCi/g	-0.49	55	4	800	13.9	D	17.1	17.1	u	2.02	62/543		Y	Quant.	
Surface Soil (<5 ft)	IA-1	Magnesium	2/2	mg/kg			6110	10200	8160	D	21100	10200	m	18400	0/2		N		Below Background
Surface Soil (<5 ft)	IA-1	Molybdenum	1/2	mg/kg	8.6	8.6	17.7	17.7	13.2	D	41.9	17.7	m	22.7	0/2	3.7E+01	N		Below Background
Surface Soil (<5 ft)	IA-1	TOX	1/2	UG/G	30.35	30.35	56.9	56.9	43.6	D	127	56.9	m		NA		Y	Qual.	
Surface Soil (<5 ft)	IA-1	PCB-1254	1/2	mg/kg	0.0205	0.0205	0.26	0.26	0.14	D	0.896	0.26	m	0	1/2	9.7E-02	Y	Quant.	
Surface Soil (<5 ft)	IA-1	Toluene	2/2	mg/kg			0.003	0.0031	0.00305	D	0.00337	0.0031	m	0.11	0/2	5.2E+02	N		Below Background
Surface Soil (<5 ft)	IA-1	Radium-226	7/13	pCi/g	1.6	3.9	1	2700	216	X	585	585	u	1.55	5/13		Y	Quant.	
Surface Soil (<5 ft)	IA-1	Thorium-230	4/4	pCi/g			1.8	110	33.7	D	94.3	94.3	u	2.89	3/4		Y	Quant.	
Surface Soil (<5 ft)	IA-1	Thorium-232	6/13	pCi/g	1	4.3	1.1	63	7.14	D	15.5	15.5	u	1.83	2/13		Y	Quant.	
Surface Soil (<5 ft)	IA-1	Uranium-238	3/13	pCi/g	5	78.4	40	1200	128	D	287	287	u	2.02	3/13		Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Aluminum	4/4	mg/kg			8200	9100	8510	D	8990	8990	u	14700	0/4	7.5E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Arsenic	4/4	mg/kg			4.7	5.9	5.45	D	6.13	5.9	m	18	0/4	3.8E-01	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Barium	4/4	mg/kg			127	149	140	D	151	149	m	279	0/4	5.2E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Beryllium	4/4	mg/kg			0.56	0.63	0.585	D	0.622	0.622	u	0.83	0/4	1.5E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Boron	4/4	mg/kg			5.8	7.7	6.48	D	7.48	7.48	u	9.9	0/4	4.9E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Calcium	4/4	mg/kg			6680	10200	8100	D	10100	10100	u	28900	0/4		N		Below Background
Surface Soil (<0.5 ft)	IA-10	Chromium	4/4	mg/kg			15.5	16.3	15.9	D	16.3	16.3	u	17.3	0/4	3.0E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Cobalt	4/4	mg/kg			6.5	7.2	6.73	D	7.11	7.11	u	31.7	0/4	3.3E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Copper	4/4	mg/kg			31.2	70.9	43.6	D	65.2	65.2	u	19.4	4/4	2.8E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Iron	4/4	mg/kg			14100	15900	14700	D	15700	15700	u	26600	0/4	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Lead	4/4	mg/kg			52.8	73.5	60.2	D	71	71	u	79.7	0/4	4.0E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Lithium	4/4	mg/kg			5.1	5.9	5.38	D	5.8	5.8	u	8.1	0/4	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Magnesium	4/4	mg/kg			3320	5140	4030	D	5060	5060	u	18400	0/4		N		Below Background
Surface Soil (<0.5 ft)	IA-10	Manganese	4/4	mg/kg			407	577	512	D	600	577	m	2830	0/4	3.1E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Molybdenum	3/4	mg/kg	0.55	0.55	1.2	1.6	1.24	D	1.82	1.6	m	22.7	0/4	3.7E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Nickel	4/4	mg/kg			14	17.1	15.5	D	17.1	17.1	u	33.9	0/4	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Potassium	4/4	mg/kg			968	1360	1170	D	1360	1360	u	1140	3/4		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-10	Selenium	4/4	mg/kg			0.44	0.7	0.543	D	0.687	0.687	u	0.55	2/4	3.7E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Sodium	4/4	mg/kg			91.3	101	95.7	D	101	101	u	235	0/4		N		Below Background
Surface Soil (<0.5 ft)	IA-10	Strontium	4/4	mg/kg			18.3	22.7	20.1	D	22.3	22.3	u	26	0/4	4.5E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Titanium	4/4	mg/kg			124	168	148	D	169	168	m	269	0/4		N		Below Background
Surface Soil (<0.5 ft)	IA-10	Vanadium	4/4	mg/kg			19.1	21.3	20.1	D	21.4	21.3	m	31	0/4	5.2E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Zinc	4/4	mg/kg			75	88.7	83	D	90.9	88.7	m	278	0/4	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Anthracene	2/4	mg/kg	0.21	0.215	0.046	0.14	0.153	D	0.246	0.14	m	0.031	2/4	1.4E+03	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Benz(a)anthracene	4/4	mg/kg			0.06	0.76	0.325	D	0.696	0.696	u	0.3	2/4	5.6E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Benzo(a)pyrene	4/4	mg/kg			0.066	0.79	0.349	D	0.734	0.734	u	0.34	2/4	5.6E-02	Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Benzo(b)fluoranthene	4/4	mg/kg			0.065	0.69	0.316	D	0.647	0.647	u	0.31	2/4	5.6E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Benzo(ghi)perylene	4/4	mg/kg			0.071	0.95	0.435	D	0.903	0.903	u	0.39	2/4		Y	Qual.	
Surface Soil (<0.5 ft)	IA-10	Benzo(k)fluoranthene	4/4	mg/kg			0.059	0.65	0.292	D	0.607	0.607	u	0.29	2/4	5.6E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Bis(2-ethylhexyl)phthalate	4/4	mg/kg			0.058	0.84	0.375	D	0.764	0.764	u	0.18	3/4	3.2E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Butyl benzyl phthalate	2/4	mg/kg	0.215	0.215	0.045	0.12	0.149	D	0.246	0.12	m	0.25	0/4	9.3E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-10	Carbazole	1/4	mg/kg	0.21	0.215	0.048	0.048	0.172	D	0.269	0.048	m	0	1/4	2.2E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Chrysene	4/4	mg/kg			0.12	1.3	0.58	D	1.21	1.21	u	0.57	2/4	5.6E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Fluoranthene	4/4	mg/kg			0.12	1.3	0.583	D	1.2	1.2	u	0.7	1/4	2.0E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Indeno(1,2,3-cd)pyrene	4/4	mg/kg			0.059	0.82	0.372	D	0.777	0.777	u	0.35	2/4	5.6E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Phenanthrene	4/4	mg/kg			0.071	0.76	0.313	D	0.682	0.682	u	0.28	2/4		Y	Qual.	
Surface Soil (<0.5 ft)	IA-10	Pyrene	4/4	mg/kg			0.14	1.6	0.693	D	1.47	1.47	u	0.66	2/4	1.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-10	Cesium-137	4/4	pCi/g			0.13	0.21	0.163	D	0.203	0.203	u	0.57	0/4		N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 5 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<0.5 ft)	IA-10	Potassium-40	4/4	pCi/g			14.99	16.54	15.7	D	16.5	16.5	u	16.8	0/4		N		Below Background
Surface Soil (<0.5 ft)	IA-10	Radium-226	95/119	pCi/g	0	2	0.3	2.8	1.19	Z	1.29	1.29	u	1.55	38/119		Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Radium-228	4/4	pCi/g			0.88	0.94	0.908	D	0.94	0.94	u	1.24	0/4		N		Below Background
Surface Soil (<0.5 ft)	IA-10	Thorium-228	4/4	pCi/g			1.23	2.29	1.71	D	2.23	2.23	u	2.04	1/4		Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Thorium-230	112/121	pCi/g	0	0.8	0.4	29	3.8	Z	4.44	4.44	u	2.89	59/121		Y	Quant.	
Surface Soil (<0.5 ft)	IA-10	Thorium-232	88/119	pCi/g	0	2.8	0.5	4	1.39	Z	1.52	1.52	u	1.83	35/119		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Aluminum	6/6	mg/kg			8920	12900	10600	L	12000	12000	u	14700	0/6	7.5E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Arsenic	6/6	mg/kg			5.1	19.9	11.6	L	24.9	19.9	m	18	1/6	3.8E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Barium	6/6	mg/kg			105	181	150	N	172	172	u	279	0/6	5.2E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Beryllium	3/6	mg/kg	0.335	0.37	0.63	0.78	0.521	D	0.682	0.682	u	0.83	0/6	1.5E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Boron	6/6	mg/kg			5.5	9.2	7.6	N	8.65	8.65	u	9.9	0/6	4.9E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Calcium	6/6	mg/kg			3110	68900	15000	X	36800	36800	u	28900	1/6		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-13	Chromium	6/6	mg/kg			11.9	18.3	15.5	N	17.3	17.3	u	17.3	1/6	3.0E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	Cobalt	6/6	mg/kg			6.7	13.3	9.87	L	13.1	13.1	u	31.7	0/6	3.3E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Copper	6/6	mg/kg			19.3	29.7	23	L	27.1	27.1	u	19.4	5/6	2.8E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	Iron	6/6	mg/kg			12400	21000	17200	N	19700	19700	u	26600	0/6	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Lead	6/6	mg/kg			17.2	137	57.3	L	214	137	m	79.7	1/6	4.0E+01	Y	Qual.	
Surface Soil (<0.5 ft)	IA-13	Lithium	6/6	mg/kg			5.2	7.4	6.35	L	7.36	7.36	u	8.1	0/6	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Magnesium	6/6	mg/kg			1960	9210	3920	X	6090	6090	u	18400	0/6		N		Below Background
Surface Soil (<0.5 ft)	IA-13	Manganese	6/6	mg/kg			463	743	615	N	712	712	u	2830	0/6	3.1E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Mercury	1/6	mg/kg	0.03	0.035	0.08	0.08	0.04	D	0.0562	0.0562	u	0.69	0/6	2.2E+00	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Molybdenum	4/6	mg/kg	0.47	0.55	1.2	2.1	1.25	D	1.8	1.8	u	22.7	0/6	3.7E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Nickel	6/6	mg/kg			15.1	26.2	19.6	L	23.6	23.6	u	33.9	0/6	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Potassium	6/6	mg/kg			1230	1730	1470	N	1620	1620	u	1140	6/6		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-13	Selenium	3/6	mg/kg	0.165	0.195	0.66	0.78	0.447	D	0.692	0.692	u	0.55	3/6	3.7E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	Sodium	6/6	mg/kg			66.7	145	114	N	139	139	u	235	0/6		N		Below Background
Surface Soil (<0.5 ft)	IA-13	Strontium	6/6	mg/kg			14.9	79.4	30.6	X	50.5	50.5	u	26	1/6	4.5E+03	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	Thallium	1/6	mg/kg	0.345	0.95	1.4	1.4	0.734	D	1.05	1.05	u	0	1/6	6.0E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Titanium	6/6	mg/kg			155	303	221	L	305	303	m	269	2/6		Y	Qual.	
Surface Soil (<0.5 ft)	IA-13	Uranium	1/6	mg/kg	4.3	9.05	10.2	10.2	7.32	D	9.31	9.31	u	0	1/6		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Vanadium	6/6	mg/kg			23.7	30.1	27.3	L	29.8	29.8	u	31	0/6	5.2E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Zinc	6/6	mg/kg			56.6	81.6	69.9	N	78.8	78.8	u	278	0/6	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Benz(a)anthracene	4/6	mg/kg	0.21	0.245	0.044	0.21	0.151	D	0.218	0.21	m	0.3	0/6	5.6E-01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Benzo(a)pyrene	4/6	mg/kg	0.21	0.245	0.049	0.12	0.137	D	0.199	0.12	m	0.34	0/6	5.6E-02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Benzo(b)fluoranthene	4/6	mg/kg	0.21	0.245	0.046	0.26	0.164	D	0.235	0.235	u	0.31	0/6	5.6E-01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Benzo(ghi)perylene	3/6	mg/kg	0.21	0.245	0.055	0.13	0.163	D	0.222	0.13	m	0.39	0/6		N		Below Background
Surface Soil (<0.5 ft)	IA-13	Benzo(k)fluoranthene	3/6	mg/kg	0.21	0.245	0.044	0.092	0.15	D	0.218	0.092	m	0.29	0/6	5.6E+00	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Bis(2-ethylhexyl)phthalate	3/6	mg/kg	0.21	0.245	0.11	0.13	0.17	D	0.219	0.13	m	0.18	0/6	3.2E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Butyl benzyl phthalate	1/6	mg/kg	0.205	0.245	0.061	0.061	0.192	D	0.246	0.061	m	0.25	0/6	9.3E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Chrysene	4/6	mg/kg	0.21	0.245	0.084	0.19	0.18	D	0.224	0.19	m	0.57	0/6	5.6E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Fluoranthene	6/6	mg/kg			0.094	0.3	0.179	N	0.25	0.25	u	0.7	0/6	2.0E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Indeno(1,2,3-cd)pyrene	4/6	mg/kg	0.21	0.245	0.046	0.35	0.177	D	0.269	0.269	u	0.35	0/6	5.6E-01	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Phenanthrene	3/6	mg/kg	0.205	0.245	0.058	0.094	0.149	D	0.215	0.094	m	0.28	0/6		N		Below Background
Surface Soil (<0.5 ft)	IA-13	Pyrene	4/6	mg/kg	0.21	0.245	0.098	0.32	0.216	D	0.275	0.275	u	0.66	0/6	1.5E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	1,1,2,2-Tetrachloroethane	1/6	mg/kg	0.003	0.0035	0.006	0.006	0.00358	D	0.00457	0.00457	u	0	1/6	3.6E-01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	1,1,2-Trichloroethane	1/6	mg/kg	0.003	0.0035	0.003	0.003	0.00308	D	0.00325	0.003	m	0	1/6	8.2E-01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	2-Butanone	1/6	mg/kg	0.006	0.0075	0.014	0.014	0.00783	D	0.0104	0.0104	u	0.023	0/6	6.9E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	4-Methyl-2-pentanone	1/6	mg/kg	0.006	0.0075	0.011	0.011	0.00733	D	0.00887	0.00887	u	0	1/6	7.5E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	Bromoform	1/6	mg/kg	0.003	0.0035	0.004	0.004	0.00325	D	0.00359	0.00359	u	0	1/6	5.6E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-13	Toluene	1/6	mg/kg	0.003	0.0035	0.002	0.002	0.00292	D	0.00332	0.002	m	0.11	0/6	5.2E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-13	Actinium-227	26/38	pCi/g	0.02	0.19	0.2	0.71	0.328	X	0.382	0.382	u	0.82	0/38		N		Below Background
Surface Soil (<0.5 ft)	IA-13	Americium-241	1/38	pCi/g	-0.02	0.07	0.06	0.06	0.0303	D	0.0358	0.0358	u	0	1/38		N		<5% detected
Surface Soil (<0.5 ft)	IA-13	Cesium-137	35/37	pCi/g	0	0	0.05	0.55	0.242	Z	0.281	0.281	u	0.57	0/37		N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 6 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<0.5 ft)	IA-13	Potassium-40	37/37	pCi/g			3.69	17.61	14.2	X	15.2	15.2	u	16.8	4/37		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Protactinium-231	2/38	pCi/g	-0.34	1.03	1.55	1.92	0.391	D	0.514	0.514	u	1.13	2/38		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Radium-226	110/111	pCi/g	1	1	0.54	3.3	1.48	X	1.59	1.59	u	1.55	49/111		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Radium-228	37/37	pCi/g			0.14	1.13	0.844	X	0.911	0.911	u	1.24	0/37		N		Below Background
Surface Soil (<0.5 ft)	IA-13	Thorium-228	38/38	pCi/g			0.39	2.14	1.11	N	1.2	1.2	u	2.04	1/38		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Thorium-230	108/109	pCi/g	1.2	1.2	0.42	110	11.4	L	15.4	15.4	u	2.89	83/109		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Thorium-232	103/112	pCi/g	1	1	0.44	4	1.44	L	1.54	1.54	u	1.83	27/112		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Uranium-235	11/38	pCi/g	-0.01	0.26	0.2	0.51	0.168	D	0.195	0.195	u	0.25	7/38		Y	Quant.	
Surface Soil (<0.5 ft)	IA-13	Uranium-238	3/112	pCi/g	0.26	13	2.8	7	3.58	D	4.03	4.03	u	2.02	3/112		N		<5% detected
Surface Soil (<5 ft)	IA-2	Arsenic	2/2	mg/kg			205	237	221	D	322	237	m	18	2/2	3.8E-01	Y	Quant.	
Surface Soil (<5 ft)	IA-2	Cadmium	4/12	mg/kg	0.45	0.55	1	5.9	1.38	D	2.31	2.31	u	0.62	4/12	3.7E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-2	Cobalt	4/4	mg/kg			46.7	228	144	D	245	228	m	31.7	4/4	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-2	Copper	3/3	mg/kg			187	440	307	D	521	440	m	19.4	3/3	2.8E+02	Y	Qual.	
Surface Soil (<5 ft)	IA-2	Magnesium	5/5	mg/kg			8180	24900	12700	L	25500	24900	m	18400	1/5		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-2	Molybdenum	3/12	mg/kg	8.75	11.25	30.3	151	32.5	D	57.6	57.6	u	22.7	3/12	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-2	Vanadium	2/2	mg/kg			782	862	822	D	1070	862	m	31	2/2	5.2E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-2	Toluene	5/5	mg/kg			0.0025	0.0104	0.00716	N	0.0104	0.0104	u	0.11	0/5	5.2E+02	N		Below Background
Surface Soil (<5 ft)	IA-2	Actinium-227	11/13	pCi/g	0.1	0.19	0.18	130.4	13.1	X	30.9	30.9	u	0.82	5/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Americium-241	4/13	pCi/g	0	0.11	0.06	2.58	0.333	D	0.687	0.687	u	0	4/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Cesium-137	6/13	pCi/g	-0.04	0.04	0.03	3.09	0.278	D	0.697	0.697	u	0.57	1/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Potassium-40	12/13	pCi/g	8.43	8.43	5.69	17.74	13	N	14.8	14.8	u	16.8	2/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Protactinium-231	5/13	pCi/g	-0.03	0.7	2.66	179.3	17.1	D	41.4	41.4	u	1.13	5/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Radium-226	32/53	pCi/g	1.5	5	0.85	590	38.6	X	68.2	68.2	u	1.55	19/53		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Radium-228	13/13	pCi/g			0.38	4.82	1.19	X	1.74	1.74	u	1.24	2/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Thorium-228	13/13	pCi/g			0.5	4.82	1.39	X	1.92	1.92	u	2.04	1/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Thorium-230	30/30	pCi/g			0	14070	584	Z	1380	1380	u	2.89	25/30		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Thorium-232	23/53	pCi/g	2	13.4	0.44	4.82	2.71	D	3.15	3.15	u	1.83	6/53		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Uranium-235	10/13	pCi/g	-0.03	0.12	0.25	37.21	4.65	Z	9.68	9.68	u	0.25	9/13		Y	Quant.	
Surface Soil (<5 ft)	IA-2	Uranium-238	14/54	pCi/g	0.33	304	6.02	706	67.8	D	98.1	98.1	u	2.02	14/54		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Aluminum	3/3	mg/kg			13100	23200	17000	D	26200	23200	m	14700	1/3	7.5E+03	Y	Qual.	
Surface Soil (<5 ft)	IA-3	Antimony	2/7	mg/kg	1.65	6	5.3	53.2	11.3	D	24.9	24.9	u	5.2	2/7	3.0E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Arsenic	3/3	mg/kg			7.2	9	8.2	D	9.75	9	m	18	0/3	3.8E-01	N		Below Background
Surface Soil (<5 ft)	IA-3	Barium	3/3	mg/kg			152	209	178	D	227	209	m	279	0/3	5.2E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Beryllium	3/3	mg/kg			0.84	2.4	1.36	D	2.88	2.4	m	0.83	3/3	1.5E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Boron	3/3	mg/kg			8.4	9.6	9.07	D	10.1	9.6	m	9.9	0/3	4.9E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Cadmium	2/7	mg/kg	0.14	0.5	0.52	50.4	7.52	D	21.4	21.4	u	0.62	1/7	3.7E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Calcium	3/3	mg/kg			4860	29500	13400	D	36900	29500	m	28900	1/3		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-3	Chromium	4/4	mg/kg			18.6	3240	830	D	2720	2720	u	17.3	4/4	3.0E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Cobalt	3/3	mg/kg			8.3	11.8	10.1	D	13.1	11.8	m	31.7	0/3	3.3E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Copper	3/3	mg/kg			14.1	31.8	21.8	D	37.1	31.8	m	19.4	2/3	2.8E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Iron	3/3	mg/kg			19400	26800	21900	D	29100	26800	m	26600	1/3	2.2E+03	N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-3	Lead	4/4	mg/kg			19.6	1200	336	D	1010	1010	u	79.7	2/4	4.0E+01	Y	Qual.	
Surface Soil (<5 ft)	IA-3	Lithium	3/3	mg/kg			8.9	14.6	11.6	D	16.4	14.6	m	8.1	3/3	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Magnesium	5/5	mg/kg			3730	14700	7600	L	20000	14700	m	18400	0/5		N		Below Background
Surface Soil (<5 ft)	IA-3	Manganese	3/3	mg/kg			552	1330	852	D	1560	1330	m	2830	0/3	3.1E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Molybdenum	3/7	mg/kg	0.415	10.05	2.5	58.9	13.3	D	28.3	28.3	u	22.7	1/7	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Nickel	3/3	mg/kg			20.2	66.9	36.4	D	81	66.9	m	33.9	1/3	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Potassium	3/3	mg/kg			1320	2070	1650	D	2300	2070	m	1140	3/3		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-3	Sodium	3/3	mg/kg			124	382	239	D	460	382	m	235	1/3		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-3	Strontium	3/3	mg/kg			24.1	53.2	42.7	D	70	53.2	m	26	2/3	4.5E+03	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Thallium	2/7	mg/kg	0.8	10.05	1.2	1.4	5.94	D	9.27	1.4	m	0	2/7	6.0E-01	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Titanium	3/3	mg/kg			260	416	321	D	462	416	m	269	2/3		Y	Qual.	

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 7 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<5 ft)	IA-3	Uranium	2/3	mg/kg	6.9	6.9	15.6	129	50.5	D	165	129	m	0	2/3		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Vanadium	3/3	mg/kg			35.6	57.2	43.6	D	63.6	57.2	m	31	3/3	5.2E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Zinc	4/4	mg/kg			49.8	4330	1130	D	3640	3640	u	278	1/4	2.2E+03	Y	Quant.	
Surface Soil (<5 ft)	IA-3	MCPP	1/3	mg/kg	4.5	4.7	11	11	6.73	D	13	11	m	0	1/3	5.5E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-3	Benz(a)anthracene	2/3	mg/kg	0.19	0.19	0.09	0.18	0.153	D	0.246	0.18	m	0.3	0/3	5.6E-01	N		Below Background
Surface Soil (<5 ft)	IA-3	Benzo(a)pyrene	2/3	mg/kg	0.19	0.19	0.077	0.18	0.149	D	0.254	0.18	m	0.34	0/3	5.6E-02	N		Below Background
Surface Soil (<5 ft)	IA-3	Benzo(b)fluoranthene	1/3	mg/kg	0.185	0.19	0.083	0.083	0.153	D	0.254	0.083	m	0.31	0/3	5.6E-01	N		Below Background
Surface Soil (<5 ft)	IA-3	Benzo(ghi)perylene	1/3	mg/kg	0.19	0.195	0.19	0.19	0.192	D	0.197	0.19	m	0.39	0/3		N		Below Background
Surface Soil (<5 ft)	IA-3	Benzo(k)fluoranthene	1/3	mg/kg	0.19	0.195	0.066	0.066	0.15	D	0.274	0.066	m	0.29	0/3	5.6E+00	N		Below Background
Surface Soil (<5 ft)	IA-3	Butyl benzyl phthalate	1/3	mg/kg	0.185	0.19	0.1	0.1	0.158	D	0.244	0.1	m	0.25	0/3	9.3E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Chrysene	1/3	mg/kg	0.19	0.195	0.21	0.21	0.198	D	0.216	0.21	m	0.57	0/3	5.6E+01	N		Below Background
Surface Soil (<5 ft)	IA-3	Fluoranthene	2/3	mg/kg	0.19	0.19	0.1	0.31	0.2	D	0.378	0.31	m	0.7	0/3	2.0E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Indeno(1,2,3-cd)pyrene	2/3	mg/kg	0.19	0.19	0.089	0.18	0.153	D	0.247	0.18	m	0.35	0/3	5.6E-01	N		Below Background
Surface Soil (<5 ft)	IA-3	Phenanthrene	2/3	mg/kg	0.19	0.19	0.042	0.19	0.141	D	0.285	0.19	m	0.28	0/3		N		Below Background
Surface Soil (<5 ft)	IA-3	Pyrene	2/3	mg/kg	0.19	0.19	0.046	0.27	0.169	D	0.36	0.27	m	0.66	0/3	1.5E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	1,2-Dichloroethene	1/3	mg/kg	0.003	0.003	0.003	0.003	0.003	D	0.003	0.003	u	0	1/3		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Dimethylbenzene	1/3	mg/kg	0.003	0.003	0.01	0.01	0.00533	D	0.0121	0.01	m	0	1/3		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Methylene chloride	1/3	mg/kg	0.003	0.004	0.13	0.13	0.0457	D	0.169	0.13	m	0.007	1/3	8.5E+00	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Toluene	3/6	mg/kg	0.003	0.003	0.0015	0.055	0.0176	D	0.037	0.037	u	0.11	0/6	5.2E+02	N		Below Background
Surface Soil (<5 ft)	IA-3	Trichloroethene	1/3	mg/kg	0.003	0.003	0.005	0.005	0.00367	D	0.00561	0.005	m	0	1/3	2.7E+00	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-3	Actinium-227	11/15	pCi/g	0.12	0.24	0.19	47.16	4.99	X	10.7	10.7	u	0.82	7/15		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Americium-241	1/15	pCi/g	-0.02	0.37	2.09	2.09	0.185	D	0.428	0.428	u	0	1/15		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Cesium-137	10/15	pCi/g	-0.01	0.06	0.03	0.12	0.0507	Z	0.0662	0.0662	u	0.57	0/15		N		Below Background
Surface Soil (<5 ft)	IA-3	Potassium-40	15/15	pCi/g			7.02	17.01	12.2	L	14.2	14.2	u	16.8	2/15		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Protactinium-231	6/15	pCi/g	-0.06	0.46	1.56	31.66	3.87	D	7.86	7.86	u	1.13	6/15		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Radium-226	59/74	pCi/g	1.5	4.7	0.7	208	10.1	X	15.9	15.9	u	1.55	34/74		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Radium-228	15/15	pCi/g			0.33	1.81	0.846	L	1.1	1.1	u	1.24	2/15		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Thorium-228	15/15	pCi/g			0.34	1.81	1.04	N	1.23	1.23	u	2.04	0/15		N		Below Background
Surface Soil (<5 ft)	IA-3	Thorium-230	36/36	pCi/g			1.09	5335	226	X	482	482	u	2.89	33/36		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Thorium-232	51/74	pCi/g	0.5	7.5	0.4	5	1.96	L	2.27	2.27	u	1.83	9/74		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Uranium-235	11/15	pCi/g	-0.02	0.16	0.22	8.21	1.46	Z	2.61	2.61	u	0.25	10/15		Y	Quant.	
Surface Soil (<5 ft)	IA-3	Uranium-238	18/74	pCi/g	0.9	173.4	3.04	270	23.6	D	31.4	31.4	u	2.02	18/74		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Fluoride	2/2	mg/kg			9.58	43.3	26.4	D	133	43.3	m		NA	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Sulfide	1/2	mg/kg	13.6	13.6	21	21	17.3	D	40.7	21	m		NA		Y	Qual.	
Surface Soil (<5 ft)	IA-4	Aluminum	2/2	mg/kg			18500	19000	18800	D	20300	19000	m	14700	2/2	7.5E+03	Y	Qual.	
Surface Soil (<5 ft)	IA-4	Arsenic	3/3	mg/kg			8.5	50.8	22.9	D	63.6	50.8	m	18	1/3	3.8E-01	Y	Quant.	
Surface Soil (<5 ft)	IA-4	Barium	4/4	mg/kg			266	3750	1340	D	3270	3270	u	279	3/4	5.2E+02	Y	Quant.	
Surface Soil (<5 ft)	IA-4	Beryllium	2/2	mg/kg			0.98	1	0.99	D	1.05	1	m	0.83	2/2	1.5E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Boron	1/2	mg/kg	4.45	4.45	11.9	11.9	8.18	D	31.7	11.9	m	9.9	1/2	4.9E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Cadmium	1/7	mg/kg	0.155	0.55	4.5	4.5	0.995	D	2.14	2.14	u	0.62	1/7	3.7E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-4	Calcium	2/2	mg/kg			3610	3920	3770	D	4740	3920	m	28900	0/2		N		Below Background
Surface Soil (<5 ft)	IA-4	Chromium	2/2	mg/kg			20.6	20.8	20.7	D	21.3	20.8	m	17.3	2/2	3.0E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Cobalt	7/7	mg/kg			4.7	1510	313	L	120000	1510	m	31.7	5/7	3.3E+02	Y	Qual.	
Surface Soil (<5 ft)	IA-4	Copper	4/4	mg/kg			13.1	876	283	D	762	762	u	19.4	3/4	2.8E+02	Y	Qual.	
Surface Soil (<5 ft)	IA-4	Iron	2/2	mg/kg			22500	24200	23400	D	28700	24200	m	26600	0/2	2.2E+03	N		Below Background
Surface Soil (<5 ft)	IA-4	Lead	4/4	mg/kg			8.6	408	176	D	406	406	u	79.7	2/4	4.0E+01	Y	Qual.	
Surface Soil (<5 ft)	IA-4	Lithium	2/2	mg/kg			8.9	9.6	9.25	D	11.5	9.6	m	8.1	2/2	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Magnesium	3/3	mg/kg			3510	13200	6820	D	16100	13200	m	18400	0/3		N		Below Background
Surface Soil (<5 ft)	IA-4	Manganese	2/2	mg/kg			172	692	432	D	2070	692	m	2830	0/2	3.1E+02	N		Below Background
Surface Soil (<5 ft)	IA-4	Mercury	1/2	mg/kg	0.03	0.03	0.07	0.07	0.05	D	0.176	0.07	m	0.69	0/2	2.2E+00	N		Below Background
Surface Soil (<5 ft)	IA-4	Molybdenum	3/7	mg/kg	0.465	11.1	8.2	71.9	20.5	D	38.6	38.6	u	22.7	2/7	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-4	Nickel	3/3	mg/kg			19	2010	684	D	2620	2010	m	33.9	1/3	1.5E+02	Y	Quant.	
Surface Soil (<5 ft)	IA-4	Potassium	2/2	mg/kg			1060	1350	1210	D	2120	1350	m	1140	1/2		N		Essential Nutrient (low conc.)

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 8 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<5 ft)	IA-4	Selenium	1/7	mg/kg	0.5	11.1	29.3	29.3	10.4	D	17.4	17.4	u	0.55	1/7	3.7E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Sodium	2/2	mg/kg			197	242	220	D	362	242	m	235	1/2		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-4	Strontium	2/2	mg/kg			23.7	26.3	25	D	33.2	26.3	m	26	1/2	4.5E+03	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Thallium	2/7	mg/kg	9.55	11.1	1	3.3	8.09	D	11.1	3.3	m	0	2/7	6.0E-01	Y	Quant.	
Surface Soil (<5 ft)	IA-4	Titanium	2/2	mg/kg			170	243	207	D	437	243	m	269	0/2		N		Below Background
Surface Soil (<5 ft)	IA-4	Uranium	1/2	mg/kg	7.8	7.8	73.6	73.6	40.7	D	248	73.6	m	0	1/2		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Vanadium	2/2	mg/kg			29.5	39.1	34.3	D	64.6	39.1	m	31	1/2	5.2E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Zinc	2/2	mg/kg			52.3	59.3	55.8	D	77.9	59.3	m	278	0/2	2.2E+03	N		Below Background
Surface Soil (<5 ft)	IA-4	Toluene	4/5	mg/kg	0.003	0.003	0.0018	0.12	0.0273	D	0.0768	0.0768	u	0.11	1/5	5.2E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-4	Actinium-227	6/6	pCi/g			0.23	4.76	1.61	L	108	4.76	m	0.82	3/6		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Americium-241	2/6	pCi/g	0.06	0.09	0.18	0.24	0.118	D	0.179	0.179	u	0	2/6		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Potassium-40	6/6	pCi/g			13.85	16.65	14.9	L	15.8	15.8	u	16.8	0/6		N		Below Background
Surface Soil (<5 ft)	IA-4	Protactinium-231	3/6	pCi/g	-0.12	0.45	2.49	3.98	1.75	D	3.29	3.29	u	1.13	3/6		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Radium-226	20/40	pCi/g	1.2	4.4	0.82	1518	170	X	267	267	u	1.55	17/40		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Radium-228	6/6	pCi/g			0.95	1.2	1.04	L	1.13	1.13	u	1.24	0/6		N		Below Background
Surface Soil (<5 ft)	IA-4	Thorium-228	6/6	pCi/g			1.02	2.2	1.4	L	1.86	1.86	u	2.04	1/6		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Thorium-230	15/15	pCi/g			1.1	2440	398	L	30800	2440	m	2.89	13/15		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Thorium-232	8/38	pCi/g	2	20.4	1.15	4	4.76	D	5.97	4	m	1.83	2/38		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Uranium-235	5/6	pCi/g	0.14	0.14	1.21	3.89	1.96	N	3.06	3.06	u	0.25	5/6		Y	Quant.	
Surface Soil (<5 ft)	IA-4	Uranium-238	4/38	pCi/g	1.4	406	14.83	72.35	79.2	D	106	72.4	m	2.02	4/38		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Fluoride	2/2	mg/kg			4.42	21.1	12.8	D	65.4	21.1	m		NA	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Aluminum	7/7	mg/kg			10700	17100	13600	L	15500	15500	u	14700	2/7	7.5E+03	Y	Qual.	
Surface Soil (<5 ft)	IA-5	Arsenic	7/7	mg/kg			7.3	26.2	11	X	16	16	u	18	1/7	3.8E-01	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Barium	8/8	mg/kg			166	4550	744	X	1770	1770	u	279	1/8	5.2E+02	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Beryllium	6/7	mg/kg	0.375	0.375	0.7	1.4	0.865	N	1.09	1.09	u	0.83	4/7	1.5E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Boron	7/7	mg/kg			2.3	15.1	8.53	N	11.3	11.3	u	9.9	1/7	4.9E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Cadmium	3/18	mg/kg	0.155	0.55	0.63	4.2	0.66	D	1.03	1.03	u	0.62	3/18	3.7E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Calcium	7/7	mg/kg			2230	9310	5650	N	7290	7290	u	28900	0/7		N		Below Background
Surface Soil (<5 ft)	IA-5	Chromium	7/7	mg/kg			15.1	34.6	20.2	L	25.9	25.9	u	17.3	4/7	3.0E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Cobalt	13/13	mg/kg			7.6	308	107	L	653	308	m	31.7	8/13	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Copper	9/9	mg/kg			13.2	191	63.6	L	369	191	m	19.4	4/9	2.8E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Cyanide	1/3	mg/kg	0.3105	0.3225	0.772	0.772	0.468	D	0.912	0.772	m		NA	1.1E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Iron	7/7	mg/kg			16100	21400	19300	N	20800	20800	u	26600	0/7	2.2E+03	N		Below Background
Surface Soil (<5 ft)	IA-5	Lead	7/7	mg/kg			10.3	49	21	L	39.6	39.6	u	79.7	0/7	4.0E+01	N		Below Background
Surface Soil (<5 ft)	IA-5	Lithium	7/7	mg/kg			6	10.1	8.59	N	9.71	9.71	u	8.1	4/7	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Magnesium	9/9	mg/kg			2010	26900	7150	X	12200	12200	u	18400	1/9		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-5	Manganese	7/7	mg/kg			373	823	658	N	773	773	u	2830	0/7	3.1E+02	N		Below Background
Surface Soil (<5 ft)	IA-5	Molybdenum	7/18	mg/kg	0.465	11.25	1.2	27.9	10.3	D	13.6	13.6	u	22.7	2/18	3.7E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Nickel	7/7	mg/kg			21.2	108	45.1	X	70.3	70.3	u	33.9	3/7	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Potassium	7/7	mg/kg			827	2820	1390	L	2080	2080	u	1140	4/7		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-5	Selenium	7/18	mg/kg	1	11.35	0.38	19.6	8.61	D	10.7	10.7	u	0.55	5/18	3.7E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Silver	1/7	mg/kg	0.315	0.385	0.81	0.81	0.421	D	0.549	0.549	u	2.6	0/7	3.7E+01	N		Below Background
Surface Soil (<5 ft)	IA-5	Sodium	7/7	mg/kg			69.5	201	134	L	194	194	u	235	0/7		N		Below Background
Surface Soil (<5 ft)	IA-5	Strontium	7/7	mg/kg			14.8	243	79.5	X	154	154	u	26	3/7	4.5E+03	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Thallium	4/18	mg/kg	0.6	11.35	1.9	2	6.97	D	8.85	2	m	0	4/18	6.0E-01	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Titanium	7/7	mg/kg			99.1	338	225	N	284	284	u	269	2/7		Y	Qual.	
Surface Soil (<5 ft)	IA-5	Uranium	3/7	mg/kg	4.95	7.85	11.1	45.1	14.5	D	25.1	25.1	u	0	3/7		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Vanadium	7/7	mg/kg			27.4	111	43.7	X	65.8	65.8	u	31	4/7	5.2E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Zinc	7/7	mg/kg			41.4	79.7	56.2	L	68.5	68.5	u	278	0/7	2.2E+03	N		Below Background
Surface Soil (<5 ft)	IA-5	MCPP	1/5	mg/kg	4.9	10.5	30	30	12.1	D	22	22	u	0	1/5	5.5E+00	Y	Quant.	
Surface Soil (<5 ft)	IA-5	Benz(a)anthracene	1/5	mg/kg	0.2	0.21	0.19	0.19	0.202	D	0.209	0.19	m	0.3	0/5	5.6E-01	N		Below Background
Surface Soil (<5 ft)	IA-5	Benzo(b)fluoranthene	1/5	mg/kg	0.2	0.21	0.36	0.36	0.237	D	0.303	0.303	u	0.31	1/5	5.6E-01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Bis(2-ethylhexyl)phthalate	1/5	mg/kg	0.2	0.295	0.21	0.21	0.224	D	0.262	0.21	m	0.18	1/5	3.2E+01	N		Max. detect < PRG

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 9 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<5 ft)	IA-5	Butyl benzyl phthalate	1/5	mg/kg	0.2	0.21	0.31	0.31	0.226	D	0.271	0.271	u	0.25	1/5	9.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Chrysene	1/5	mg/kg	0.2	0.21	0.14	0.14	0.192	D	0.22	0.14	m	0.57	0/5	5.6E+01	N		Below Background
Surface Soil (<5 ft)	IA-5	Di-n-octylphthalate	1/5	mg/kg	0.2	0.21	0.13	0.13	0.19	D	0.222	0.13	m	0	1/5	1.1E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Fluoranthene	2/5	mg/kg	0.2	0.21	0.079	0.26	0.191	D	0.255	0.255	u	0.7	0/5	2.0E+02	N		Below Background
Surface Soil (<5 ft)	IA-5	Phenanthrene	1/5	mg/kg	0.2	0.21	0.078	0.078	0.18	D	0.234	0.078	m	0.28	0/5		N		Below Background
Surface Soil (<5 ft)	IA-5	Pyrene	2/5	mg/kg	0.2	0.21	0.29	0.31	0.243	D	0.293	0.293	u	0.66	0/5	1.5E+02	N		Below Background
Surface Soil (<5 ft)	IA-5	Toluene	5/10	mg/kg	0.003	0.003	0.0024	0.9	0.116	X	0.281	0.281	u	0.11	2/10	5.2E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-5	Actinium-227	34/43	pCi/g	0	0.27	0.19	292.7	10.4	Z	22	22	u	0.82	13/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Americium-241	3/43	pCi/g	-5.04	0.2	0.5	1.5	-0.000233	D	0.212	0.212	u	0	3/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Cesium-137	14/43	pCi/g	-0.03	0.09	0.04	2.35	0.0965	D	0.188	0.188	u	0.57	1/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Potassium-40	42/43	pCi/g	5.21	5.21	10.66	17.12	14.3	X	14.8	14.8	u	16.8	2/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Protactinium-231	12/43	pCi/g	-0.18	1.16	0.9	346.4	12.2	D	25.9	25.9	u	1.13	11/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Radium-226	107/160	pCi/g	1	4.8	0.6	900	18.8	X	29.4	29.4	u	1.55	80/160		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Radium-228	42/43	pCi/g	0.95	0.95	0.61	3.56	1.09	X	1.2	1.2	u	1.24	5/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Thorium-228	42/43	pCi/g	1.04	1.04	0.71	3.56	1.32	X	1.44	1.44	u	2.04	1/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Thorium-230	106/106	pCi/g			1	14680	419	X	662	662	u	2.89	97/106		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Thorium-232	88/160	pCi/g	1	7.2	0.64	7.5	2.45	X	2.63	2.63	u	1.83	25/160		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Uranium-235	30/43	pCi/g	-0.04	0.24	0.2	32.11	2.05	Z	3.45	3.45	u	0.25	25/43		Y	Quant.	
Surface Soil (<5 ft)	IA-5	Uranium-238	34/160	pCi/g	0.89	256	6	1000	40	D	51.6	51.6	u	2.02	34/160		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Fluoride	1/1	mg/kg			62.9	62.9	62.9	D		62.9	m		NA	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-6	Cobalt	1/1	mg/kg			62.3	62.3	62.3	D		62.3	m	31.7	1/1	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-6	Magnesium	1/1	mg/kg			12200	12200	12200	D		12200	m	18400	0/1		N		Below Background
Surface Soil (<5 ft)	IA-6	Actinium-227	1/1	pCi/g			17.89	17.89	17.9	D		17.9	m	0.82	1/1		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Potassium-40	1/1	pCi/g			13.87	13.87	13.9	D		13.9	m	16.8	0/1		N		Below Background
Surface Soil (<5 ft)	IA-6	Protactinium-231	1/1	pCi/g			18.78	18.78	18.8	D		18.8	m	1.13	1/1		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Radium-226	11/24	pCi/g	1.6	2.6	1	39.4	5.98	D	9.62	9.62	u	1.55	9/24		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Radium-228	1/1	pCi/g			1.37	1.37	1.37	D		1.37	m	1.24	1/1		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Thorium-228	1/1	pCi/g			1.37	1.37	1.37	D		1.37	m	2.04	0/1		N		Below Background
Surface Soil (<5 ft)	IA-6	Thorium-230	15/15	pCi/g			1.4	2100	211	X	464	464	u	2.89	8/15		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Thorium-232	8/24	pCi/g	2	4.9	1.2	7	3.04	D	3.45	3.45	u	1.83	6/24		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Uranium-235	1/1	pCi/g			4.33	4.33	4.33	D		4.33	m	0.25	1/1		Y	Quant.	
Surface Soil (<5 ft)	IA-6	Uranium-238	7/24	pCi/g	6	127.4	12	32	33.6	D	42.9	32	m	2.02	7/24		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Aluminum	2/2	mg/kg			15500	15700	15600	D	16200	15700	m	14700	2/2	7.5E+03	Y	Qual.	
Surface Soil (<5 ft)	IA-7	Arsenic	2/2	mg/kg			6.1	11.8	8.95	D	26.9	11.8	m	18	0/2	3.8E-01	N		Below Background
Surface Soil (<5 ft)	IA-7	Barium	4/4	mg/kg			195	13600	6700	D	15500	13600	m	279	2/4	5.2E+02	Y	Quant.	
Surface Soil (<5 ft)	IA-7	Beryllium	1/2	mg/kg	0.48	0.48	0.96	0.96	0.72	D	2.24	0.96	m	0.83	1/2	1.5E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-7	Boron	2/2	mg/kg			9.4	11.6	10.5	D	17.4	11.6	m	9.9	1/2	4.9E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-7	Cadmium	2/4	mg/kg	0.295	0.315	1.5	3.2	1.33	D	2.94	2.94	u	0.62	2/4	3.7E+00	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-7	Calcium	2/2	mg/kg			3540	5120	4330	D	9320	5120	m	28900	0/2		N		Below Background
Surface Soil (<5 ft)	IA-7	Chromium	2/2	mg/kg			20	22.1	21.1	D	27.7	22.1	m	17.3	2/2	3.0E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-7	Cobalt	4/4	mg/kg			6.8	6050	2430	D	5910	5910	u	31.7	2/4	3.3E+02	Y	Qual.	
Surface Soil (<5 ft)	IA-7	Copper	4/4	mg/kg			15.4	4400	1810	D	4370	4370	u	19.4	3/4	2.8E+02	Y	Qual.	
Surface Soil (<5 ft)	IA-7	Iron	2/2	mg/kg			19800	24600	22200	D	37400	24600	m	26600	0/2	2.2E+03	N		Below Background
Surface Soil (<5 ft)	IA-7	Lead	4/4	mg/kg			12.3	933	409	D	961	933	m	79.7	2/4	4.0E+01	Y	Qual.	
Surface Soil (<5 ft)	IA-7	Lithium	2/2	mg/kg			9	9.3	9.15	D	10.1	9.3	m	8.1	2/2	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	IA-7	Magnesium	2/2	mg/kg			3530	4120	3830	D	5690	4120	m	18400	0/2		N		Below Background
Surface Soil (<5 ft)	IA-7	Manganese	2/2	mg/kg			481	761	621	D	1500	761	m	2830	0/2	3.1E+02	N		Below Background
Surface Soil (<5 ft)	IA-7	Molybdenum	2/4	mg/kg	0.75	0.8	170	255	107	D	256	255	m	22.7	2/4	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-7	Nickel	4/4	mg/kg			21.2	7570	3040	D	7380	7380	u	33.9	2/4	1.5E+02	Y	Quant.	
Surface Soil (<5 ft)	IA-7	Potassium	2/2	mg/kg			916	1320	1120	D	2390	1320	m	1140	1/2		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	IA-7	Selenium	2/4	mg/kg	0.2	0.215	96	183	69.9	D	173	173	u	0.55	2/4	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-7	Sodium	2/2	mg/kg			119	135	127	D	178	135	m	235	0/2		N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 10 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<5 ft)	IA-7	Strontium	2/2	mg/kg			20.6	23.6	22.1	D	31.6	23.6	m	26	0/2	4.5E+03	N		Below Background
Surface Soil (<5 ft)	IA-7	Titanium	2/2	mg/kg			256	267	262	D	296	267	m	269	0/2		N		Below Background
Surface Soil (<5 ft)	IA-7	Vanadium	3/3	mg/kg			35	630	234	D	812	630	m	31	3/3	5.2E+01	Y	Quant.	
Surface Soil (<5 ft)	IA-7	Zinc	2/2	mg/kg			56.9	57.2	57.1	D	58	57.2	m	278	0/2	2.2E+03	N		Below Background
Surface Soil (<5 ft)	IA-7	1,2-Dichloroethane	1/2	mg/kg	0.0025	0.0025	0.001	0.001	0.00175	D	0.00649	0.001	m	0.009	0/2	3.4E-01	N		Below Background
Surface Soil (<5 ft)	IA-7	2-Butanone	1/2	mg/kg	0.005	0.005	0.001	0.001	0.003	D	0.0156	0.001	m	0.023	0/2	6.9E+02	N		Below Background
Surface Soil (<5 ft)	IA-7	Acetone	2/2	mg/kg			0.005	0.009	0.007	D	0.0196	0.009	m	0.017	0/2	1.4E+02	N		Below Background
Surface Soil (<5 ft)	IA-7	Actinium-227	9/19	pCi/g	-0.13	0.19	0.32	695.7	56.5	D	127	127	u	0.82	2/19		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Americium-241	1/19	pCi/g	-2.6	0.05	0.08	0.08	-0.216	D	0.0716	0.0716	u	0	1/19		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Potassium-40	18/19	pCi/g	11.07	11.07	13.87	16.6	15	X	15.5	15.5	u	16.8	0/19		N		Below Background
Surface Soil (<5 ft)	IA-7	Protactinium-231	10/19	pCi/g	0.1	0.92	1.2	685.8	56.4	X	126	126	u	1.13	10/19		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Radium-226	87/92	pCi/g	1.5	5	0.7	1818	42.2	X	82.5	82.5	u	1.55	42/92		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Radium-228	19/19	pCi/g			0.81	7.54	1.67	X	2.46	2.46	u	1.24	2/19		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Thorium-228	19/19	pCi/g			1.02	7.54	1.95	X	2.71	2.71	u	2.04	2/19		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Thorium-230	70/71	pCi/g	0.05	0.05	1	37780	965	X	2010	2010	u	2.89	48/71		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Thorium-232	80/92	pCi/g	1	25.2	0.7	7.54	2.15	X	2.61	2.61	u	1.83	28/92		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Uranium-235	5/19	pCi/g	0.04	0.17	0.24	54.18	4.7	D	10.3	10.3	u	0.25	4/19		Y	Quant.	
Surface Soil (<5 ft)	IA-7	Uranium-238	24/92	pCi/g	0.72	462	5	201.9	19.3	D	28.7	28.7	u	2.02	24/92		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Aluminum	1/1	mg/kg			4400	4400	4400	D		4400	m	14700	0/1	7.5E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Arsenic	1/1	mg/kg			4.5	4.5	4.5	D		4.5	m	18	0/1	3.8E-01	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Barium	1/1	mg/kg			105	105	105	D		105	m	279	0/1	5.2E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Boron	1/1	mg/kg			7.2	7.2	7.2	D		7.2	m	9.9	0/1	4.9E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Calcium	1/1	mg/kg			105000	105000	105000	D		105000	m	28900	1/1		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-8	Chromium	1/1	mg/kg			42.6	42.6	42.6	D		42.6	m	17.3	1/1	3.0E+01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Cobalt	1/1	mg/kg			23.2	23.2	23.2	D		23.2	m	31.7	0/1	3.3E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Copper	1/1	mg/kg			85.1	85.1	85.1	D		85.1	m	19.4	1/1	2.8E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Iron	1/1	mg/kg			13200	13200	13200	D		13200	m	26600	0/1	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Lead	1/1	mg/kg			500	500	500	D		500	m	79.7	1/1	4.0E+01	Y	Qual.	
Surface Soil (<0.5 ft)	IA-8	Magnesium	1/1	mg/kg			10000	10000	10000	D		10000	m	18400	0/1		N		Below Background
Surface Soil (<0.5 ft)	IA-8	Manganese	1/1	mg/kg			352	352	352	D		352	m	2830	0/1	3.1E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Mercury	1/1	mg/kg			0.08	0.08	0.08	D		0.08	m	0.69	0/1	2.2E+00	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Molybdenum	1/1	mg/kg			3.2	3.2	3.2	D		3.2	m	22.7	0/1	3.7E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Nickel	1/1	mg/kg			37.5	37.5	37.5	D		37.5	m	33.9	1/1	1.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Potassium	1/1	mg/kg			481	481	481	D		481	m	1140	0/1		N		Below Background
Surface Soil (<0.5 ft)	IA-8	Selenium	1/1	mg/kg			0.62	0.62	0.62	D		0.62	m	0.55	1/1	3.7E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Silver	1/1	mg/kg			0.62	0.62	0.62	D		0.62	m	2.6	0/1	3.7E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Sodium	1/1	mg/kg			630	630	630	D		630	m	235	1/1		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-8	Strontium	1/1	mg/kg			112	112	112	D		112	m	26	1/1	4.5E+03	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Titanium	1/1	mg/kg			127	127	127	D		127	m	269	0/1		N		Below Background
Surface Soil (<0.5 ft)	IA-8	Vanadium	1/1	mg/kg			20.6	20.6	20.6	D		20.6	m	31	0/1	5.2E+01	N		Below Background
Surface Soil (<0.5 ft)	IA-8	Zinc	1/1	mg/kg			284	284	284	D		284	m	278	1/1	2.2E+03	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	MCPA	1/1	mg/kg			25	25	25	D		25	m	0	1/1	2.7E+00	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Silvex	1/1	mg/kg			0.03	0.03	0.03	D		0.03	m	0	1/1	4.4E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	4,4'-DDT	1/1	mg/kg			0.0039	0.0039	0.0039	D		0.0039	m	0.00082	1/1	1.7E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	2-Methylnaphthalene	1/1	mg/kg			0.36	0.36	0.36	D		0.36	m	0	1/1		Y	Qual.	
Surface Soil (<0.5 ft)	IA-8	Acenaphthene	1/1	mg/kg			0.085	0.085	0.085	D		0.085	m	0	1/1	2.6E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Anthracene	1/1	mg/kg			0.28	0.28	0.28	D		0.28	m	0.031	1/1	1.4E+03	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Benz(a)anthracene	1/1	mg/kg			1.4	1.4	1.4	D		1.4	m	0.3	1/1	5.6E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Benzo(a)pyrene	1/1	mg/kg			1.6	1.6	1.6	D		1.6	m	0.34	1/1	5.6E-02	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Benzo(b)fluoranthene	1/1	mg/kg			2.1	2.1	2.1	D		2.1	m	0.31	1/1	5.6E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Benzo(ghi)perylene	1/1	mg/kg			0.91	0.91	0.91	D		0.91	m	0.39	1/1		Y	Qual.	
Surface Soil (<0.5 ft)	IA-8	Benzo(k)fluoranthene	1/1	mg/kg			1	1	1	D		1	m	0.29	1/1	5.6E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Butyl benzyl phthalate	1/1	mg/kg			0.21	0.21	0.21	D		0.21	m	0.25	0/1	9.3E+02	N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 11 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<0.5 ft)	IA-8	Carbazole	1/1	mg/kg			0.21	0.21	0.21	D		0.21	m	0	1/1	2.2E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Chrysene	1/1	mg/kg			1.8	1.8	1.8	D		1.8	m	0.57	1/1	5.6E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Di-n-butyl phthalate	1/1	mg/kg			0.15	0.15	0.15	D		0.15	m	0	1/1	5.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Dibenz(a,h)anthracene	1/1	mg/kg			0.28	0.28	0.28	D		0.28	m	0.035	1/1	5.6E-02	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Dibenzofuran	1/1	mg/kg			0.046	0.046	0.046	D		0.046	m	0	1/1	2.1E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Fluoranthene	1/1	mg/kg			3.3	3.3	3.3	D		3.3	m	0.7	1/1	2.0E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Fluorene	1/1	mg/kg			0.11	0.11	0.11	D		0.11	m	0	1/1	1.8E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Indeno(1,2,3-cd)pyrene	1/1	mg/kg			0.88	0.88	0.88	D		0.88	m	0.35	1/1	5.6E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Naphthalene	1/1	mg/kg			0.05	0.05	0.05	D		0.05	m	0	1/1	5.5E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Phenanthrene	1/1	mg/kg			1.6	1.6	1.6	D		1.6	m	0.28	1/1		Y	Qual.	
Surface Soil (<0.5 ft)	IA-8	Pyrene	1/1	mg/kg			2.8	2.8	2.8	D		2.8	m	0.66	1/1	1.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-8	Actinium-227	23/23	pCi/g			0.18	442.6	43	X	82.3	82.3	u	0.82	17/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Americium-241	3/23	pCi/g	-3.35	0.11	0.12	0.29	-0.323	D	0.00473	0.00473	u	0	3/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Cesium-137	21/23	pCi/g	-0.01	0.39	0.04	0.96	0.394	Z	0.472	0.472	u	0.57	3/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Potassium-40	23/23	pCi/g			5.85	18.46	13.9	X	15.1	15.1	u	16.8	3/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Protactinium-231	18/23	pCi/g	0	1.69	0.84	450.3	45.4	Z	86.5	86.5	u	1.13	17/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Radium-226	85/86	pCi/g	2.1	2.1	0.7	436.4	23.5	X	34.7	34.7	u	1.55	73/86		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Radium-228	23/23	pCi/g			0.28	4.76	1.29	X	1.64	1.64	u	1.24	4/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Thorium-228	23/23	pCi/g			0.49	4.76	1.49	L	1.82	1.82	u	2.04	2/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Thorium-230	83/84	pCi/g	0.36	0.36	2.9	20280	917	L	1750	1750	u	2.89	83/84		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Thorium-232	71/86	pCi/g	0	6.8	0.4	5	1.81	Z	2.03	2.03	u	1.83	29/86		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Uranium-235	21/23	pCi/g	0.09	0.19	0.32	38.87	5.35	L	20.2	20.2	u	0.25	21/23		Y	Quant.	
Surface Soil (<0.5 ft)	IA-8	Uranium-238	29/86	pCi/g	0	160.2	6	190.4	19.9	D	25.9	25.9	u	2.02	29/86		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Aluminum	8/8	mg/kg			1770	11100	8230	N	10300	10300	u	14700	0/8	7.5E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Antimony	1/8	mg/kg	2.1	3.5	4.3	4.3	2.93	D	3.42	3.42	u	5.2	0/8	3.0E+00	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Arsenic	8/8	mg/kg			5.5	41	12.9	X	21.4	21.4	u	18	2/8	3.8E-01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Barium	8/8	mg/kg			29.8	532	190	L	609	532	m	279	2/8	5.2E+02	Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Beryllium	6/8	mg/kg	0.2	0.255	0.71	1.9	0.826	L	2.14	1.9	m	0.83	2/8	1.5E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Boron	6/8	mg/kg	1.1	1.3	4.2	9.2	5.59	N	7.81	7.81	u	9.9	0/8	4.9E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Cadmium	2/8	mg/kg	0.165	0.465	1.2	2	0.623	D	1.05	1.05	u	0.62	2/8	3.7E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Calcium	8/8	mg/kg			1980	194000	33900	L	630000	194000	m	28900	1/8		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-9	Chromium	8/8	mg/kg			7.5	22.1	15.1	N	18.3	18.3	u	17.3	3/8	3.0E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Cobalt	8/8	mg/kg			2	864	171	L	174000	864	m	31.7	2/8	3.3E+02	Y	Qual.	
Surface Soil (<0.5 ft)	IA-9	Copper	8/8	mg/kg			7.2	632	137	L	4660	632	m	19.4	6/8	2.8E+02	Y	Qual.	
Surface Soil (<0.5 ft)	IA-9	Iron	8/8	mg/kg			4150	20800	14700	N	18200	18200	u	26600	0/8	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Lead	8/8	mg/kg			11.9	240	79.6	L	573	240	m	79.7	3/8	4.0E+01	Y	Qual.	
Surface Soil (<0.5 ft)	IA-9	Lithium	6/8	mg/kg	0.55	1.75	5.4	8.4	5.58	N	7.59	7.59	u	8.1	3/8	1.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Magnesium	8/8	mg/kg			1310	70100	12000	X	27800	27800	u	18400	1/8		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-9	Manganese	8/8	mg/kg			122	810	571	N	709	709	u	2830	0/8	3.1E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Molybdenum	6/8	mg/kg	0.7	0.75	1.4	25.7	6.04	L	78	25.7	m	22.7	1/8	3.7E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Nickel	8/8	mg/kg			2.6	1080	219	L	46500	1080	m	33.9	3/8	1.5E+02	Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Potassium	7/8	mg/kg	119.5	119.5	786	1790	992	N	1310	1310	u	1140	3/8		N		Essential Nutrient (low conc.)
Surface Soil (<0.5 ft)	IA-9	Selenium	4/8	mg/kg	0.17	0.205	0.6	22.3	4.98	D	10.5	10.5	u	0.55	4/8	3.7E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Sodium	8/8	mg/kg			58.9	174	106	L	143	143	u	235	0/8		N		Below Background
Surface Soil (<0.5 ft)	IA-9	Strontium	8/8	mg/kg			10.3	111	37	L	89.9	89.9	u	26	5/8	4.5E+03	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Titanium	8/8	mg/kg			48	310	205	N	260	260	u	269	1/8		Y	Qual.	
Surface Soil (<0.5 ft)	IA-9	Uranium	2/8	mg/kg	4.4	6.15	53.6	118	25.3	D	52.8	52.8	u	0	2/8		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Vanadium	8/8	mg/kg			10.7	185	53.5	L	191	185	m	31	4/8	5.2E+01	Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Zinc	8/8	mg/kg			24.2	131	71.7	L	131	131	u	278	0/8	2.2E+03	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Silvex	3/8	mg/kg	0.0125	0.013	0.027	0.042	0.0201	D	0.0275	0.0275	u	0	3/8	4.4E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	4,4'-DDE	1/8	mg/kg	0.0018	0.0025	0.012	0.012	0.00337	D	0.00571	0.00571	u	0	1/8	1.7E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	4,4'-DDT	1/8	mg/kg	0.0018	0.0025	0.033	0.033	0.00599	D	0.0133	0.0133	u	0.00082	1/8	1.7E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Anthracene	2/8	mg/kg	0.185	0.25	0.061	0.064	0.176	D	0.225	0.064	m	0.031	2/8	1.4E+03	N		Max. detect < PRG

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 12 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<0.5 ft)	IA-9	Benz(a)anthracene	8/8	mg/kg			0.13	0.5	0.265	L	0.468	0.468	u	0.3	3/8	5.6E-01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Benzo(a)pyrene	8/8	mg/kg			0.062	0.59	0.238	L	0.8	0.59	m	0.34	3/8	5.6E-02	Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Benzo(b)fluoranthene	8/8	mg/kg			0.14	0.55	0.319	L	0.541	0.541	u	0.31	4/8	5.6E-01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Benzo(ghi)perylene	4/8	mg/kg	0.185	0.25	0.11	0.54	0.246	D	0.338	0.338	u	0.39	1/8		Y	Qual.	
Surface Soil (<0.5 ft)	IA-9	Benzo(k)fluoranthene	4/8	mg/kg	0.185	0.25	0.13	0.43	0.232	D	0.297	0.297	u	0.29	2/8	5.6E+00	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Bis(2-ethylhexyl)phthalate	3/8	mg/kg	0.185	0.25	0.25	0.32	0.238	D	0.266	0.266	u	0.18	3/8	3.2E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Butyl benzyl phthalate	3/8	mg/kg	0.185	0.21	0.17	0.23	0.201	D	0.214	0.214	u	0.25	0/8	9.3E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Carbazole	1/8	mg/kg	0.185	0.25	0.082	0.082	0.196	D	0.229	0.082	m	0	1/8	2.2E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Chrysene	5/8	mg/kg	0.185	0.215	0.11	0.91	0.373	L	0.885	0.885	u	0.57	2/8	5.6E+01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Di-n-butyl phthalate	1/8	mg/kg	0.185	0.25	0.049	0.049	0.193	D	0.234	0.049	m	0	1/8	5.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Di-n-octylphthalate	2/8	mg/kg	0.185	0.22	0.082	0.1	0.178	D	0.214	0.1	m	0	2/8	1.1E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Fluoranthene	8/8	mg/kg			0.085	1.1	0.468	L	3.16	1.1	m	0.7	3/8	2.0E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Indeno(1,2,3-cd)pyrene	5/8	mg/kg	0.185	0.215	0.057	0.47	0.22	L	0.457	0.457	u	0.35	1/8	5.6E-01	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Phenanthrene	8/8	mg/kg			0.082	0.39	0.205	L	0.45	0.39	m	0.28	3/8		Y	Qual.	
Surface Soil (<0.5 ft)	IA-9	Pyrene	8/8	mg/kg			0.12	0.94	0.408	L	1.29	0.94	m	0.66	2/8	1.5E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	2-Butanone	4/8	mg/kg	0.005	0.0065	0.007	0.034	0.0141	D	0.0222	0.0222	u	0.023	2/8	6.9E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Dimethylbenzene	2/8	mg/kg	0.0025	0.003	0.001	0.015	0.00406	D	0.00706	0.00706	u	0	2/8		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Ethylbenzene	1/8	mg/kg	0.0025	0.003	0.002	0.002	0.00263	D	0.00286	0.002	m	0	1/8	2.3E+02	N		Max. detect < PRG
Surface Soil (<0.5 ft)	IA-9	Toluene	4/8	mg/kg	0.0025	0.003	0.002	0.016	0.00431	D	0.00749	0.00749	u	0.11	0/8	5.2E+02	N		Below Background
Surface Soil (<0.5 ft)	IA-9	Actinium-227	26/61	pCi/g	-0.04	0.22	0.16	46.85	1.39	D	2.84	2.84	u	0.82	3/61		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Cesium-137	52/61	pCi/g	0	0.05	0.04	0.32	0.0844	Z	0.0955	0.0955	u	0.57	0/61		N		Below Background
Surface Soil (<0.5 ft)	IA-9	Potassium-40	61/61	pCi/g			5.93	18.62	15.1	X	15.7	15.7	u	16.8	10/61		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Protactinium-231	25/61	pCi/g	-0.4	1.25	0.73	51.73	2.12	D	3.69	3.69	u	1.13	24/61		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Radium-226	451/478	pCi/g	0	0.6	0.5	29.27	1.53	Z	1.69	1.69	u	1.55	135/478		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Radium-228	61/61	pCi/g			0.26	1.29	0.924	X	0.964	0.964	u	1.24	2/61		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Thorium-228	61/61	pCi/g			0.6	2.1	1.25	L	1.33	1.33	u	2.04	1/61		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Thorium-230	510/523	pCi/g	0.1	0.8	0.51	2787	23.2	X	34.3	34.3	u	2.89	344/523		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Thorium-232	443/474	pCi/g	0	2	0.47	5	1.59	Z	1.65	1.65	u	1.83	160/474		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Uranium-235	13/61	pCi/g	-0.05	0.2	0.15	6.92	0.324	D	0.549	0.549	u	0.25	7/61		Y	Quant.	
Surface Soil (<0.5 ft)	IA-9	Uranium-238	19/479	pCi/g	0	18	3.6	42	5.65	D	6.01	6.01	u	2.02	19/479		N		<5% detected
Soil - All Depths	ROAD ROW	Aluminum	1/1	mg/kg			15800	15800	15800	D		15800	m	14700	1/1	7.5E+03	Y	Qual.	
Soil - All Depths	ROAD ROW	Arsenic	1/1	mg/kg			23.2	23.2	23.2	D		23.2	m	18	1/1	3.8E-01	Y	Quant.	
Soil - All Depths	ROAD ROW	Barium	1/1	mg/kg			350	350	350	D		350	m	279	1/1	5.2E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Beryllium	1/1	mg/kg			1.5	1.5	1.5	D		1.5	m	0.83	1/1	1.5E+01	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Boron	1/1	mg/kg			18.8	18.8	18.8	D		18.8	m	9.9	1/1	4.9E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Calcium	1/1	mg/kg			5050	5050	5050	D		5050	m	28900	0/1		N		Below Background
Soil - All Depths	ROAD ROW	Chromium	1/1	mg/kg			19.8	19.8	19.8	D		19.8	m	17.3	1/1	3.0E+01	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Cobalt	1/1	mg/kg			35.1	35.1	35.1	D		35.1	m	31.7	1/1	3.3E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Copper	1/1	mg/kg			22.9	22.9	22.9	D		22.9	m	19.4	1/1	2.8E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Iron	1/1	mg/kg			52100	52100	52100	D		52100	m	26600	1/1	2.2E+03	N		Essential Nutrient (low conc.)
Soil - All Depths	ROAD ROW	Lead	1/1	mg/kg			39.5	39.5	39.5	D		39.5	m	79.7	0/1	4.0E+01	N		Below Background
Soil - All Depths	ROAD ROW	Lithium	1/1	mg/kg			9.1	9.1	9.1	D		9.1	m	8.1	1/1	1.5E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Magnesium	1/1	mg/kg			2770	2770	2770	D		2770	m	18400	0/1		N		Below Background
Soil - All Depths	ROAD ROW	Manganese	1/1	mg/kg			6320	6320	6320	D		6320	m	2830	1/1	3.1E+02	Y	Quant.	
Soil - All Depths	ROAD ROW	Molybdenum	1/1	mg/kg			2.1	2.1	2.1	D		2.1	m	22.7	0/1	3.7E+01	N		Below Background
Soil - All Depths	ROAD ROW	Nickel	1/1	mg/kg			32.9	32.9	32.9	D		32.9	m	33.9	0/1	1.5E+02	N		Below Background
Soil - All Depths	ROAD ROW	Potassium	1/1	mg/kg			1160	1160	1160	D		1160	m	1140	1/1		N		Essential Nutrient (low conc.)
Soil - All Depths	ROAD ROW	Sodium	1/1	mg/kg			932	932	932	D		932	m	235	1/1		N		Essential Nutrient (low conc.)
Soil - All Depths	ROAD ROW	Strontium	1/1	mg/kg			21.8	21.8	21.8	D		21.8	m	26	0/1	4.5E+03	N		Below Background
Soil - All Depths	ROAD ROW	Thallium	1/1	mg/kg			7.2	7.2	7.2	D		7.2	m	0	1/1	6.0E-01	Y	Quant.	
Soil - All Depths	ROAD ROW	Titanium	1/1	mg/kg			293	293	293	D		293	m	269	1/1		Y	Qual.	
Soil - All Depths	ROAD ROW	Vanadium	1/1	mg/kg			65.3	65.3	65.3	D		65.3	m	31	1/1	5.2E+01	Y	Quant.	
Soil - All Depths	ROAD ROW	Zinc	1/1	mg/kg			73	73	73	D		73	m	278	0/1	2.2E+03	N		Below Background

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 13 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Soil - All Depths	ROAD ROW	MCPP	1/1	mg/kg			120	120	120	D		120	m	0	1/1	5.5E+00	Y	Quant.	
Soil - All Depths	ROAD ROW	alpha-Chlordane	1/2	mg/kg	0.00115	0.00115	0.03	0.03	0.0156	D	0.107	0.03	m	0.014	1/2	1.6E+00	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Fluoranthene	1/1	mg/kg			0.1	0.1	0.1	D		0.1	m	0.7	0/1	2.0E+02	N		Below Background
Soil - All Depths	ROAD ROW	Pyrene	1/1	mg/kg			0.32	0.32	0.32	D		0.32	m	0.66	0/1	1.5E+02	N		Below Background
Soil - All Depths	ROAD ROW	2-Butanone	1/1	mg/kg			0.024	0.024	0.024	D		0.024	m	0.023	1/1	6.9E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Acetone	1/1	mg/kg			0.077	0.077	0.077	D		0.077	m	0.017	1/1	1.4E+02	N		Max. detect < PRG
Soil - All Depths	ROAD ROW	Toluene	1/1	mg/kg			0.004	0.004	0.004	D		0.004	m	0.11	0/1	5.2E+02	N		Below Background
Soil - All Depths	ROAD ROW	Actinium-227	2/4	pCi/g	0.14	0.16	0.27	0.29	0.215	D	0.304	0.29	m	0.82	0/4		N		Below Background
Soil - All Depths	ROAD ROW	Americium-241	1/4	pCi/g	0.03	0.04	0.12	0.12	0.0575	D	0.107	0.107	u	0	1/4		Y	Quant.	
Soil - All Depths	ROAD ROW	Cesium-137	4/4	pCi/g			0.04	0.2	0.138	D	0.221	0.2	m	0.57	0/4		N		Below Background
Soil - All Depths	ROAD ROW	Potassium-40	4/4	pCi/g			12.81	16.18	14.5	D	16.1	16.1	u	16.8	0/4		N		Below Background
Soil - All Depths	ROAD ROW	Radium-226	1730/1757	pCi/g	0.4	4	0.4	92	2.7	X	2.89	2.89	u	1.55	1059/1757		Y	Quant.	
Soil - All Depths	ROAD ROW	Radium-228	4/4	pCi/g			0.8	1.02	0.925	D	1.04	1.02	m	1.24	0/4		N		Below Background
Soil - All Depths	ROAD ROW	Thorium-228	4/4	pCi/g			1.14	1.51	1.39	D	1.59	1.51	m	2.04	0/4		N		Below Background
Soil - All Depths	ROAD ROW	Thorium-230	2740/2784	pCi/g	0.3	1.5	0.3	5100	42.2	X	49.9	49.9	u	2.89	998/2784		Y	Quant.	
Soil - All Depths	ROAD ROW	Thorium-232	1520/1752	pCi/g	0	9	0.35	64	2.13	Z	2.22	2.22	u	1.83	917/1752		Y	Quant.	
Soil - All Depths	ROAD ROW	Uranium-235	1/4	pCi/g	0	0.17	0.24	0.24	0.133	D	0.251	0.24	m	0.25	0/4		N		Below Background
Soil - All Depths	ROAD ROW	Uranium-238	47/1754	pCi/g	0	69	2.1	78	11.2	D	11.5	11.5	u	2.02	47/1754		N		<5% detected
Surface Soil (<5 ft)	SLAPS	Fluoride	5/5	mg/kg			4.42	62.9	28.3	L	888	62.9	m		NA	3.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Sulfide	1/4	mg/kg	0.00655	13.6	21	21	10.3	D	20.9	20.9	u		NA		Y	Qual.	
Surface Soil (<5 ft)	SLAPS	Aluminum	14/14	mg/kg			10700	23200	15400	L	17100	17100	u	14700	7/14	7.5E+03	Y	Qual.	
Surface Soil (<5 ft)	SLAPS	Antimony	2/52	mg/kg	0.19	6.8	5.3	53.2	5.99	D	7.6	7.6	u	5.2	2/52	3.0E+00	N		<5% detected
Surface Soil (<5 ft)	SLAPS	Arsenic	17/17	mg/kg			6.1	237	37.1	X	66.9	66.9	u	18	4/17	3.8E-01	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Barium	19/19	mg/kg			152	13600	2030	X	3680	3680	u	279	6/19	5.2E+02	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Beryllium	12/14	mg/kg	0.375	0.48	0.7	2.4	0.968	L	1.26	1.26	u	0.83	10/14	1.5E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Boron	13/14	mg/kg	4.45	4.45	2.3	15.1	8.88	N	10.4	10.4	u	9.9	3/14	4.9E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Cadmium	12/52	mg/kg	0.14	0.55	0.52	50.4	1.83	D	3.45	3.45	u	0.62	11/52	3.7E+00	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Calcium	14/14	mg/kg			2230	29500	6860	X	10100	10100	u	28900	1/14		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	SLAPS	Chromium	15/15	mg/kg			15.1	3240	236	X	614	614	u	17.3	12/15	3.0E+01	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Cobalt	32/32	mg/kg			4.7	6050	436	X	804	804	u	31.7	20/32	3.3E+02	Y	Qual.	
Surface Soil (<5 ft)	SLAPS	Copper	23/23	mg/kg			13.1	4400	432	X	807	807	u	19.4	15/23	2.8E+02	Y	Qual.	
Surface Soil (<5 ft)	SLAPS	Cyanide	1/6	mg/kg	0.3	0.3225	0.772	0.772	0.387	D	0.542	0.542	u		NA	1.1E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Iron	14/14	mg/kg			16100	26800	20900	L	22400	22400	u	26600	1/14	2.2E+03	N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	SLAPS	Lead	19/19	mg/kg			8.6	1200	202	X	342	342	u	79.7	6/19	4.0E+01	Y	Qual.	
Surface Soil (<5 ft)	SLAPS	Lithium	14/14	mg/kg			6	14.6	9.4	L	10.5	10.5	u	8.1	11/14	1.5E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Magnesium	27/27	mg/kg			2010	26900	8240	L	11000	11000	u	18400	2/27		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	SLAPS	Manganese	14/14	mg/kg			172	1330	662	N	786	786	u	2830	0/14	3.1E+02	N		Below Background
Surface Soil (<5 ft)	SLAPS	Mercury	1/14	mg/kg	0.03	0.035	0.07	0.07	0.0332	D	0.0383	0.0383	u	0.69	0/14	2.2E+00	N		Below Background
Surface Soil (<5 ft)	SLAPS	Molybdenum	19/52	mg/kg	0.415	11.25	1.2	255	24.7	D	35.8	35.8	u	22.7	10/52	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Nickel	17/17	mg/kg			19	7570	860	X	1740	1740	u	33.9	7/17	1.5E+02	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Potassium	14/14	mg/kg			827	2820	1380	L	1660	1660	u	1140	9/14		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	SLAPS	Selenium	10/52	mg/kg	0.15	11.35	0.38	183	13.5	D	19.9	19.9	u	0.55	8/52	3.7E+01	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Silver	1/14	mg/kg	0.315	0.41	0.81	0.81	0.396	D	0.454	0.454	u	2.6	0/14	3.7E+01	N		Below Background
Surface Soil (<5 ft)	SLAPS	Sodium	14/14	mg/kg			69.5	382	168	L	218	218	u	235	2/14		N		Essential Nutrient (low conc.)
Surface Soil (<5 ft)	SLAPS	Strontium	14/14	mg/kg			14.8	243	55.6	X	90.4	90.4	u	26	6/14	4.5E+03	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Thallium	8/52	mg/kg	0.6	11.35	1	3.3	7.78	D	8.72	3.3	m	0	8/52	6.0E-01	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Titanium	14/14	mg/kg			99.1	416	248	N	285	285	u	269	4/14		Y	Qual.	
Surface Soil (<5 ft)	SLAPS	Uranium	6/14	mg/kg	4.95	8.35	11.1	129	25	D	41.9	41.9	u	0	6/14		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Vanadium	17/17	mg/kg			27.4	862	168	X	288	288	u	31	13/17	5.2E+01	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Zinc	15/15	mg/kg			41.4	4330	343	X	844	844	u	278	1/15	2.2E+03	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	TOX	1/2	UG/G	30.35	30.35	56.9	56.9	43.6	D	127	56.9	m		NA		Y	Qual.	
Surface Soil (<5 ft)	SLAPS	MCPP	2/11	mg/kg	4.5	10.5	11	30	8.74	D	12.8	12.8	u	0	2/11	5.5E+00	Y	Quant.	
Surface Soil (<5 ft)	SLAPS	PCB-1254	1/11	mg/kg	0.0185	0.1	0.26	0.26	0.0493	D	0.0896	0.0896	u	0	1/11	9.7E-02	Y	Quant.	

Attachment 6. Determination of Surface[f] Soil Potential Chemicals of Concern by Aggregate (Page 14 of 14)
(only detected analytes are shown)

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Surface Soil (<5 ft)	SLAPS	Benz(a)anthracene	3/11	mg/kg	0.19	0.225	0.09	0.19	0.192	D	0.212	0.19	m	0.3	0/11	5.6E-01	N		Below Background
Surface Soil (<5 ft)	SLAPS	Benzo(a)pyrene	2/11	mg/kg	0.19	0.225	0.077	0.18	0.193	D	0.215	0.18	m	0.34	0/11	5.6E-02	N		Below Background
Surface Soil (<5 ft)	SLAPS	Benzo(b)fluoranthene	2/11	mg/kg	0.185	0.225	0.083	0.36	0.208	D	0.243	0.243	u	0.31	1/11	5.6E-01	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Benzo(ghi)perylene	1/11	mg/kg	0.19	0.225	0.19	0.19	0.205	D	0.21	0.19	m	0.39	0/11		N		Below Background
Surface Soil (<5 ft)	SLAPS	Benzo(k)fluoranthene	1/11	mg/kg	0.19	0.225	0.066	0.066	0.193	D	0.217	0.066	m	0.29	0/11	5.6E+00	N		Below Background
Surface Soil (<5 ft)	SLAPS	Bis(2-ethylhexyl)phthalate	1/11	mg/kg	0.185	0.295	0.21	0.21	0.212	D	0.228	0.21	m	0.18	1/11	3.2E+01	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Butyl benzyl phthalate	2/11	mg/kg	0.185	0.225	0.1	0.31	0.205	D	0.231	0.231	u	0.25	1/11	9.3E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Chrysene	2/11	mg/kg	0.19	0.225	0.14	0.21	0.2	D	0.212	0.21	m	0.57	0/11	5.6E+01	N		Below Background
Surface Soil (<5 ft)	SLAPS	Di-n-octylphthalate	1/11	mg/kg	0.185	0.225	0.13	0.13	0.197	D	0.21	0.13	m	0	1/11	1.1E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Fluoranthene	4/11	mg/kg	0.19	0.225	0.079	0.31	0.2	D	0.235	0.235	u	0.7	0/11	2.0E+02	N		Below Background
Surface Soil (<5 ft)	SLAPS	Indeno(1,2,3-cd)pyrene	2/11	mg/kg	0.19	0.225	0.089	0.18	0.194	D	0.214	0.18	m	0.35	0/11	5.6E-01	N		Below Background
Surface Soil (<5 ft)	SLAPS	Phenanthrene	3/11	mg/kg	0.19	0.225	0.042	0.19	0.179	D	0.211	0.19	m	0.28	0/11		N		Below Background
Surface Soil (<5 ft)	SLAPS	Pyrene	4/11	mg/kg	0.19	0.225	0.046	0.31	0.215	D	0.253	0.253	u	0.66	0/11	1.5E+02	N		Below Background
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethane	1/11	mg/kg	0.0025	0.003	0.001	0.001	0.00277	D	0.0031	0.001	m	0.009	0/11	3.4E-01	N		Below Background
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethene	1/11	mg/kg	0.0025	0.003	0.003	0.003	0.00291	D	0.00302	0.003	m	0	1/11		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	2-Butanone	1/11	mg/kg	0.005	0.0065	0.001	0.001	0.00541	D	0.00625	0.001	m	0.023	0/11	6.9E+02	N		Below Background
Surface Soil (<5 ft)	SLAPS	Acetone	2/10	mg/kg	0.006	0.017	0.005	0.009	0.00985	D	0.0125	0.009	m	0.017	0/10	1.4E+02	N		Below Background
Surface Soil (<5 ft)	SLAPS	Dimethylbenzene	1/11	mg/kg	0.0025	0.003	0.01	0.01	0.00355	D	0.00472	0.00472	u	0	1/11		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Methylene chloride	1/11	mg/kg	0.0025	0.0075	0.13	0.13	0.0155	D	0.0363	0.0363	u	0.007	1/11	8.5E+00	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Toluene	19/30	mg/kg	0.0025	0.003	0.0015	0.9	0.0483	X	0.1	0.1	u	0.11	3/30	5.2E+02	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Trichloroethene	1/11	mg/kg	0.0025	0.003	0.005	0.005	0.00309	D	0.00345	0.00345	u	0	1/11	2.7E+00	N		Max. detect < PRG
Surface Soil (<5 ft)	SLAPS	Actinium-227	72/98	pCi/g	-0.13	2.6	0.18	695.7	18.3	Z	32.6	32.6	u	0.82	31/98		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Americium-241	11/97	pCi/g	-5.04	0.37	0.06	2.58	0.0381	D	0.161	0.161	u	0	11/97		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Cesium-137	30/97	pCi/g	-0.04	0.35	0.03	3.09	0.0926	D	0.159	0.159	u	0.57	2/97		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Potassium-40	94/97	pCi/g	5.21	11.07	5.69	17.74	14	X	14.4	14.4	u	16.8	6/97		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Protactinium-231	37/98	pCi/g	-0.18	5.2	0.9	685.8	19.5	D	34.1	34.1	u	1.13	36/98		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Radium-226	323/456	pCi/g	1	5	0.6	2700	42.6	X	58.8	58.8	u	1.55	206/456		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Radium-228	96/97	pCi/g	0.95	0.95	0.33	7.54	1.18	X	1.35	1.35	u	1.24	12/97		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Thorium-228	96/97	pCi/g	1.04	1.04	0.34	7.54	1.42	X	1.59	1.59	u	2.04	5/97		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Thorium-230	278/279	pCi/g	0.05	0.05	0	37780	530	Z	823	823	u	2.89	227/279		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Thorium-232	264/454	pCi/g	0.5	25.2	0.4	63	2.7	X	2.98	2.98	u	1.83	78/454		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Uranium-235	62/97	pCi/g	-0.04	0.24	0.2	54.18	2.84	Z	4.22	4.22	u	0.25	54/97		Y	Quant.	
Surface Soil (<5 ft)	SLAPS	Uranium-238	104/455	pCi/g	0.33	462	3.04	1200	41.9	D	49.6	49.6	u	2.02	104/455		Y	Quant.	

UCL95 = 95% upper confidence limit on the mean concentration

PRG = Preliminary Remediation Goal

PCOC = Potential Contaminant of Concern

[a] Distribution flags:

D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of UCL_{95}.

L = Lognormal; H-statistic used in calculations of UCL_{95}.

N = Normal; t-statistic used in calculations of UCL_{95}.

X = Neither normal nor lognormal; t-statistic used in calculations of UCL_{95}.

Z = Contains concentrations that are negative and/or zero; t-statistic used in calculations of UCL_{95}.

[b] Basis for determining the exposure concentration:

m = maximum detected concentration.

u = 95% upper confidence limit on the mean concentration.

[c] EPA Region IX residential soil PRG, based on a risk level of 10^{-6} or a hazard level of 0.1 (note that Region IX noncarcinogenic PRGs are provided for a hazard level of 1.0; these values have been adjusted to a hazard level of 0.1 for this screening).

[d] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively;

Qual. = Qualitative

Quant. = Quantitative.

[e] Justification for eliminating the analyte from the PCOC list.

[f] "Surface soil" is generally considered to be the top 0.5 ft but may be defined differently at some properties. For example, it is known that approximately the top 5 ft of SLAPS was regraded after much of the historical data were collected. The assessment therefore assumes that any result reported within the top 5 ft of soil should be considered as surface soil. At other properties the data are too limited to break into surface and subsurface intervals. In these cases data are aggregated and used in both surface and subsurface risk calculations.

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 1 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
09K220205/VP-54	Aluminum	10/10	mg/kg			4260	7880	5530	L	6180	6180	u	14700	0/10	1.0E+05	N		Below Background
09K220205/VP-54	Arsenic	10/10	mg/kg			0.84	11.9	5.85	N	7.75	7.75	u	18	0/10	3.0E+00	N		Below Background
09K220205/VP-54	Barium	10/10	mg/kg			40.7	279	143	N	183	183	u	279	0/10	1.0E+05	N		Below Background
09K220205/VP-54	Beryllium	10/10	mg/kg			0.41	0.56	0.489	L	0.524	0.524	u	0.83	0/10	3.4E+02	N		Below Background
09K220205/VP-54	Calcium	10/10	mg/kg			2320	15500	5190	X	7590	7590	u	28900	0/10		N		Below Background
09K220205/VP-54	Chromium	10/10	mg/kg			10	12	10.7	N	11.1	11.1	u	17.3	0/10	6.4E+01	N		Below Background
09K220205/VP-54	Cobalt	10/10	mg/kg			5.5	9.6	7.41	L	8.39	8.39	u	31.7	0/10	2.9E+03	N		Below Background
09K220205/VP-54	Copper	10/10	mg/kg			9.6	16.4	13.4	N	14.5	14.5	u	19.4	0/10	7.0E+03	N		Below Background
09K220205/VP-54	Iron	10/10	mg/kg			7270	28200	12800	L	16900	16900	u	26600	1/10	1.0E+05	N		Essential Nutrient (low conc.)
09K220205/VP-54	Lead	10/10	mg/kg			7.3	30.9	12.8	L	17.2	17.2	u	79.7	0/10	1.0E+02	N		Below Background
09K220205/VP-54	Magnesium	10/10	mg/kg			1610	9940	3550	X	5020	5020	u	18400	0/10		N		Below Background
09K220205/VP-54	Manganese	10/10	mg/kg			68.3	4690	1250	L	5960	4690	m	2830	2/10	4.5E+03	Y	Quant.	
09K220205/VP-54	Molybdenum	10/10	mg/kg			6.3	22.7	10.5	L	13.5	13.5	u	22.7	0/10	9.4E+02	N		Below Background
09K220205/VP-54	Nickel	10/10	mg/kg			10.1	23.4	14.6	L	17.7	17.7	u	33.9	0/10	3.7E+03	N		Below Background
09K220205/VP-54	Potassium	10/10	mg/kg			436	827	634	N	711	711	u	1140	0/10		N		Below Background
09K220205/VP-54	Silver	1/10	mg/kg	1.25	1.3	2.6	2.6	1.39	D	1.64	1.64	u	2.6	0/10	9.4E+02	N		Below Background
09K220205/VP-54	Sodium	10/10	mg/kg			51.8	78	66.5	N	71.8	71.8	u	235	0/10		N		Below Background
09K220205/VP-54	Vanadium	10/10	mg/kg			9.5	16.3	12.7	L	13.8	13.8	u	31	0/10	1.3E+03	N		Below Background
09K220205/VP-54	Zinc	10/10	mg/kg			30.6	52.8	40.6	L	44.8	44.8	u	278	0/10	1.0E+05	N		Below Background
09K220205/VP-54	Anthracene	1/10	mg/kg	0.205	0.22	0.031	0.031	0.194	D	0.227	0.031	m	0.031	0/10	2.2E+04	N		Below Background
09K220205/VP-54	Benz(a)anthracene	1/10	mg/kg	0.205	0.22	0.17	0.17	0.208	D	0.216	0.17	m	0.3	0/10	3.6E+00	N		Below Background
09K220205/VP-54	Benzo(a)pyrene	1/10	mg/kg	0.205	0.22	0.15	0.15	0.206	D	0.217	0.15	m	0.34	0/10	3.6E-01	N		Below Background
09K220205/VP-54	Benzo(b)fluoranthene	1/10	mg/kg	0.205	0.22	0.21	0.21	0.212	D	0.214	0.21	m	0.31	0/10	3.6E+00	N		Below Background
09K220205/VP-54	Benzo(ghi)perylene	1/10	mg/kg	0.205	0.22	0.084	0.084	0.199	D	0.222	0.084	m	0.39	0/10		N		Below Background
09K220205/VP-54	Benzo(k)fluoranthene	1/10	mg/kg	0.205	0.22	0.18	0.18	0.209	D	0.215	0.18	m	0.29	0/10	3.6E+01	N		Below Background
09K220205/VP-54	Chrysene	1/10	mg/kg	0.205	0.22	0.19	0.19	0.21	D	0.214	0.19	m	0.57	0/10	3.6E+02	N		Below Background
09K220205/VP-54	Dibenz(a,h)anthracene	1/10	mg/kg	0.205	0.22	0.035	0.035	0.194	D	0.227	0.035	m	0.035	0/10	3.6E-01	N		Below Background
09K220205/VP-54	Fluoranthene	1/10	mg/kg	0.205	0.22	0.41	0.41	0.232	D	0.268	0.268	u	0.7	0/10	3.7E+03	N		Below Background
09K220205/VP-54	Indeno(1,2,3-cd)pyrene	1/10	mg/kg	0.205	0.22	0.13	0.13	0.204	D	0.219	0.13	m	0.35	0/10	3.6E+00	N		Below Background
09K220205/VP-54	Phenanthrene	1/10	mg/kg	0.205	0.22	0.18	0.18	0.209	D	0.215	0.18	m	0.28	0/10		N		Below Background
09K220205/VP-54	Pyrene	1/10	mg/kg	0.205	0.22	0.34	0.34	0.225	D	0.248	0.248	u	0.66	0/10	2.6E+03	N		Below Background
09K220205/VP-54	Acetone	1/10	mg/kg	0.0065	0.0065	0.017	0.017	0.00755	D	0.00947	0.00947	u	0.017	0/10	6.1E+02	N		Below Background
09K220205/VP-54	Toluene	7/9	mg/kg	0.003	0.0065	0.002	0.11	0.0248	L	0.192	0.11	m	0.11	0/9	5.2E+02	N		Below Background
IA-1	Aluminum	1/1	mg/kg			8020	8020	8020	D		8020	m	14700	0/1	1.0E+05	N		Below Background
IA-1	Arsenic	1/1	mg/kg			3.9	3.9	3.9	D		3.9	m	18	0/1	3.0E+00	N		Below Background
IA-1	Barium	1/1	mg/kg			89.2	89.2	89.2	D		89.2	m	279	0/1	1.0E+05	N		Below Background
IA-1	Beryllium	1/1	mg/kg			0.55	0.55	0.55	D		0.55	m	0.83	0/1	3.4E+02	N		Below Background
IA-1	Boron	1/1	mg/kg			6.6	6.6	6.6	D		6.6	m	9.9	0/1	9.6E+03	N		Below Background
IA-1	Calcium	1/1	mg/kg			26400	26400	26400	D		26400	m	28900	0/1		N		Below Background
IA-1	Chromium	1/1	mg/kg			13.9	13.9	13.9	D		13.9	m	17.3	0/1	6.4E+01	N		Below Background
IA-1	Cobalt	1/1	mg/kg			5.3	5.3	5.3	D		5.3	m	31.7	0/1	2.9E+03	N		Below Background
IA-1	Copper	1/1	mg/kg			9.7	9.7	9.7	D		9.7	m	19.4	0/1	7.0E+03	N		Below Background
IA-1	Iron	1/1	mg/kg			15300	15300	15300	D		15300	m	26600	0/1	1.0E+05	N		Below Background
IA-1	Lead	1/1	mg/kg			8.4	8.4	8.4	D		8.4	m	79.7	0/1	1.0E+02	N		Below Background
IA-1	Lithium	1/1	mg/kg			5.4	5.4	5.4	D		5.4	m	8.1	0/1	3.7E+03	N		Below Background
IA-1	Magnesium	4/4	mg/kg			6110	15400	11000	D	15600	15400	m	18400	0/4		N		Below Background
IA-1	Manganese	1/1	mg/kg			601	601	601	D		601	m	2830	0/1	4.5E+03	N		Below Background
IA-1	Molybdenum	2/8	mg/kg	8.6	11.6	1.3	17.7	9.82	D	12.8	12.8	u	22.7	0/8	9.4E+02	N		Below Background
IA-1	Nickel	1/1	mg/kg			13.4	13.4	13.4	D		13.4	m	33.9	0/1	3.7E+03	N		Below Background

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 2 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-1	Potassium	1/1	mg/kg			691	691	691	D		691	m	1140	0/1		N		Below Background
IA-1	Sodium	1/1	mg/kg			286	286	286	D		286	m	235	1/1		N		Essential Nutrient (low conc.)
IA-1	Strontium	1/1	mg/kg			24.2	24.2	24.2	D		24.2	m	26	0/1	1.0E+05	N		Below Background
IA-1	Titanium	1/1	mg/kg			239	239	239	D		239	m	269	0/1		N		Below Background
IA-1	Vanadium	1/1	mg/kg			19.1	19.1	19.1	D		19.1	m	31	0/1	1.3E+03	N		Below Background
IA-1	Zinc	1/1	mg/kg			48.3	48.3	48.3	D		48.3	m	278	0/1	1.0E+05	N		Below Background
IA-1	Toluene	2/3	mg/kg	0.003	0.003	0.003	0.0031	0.00303	D	0.00313	0.0031	m	0.11	0/3	5.2E+02	N		Below Background
IA-1	Trichloroethene	1/2	mg/kg	0.003	0.003	0.0066	0.0066	0.0048	D	0.0162	0.0066	m	0	1/2	6.1E+00	N		Max. detect < PRG
IA-1	trans-1,2-Dichloroethene	1/1	mg/kg			0.003	0.003	0.003	D		0.003	m		NA	2.1E+01	N		Max. detect < PRG
IA-1	Actinium-227	5/14	pCi/g	0.02	2.6	0.2	0.8	0.473	D	0.785	0.785	u	0.82	0/14		N		Below Background
IA-1	Potassium-40	11/11	pCi/g			12.38	16.76	14.8	L	15.7	15.7	u	16.8	0/11		N		Below Background
IA-1	Radium-226	26/35	pCi/g	1.6	3.9	0.8	2700	82	X	212	212	u	1.55	7/35		Y	Quant.	
IA-1	Radium-228	11/11	pCi/g			0.64	1.01	0.857	N	0.921	0.921	u	1.24	0/11		N		Below Background
IA-1	Thorium-228	11/11	pCi/g			0.7	1.63	1.21	L	1.42	1.42	u	2.04	0/11		N		Below Background
IA-1	Thorium-230	20/20	pCi/g			0	120	14.2	Z	27.7	27.7	u	2.89	6/20		Y	Quant.	
IA-1	Thorium-232	22/35	pCi/g	1	4.3	0.45	63	3.51	X	6.48	6.48	u	1.83	3/35		Y	Quant.	
IA-1	Uranium-235	2/11	pCi/g	0	0.16	0.22	0.25	0.112	D	0.155	0.155	u	0.25	0/11		N		Below Background
IA-1	Uranium-238	8/35	pCi/g	0.79	78.4	4.68	1200	52.9	D	110	110	u	2.02	8/35		Y	Quant.	
IA-10	Aluminum	4/4	mg/kg			6630	8720	7570	D	8580	8580	u	14700	0/4	1.0E+05	N		Below Background
IA-10	Antimony	1/14	mg/kg	1.7	7.5	195	195	18.7	D	42.7	42.7	u	5.2	1/14	7.5E+01	Y	Quant.	
IA-10	Arsenic	5/5	mg/kg			4.9	668	138	X	421	421	u	18	1/5	3.0E+00	Y	Quant.	
IA-10	Barium	4/4	mg/kg			136	156	146	D	157	156	m	279	0/4	1.0E+05	N		Below Background
IA-10	Boron	4/5	mg/kg	3.5	3.5	5.1	761	156	D	479	479	u	9.9	1/5	9.6E+03	N		Max. detect < PRG
IA-10	Cadmium	3/14	mg/kg	0.145	0.65	1.1	17.6	1.73	D	3.9	3.9	u	0.62	3/14	9.3E+01	N		Max. detect < PRG
IA-10	Calcium	4/4	mg/kg			2850	7120	4040	D	6460	6460	u	28900	0/4		N		Below Background
IA-10	Chromium	4/4	mg/kg			10.7	12.7	11.7	D	12.8	12.7	m	17.3	0/4	6.4E+01	N		Below Background
IA-10	Cobalt	5/5	mg/kg			4.8	185	41.5	X	118	118	u	31.7	1/5	2.9E+03	N		Max. detect < PRG
IA-10	Copper	4/4	mg/kg			11	12.5	12	D	12.9	12.5	m	19.4	0/4	7.0E+03	N		Below Background
IA-10	Iron	4/4	mg/kg			11600	13700	12700	D	13900	13700	m	26600	0/4	1.0E+05	N		Below Background
IA-10	Lead	4/4	mg/kg			13	21.8	17.4	D	21.7	21.7	u	79.7	0/4	1.0E+02	N		Below Background
IA-10	Lithium	3/4	mg/kg	2.6	2.6	4.1	4.5	3.83	D	4.81	4.5	m	8.1	0/4	3.7E+03	N		Below Background
IA-10	Magnesium	5/5	mg/kg			1850	7650	3470	L	9370	7650	m	18400	0/5		N		Below Background
IA-10	Manganese	4/4	mg/kg			474	843	576	D	786	786	u	2830	0/4	4.5E+03	N		Below Background
IA-10	Molybdenum	2/14	mg/kg	0.45	12.5	1.2	754	61.1	D	155	155	u	22.7	1/14	9.4E+02	N		Max. detect < PRG
IA-10	Nickel	4/4	mg/kg			11.3	16.1	13.3	D	15.7	15.7	u	33.9	0/4	3.7E+03	N		Below Background
IA-10	Potassium	4/4	mg/kg			696	971	846	D	981	971	m	1140	0/4		N		Below Background
IA-10	Selenium	2/14	mg/kg	0.15	12.5	29.9	704	58.7	D	147	147	u	0.55	2/14	9.4E+02	N		Max. detect < PRG
IA-10	Silver	1/5	mg/kg	0.35	0.38	13.9	13.9	3.08	D	8.84	8.84	u	2.6	1/5	9.4E+02	N		Max. detect < PRG
IA-10	Sodium	4/4	mg/kg			61.7	494	179	D	427	427	u	235	1/4		N		Essential Nutrient (low conc.)
IA-10	Strontium	4/4	mg/kg			13	15.9	14.8	D	16.2	15.9	m	26	0/4	1.0E+05	N		Below Background
IA-10	Thallium	2/14	mg/kg	0.375	12.5	1.3	726	59.1	D	150	150	u	0	2/14	1.5E+01	Y	Quant.	
IA-10	Titanium	4/4	mg/kg			208	243	229	D	248	243	m	269	0/4		N		Below Background
IA-10	Vanadium	4/4	mg/kg			18.2	20.8	19.7	D	21	20.8	m	31	0/4	1.3E+03	N		Below Background
IA-10	Zinc	4/4	mg/kg			40.8	53.1	47.5	D	53.7	53.1	m	278	0/4	1.0E+05	N		Below Background
IA-10	Benzo(a)pyrene	1/4	mg/kg	0.19	0.205	0.11	0.11	0.178	D	0.231	0.11	m	0.34	0/4	3.6E-01	N		Below Background
IA-10	Benzo(b)fluoranthene	1/4	mg/kg	0.19	0.205	0.24	0.24	0.21	D	0.235	0.235	u	0.31	0/4	3.6E+00	N		Below Background
IA-10	Benzo(ghi)perylene	1/4	mg/kg	0.19	0.205	0.18	0.18	0.195	D	0.209	0.18	m	0.39	0/4		N		Below Background
IA-10	Chrysene	1/4	mg/kg	0.19	0.205	0.15	0.15	0.188	D	0.218	0.15	m	0.57	0/4	3.6E+02	N		Below Background
IA-10	Fluoranthene	2/4	mg/kg	0.205	0.205	0.1	0.2	0.178	D	0.238	0.2	m	0.7	0/4	3.7E+03	N		Below Background

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 3 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-10	Indeno(1,2,3-cd)pyrene	1/4	mg/kg	0.19	0.205	0.33	0.33	0.233	D	0.309	0.309	u	0.35	0/4	3.6E+00	N		Below Background
IA-10	Pyrene	1/4	mg/kg	0.19	0.205	0.3	0.3	0.225	D	0.284	0.284	u	0.66	0/4	2.6E+03	N		Below Background
IA-10	2-Butanone	1/4	mg/kg	0.0115	0.0125	0.013	0.013	0.0124	D	0.0131	0.013	m	0.023	0/4	2.7E+03	N		Below Background
IA-10	Toluene	7/10	mg/kg	0.003	0.003	0.002	0.048	0.0132	L	0.0521	0.048	m	0.11	0/10	5.2E+02	N		Below Background
IA-10	Radium-226	44/58	pCi/g	0	3	0.6	44	2.64	Z	4.36	4.36	u	1.55	17/58		Y	Quant.	
IA-10	Thorium-230	60/63	pCi/g	0	1	0.4	46	6.04	Z	7.83	7.83	u	2.89	42/63		Y	Quant.	
IA-10	Thorium-232	43/58	pCi/g	0	4.2	0.7	4	1.78	Z	2.04	2.04	u	1.83	27/58		Y	Quant.	
IA-10	Uranium-238	2/58	pCi/g	0	57	43.9	45	8.23	D	10.9	10.9	u	2.02	2/58		N		<5% detected
IA-2	Fluoride	1/1	mg/kg			32.4	32.4	32.4	D		32.4	m		NA	6.4E+03	N		Max. detect < PRG
IA-2	Aluminum	5/5	mg/kg			7180	17200	10100	L	16100	16100	u	14700	1/5	1.0E+05	N		Max. detect < PRG
IA-2	Arsenic	7/7	mg/kg			3.3	237	68.2	X	145	145	u	18	2/7	3.0E+00	Y	Quant.	
IA-2	Barium	5/5	mg/kg			76.1	218	131	L	219	218	m	279	0/5	1.0E+05	N		Below Background
IA-2	Beryllium	3/5	mg/kg	0.295	0.39	0.67	0.88	0.609	D	0.854	0.854	u	0.83	1/5	3.4E+02	N		Max. detect < PRG
IA-2	Boron	5/5	mg/kg			5.8	11.6	7.72	L	10.9	10.9	u	9.9	1/5	9.6E+03	N		Max. detect < PRG
IA-2	Cadmium	6/26	mg/kg	0.155	0.6	0.32	5.9	0.879	D	1.31	1.31	u	0.62	4/26	9.3E+01	N		Max. detect < PRG
IA-2	Calcium	5/5	mg/kg			4250	52900	17900	L	443000	52900	m	28900	1/5		N		Essential Nutrient (low conc.)
IA-2	Chromium	5/5	mg/kg			11.2	21.6	16	L	21.3	21.3	u	17.3	1/5	6.4E+01	N		Max. detect < PRG
IA-2	Cobalt	9/9	mg/kg			3.7	228	67.5	L	2810	228	m	31.7	4/9	2.9E+03	N		Max. detect < PRG
IA-2	Copper	8/8	mg/kg			10.7	440	124	X	235	235	u	19.4	3/8	7.0E+03	N		Max. detect < PRG
IA-2	Iron	5/5	mg/kg			11700	22400	17000	N	21700	21700	u	26600	0/5	1.0E+05	N		Below Background
IA-2	Lead	5/5	mg/kg			7.4	12.4	9.98	L	13.4	12.4	m	79.7	0/5	1.0E+02	N		Below Background
IA-2	Lithium	3/5	mg/kg	4	4.25	7.6	11.1	6.97	D	9.77	9.77	u	8.1	1/5	3.7E+03	N		Max. detect < PRG
IA-2	Magnesium	10/10	mg/kg			3510	24900	10600	L	17300	17300	u	18400	1/10		N		Essential Nutrient (low conc.)
IA-2	Manganese	5/5	mg/kg			165	772	459	L	1630	772	m	2830	0/5	4.5E+03	N		Below Background
IA-2	Molybdenum	6/26	mg/kg	0.465	12.05	1.2	151	19.2	D	30.8	30.8	u	22.7	3/26	9.4E+02	N		Max. detect < PRG
IA-2	Nickel	5/5	mg/kg			13.2	20	16.6	L	19.8	19.8	u	33.9	0/5	3.7E+03	N		Below Background
IA-2	Potassium	5/5	mg/kg			680	1710	1070	L	1730	1710	m	1140	1/5		N		Essential Nutrient (low conc.)
IA-2	Selenium	1/26	mg/kg	0.165	12.05	2.1	2.1	8.57	D	9.94	2.1	m	0.55	1/26	9.4E+02	N		Max. detect < PRG
IA-2	Sodium	5/5	mg/kg			114	285	196	L	362	285	m	235	2/5		N		Essential Nutrient (low conc.)
IA-2	Strontium	5/5	mg/kg			15.2	46.9	25.7	L	47.9	46.9	m	26	1/5	1.0E+05	N		Max. detect < PRG
IA-2	Titanium	5/5	mg/kg			238	312	273	L	313	312	m	269	2/5		Y	Qual.	
IA-2	Uranium	2/5	mg/kg	7.65	7.9	18	155	39.3	D	101	101	u	0	2/5		Y	Quant.	
IA-2	Vanadium	7/7	mg/kg			22	862	257	X	541	541	u	31	5/7	1.3E+03	N		Max. detect < PRG
IA-2	Zinc	5/5	mg/kg			38.6	60.3	48.7	L	59.6	59.6	u	278	0/5	1.0E+05	N		Below Background
IA-2	Toxaphene	1/5	mg/kg	0.042	0.11	0.05	0.05	0.0709	D	0.105	0.05	m	0	1/5	2.7E+00	N		Max. detect < PRG
IA-2	Benz(a)anthracene	1/5	mg/kg	0.205	0.215	0.1	0.1	0.188	D	0.235	0.1	m	0.3	0/5	3.6E+00	N		Below Background
IA-2	Benzo(a)pyrene	1/5	mg/kg	0.205	0.215	0.1	0.1	0.188	D	0.235	0.1	m	0.34	0/5	3.6E-01	N		Below Background
IA-2	Butyl benzyl phthalate	3/5	mg/kg	0.21	0.215	0.11	0.26	0.211	D	0.269	0.26	m	0.25	2/5	9.3E+02	N		Max. detect < PRG
IA-2	Chrysene	1/5	mg/kg	0.205	0.215	0.051	0.051	0.178	D	0.246	0.051	m	0.57	0/5	3.6E+02	N		Below Background
IA-2	Fluoranthene	1/5	mg/kg	0.205	0.215	0.12	0.12	0.192	D	0.231	0.12	m	0.7	0/5	3.7E+03	N		Below Background
IA-2	Indeno(1,2,3-cd)pyrene	1/5	mg/kg	0.205	0.215	0.091	0.091	0.186	D	0.237	0.091	m	0.35	0/5	3.6E+00	N		Below Background
IA-2	Phenanthrene	1/5	mg/kg	0.205	0.215	0.087	0.087	0.185	D	0.238	0.087	m	0.28	0/5		N		Below Background
IA-2	Pyrene	1/5	mg/kg	0.205	0.215	0.079	0.079	0.184	D	0.24	0.079	m	0.66	0/5	2.6E+03	N		Below Background
IA-2	1,2-Dichloroethene	1/5	mg/kg	0.003	0.003	0.022	0.022	0.0068	D	0.0149	0.0149	u	0	1/5		Y	Quant.	
IA-2	2-Butanone	1/5	mg/kg	0.006	0.0125	0.013	0.013	0.0089	D	0.0123	0.0123	u	0.023	0/5	2.7E+03	N		Below Background
IA-2	Toluene	9/12	mg/kg	0.003	0.003	0.0022	0.21	0.0225	X	0.0531	0.0531	u	0.11	1/12	5.2E+02	N		Max. detect < PRG
IA-2	Trichloroethene	2/6	mg/kg	0.003	0.003	0.0018	0.058	0.012	D	0.0305	0.0305	u	0	2/6	6.1E+00	N		Max. detect < PRG
IA-2	trans-1,2-Dichloroethene	1/1	mg/kg			0.0019	0.0019	0.0019	D		0.0019	m		NA	2.1E+01	N		Max. detect < PRG
IA-2	Actinium-227	44/57	pCi/g	0.04	0.25	0.18	130.4	3.27	X	7.14	7.14	u	0.82	11/57		Y	Quant.	

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 4 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-2	Americium-241	4/57	pCi/g	-0.03	0.13	0.06	2.58	0.0921	D	0.17	0.17	u	0	4/57		Y	Quant.	
IA-2	Cesium-137	5/57	pCi/g	-0.02	0.08	0.07	3.09	0.0621	D	0.153	0.153	u	0.57	1/57		Y	Quant.	
IA-2	Potassium-40	56/57	pCi/g	8.43	8.43	9.82	25.2	15.7	X	16.4	16.4	u	16.8	14/57		Y	Quant.	
IA-2	Protactinium-231	5/57	pCi/g	-0.48	1.06	2.33	179.3	3.99	D	9.28	9.28	u	1.13	5/57		Y	Quant.	
IA-2	Radium-226	93/130	pCi/g	0.3	5	0.5	590	17.2	X	28.4	28.4	u	1.55	31/130		Y	Quant.	
IA-2	Radium-228	57/57	pCi/g			0.67	4.82	1.02	X	1.14	1.14	u	1.24	5/57		Y	Quant.	
IA-2	Thorium-228	57/57	pCi/g			0.74	4.82	1.43	X	1.58	1.58	u	2.04	5/57		Y	Quant.	
IA-2	Thorium-230	90/91	pCi/g	0	0	0	14070	198	Z	456	456	u	2.89	41/91		Y	Quant.	
IA-2	Thorium-232	78/130	pCi/g	0.4	7.6	0.6	4.82	2.16	X	2.35	2.35	u	1.83	11/130		Y	Quant.	
IA-2	Uranium-235	24/57	pCi/g	-0.04	0.25	0.19	37.21	1.16	D	2.28	2.28	u	0.25	20/57		Y	Quant.	
IA-2	Uranium-238	26/128	pCi/g	0.33	260	3.99	706	36.6	D	49.9	49.9	u	2.02	26/128		Y	Quant.	
IA-3	Aluminum	7/7	mg/kg			8660	23200	14200	L	19900	19900	u	14700	2/7	1.0E+05	N		Max. detect < PRG
IA-3	Antimony	3/25	mg/kg	1.65	11.9	3.8	53.2	7.63	D	11	11	u	5.2	2/25	7.5E+01	N		Max. detect < PRG
IA-3	Arsenic	7/7	mg/kg			3.7	11.7	7.36	N	9.28	9.28	u	18	0/7	3.0E+00	N		Below Background
IA-3	Barium	7/7	mg/kg			70.4	232	154	N	195	195	u	279	0/7	1.0E+05	N		Below Background
IA-3	Beryllium	5/7	mg/kg	0.31	0.34	0.84	2.4	1.02	L	2.74	2.4	m	0.83	5/7	3.4E+02	N		Max. detect < PRG
IA-3	Boron	7/7	mg/kg			6	14.8	9.27	L	12	12	u	9.9	2/7	9.6E+03	N		Max. detect < PRG
IA-3	Cadmium	7/25	mg/kg	0.14	1	0.48	50.4	2.67	D	6.07	6.07	u	0.62	5/25	9.3E+01	N		Max. detect < PRG
IA-3	Calcium	7/7	mg/kg			4090	81300	25800	L	237000	81300	m	28900	3/7		N		Essential Nutrient (low conc.)
IA-3	Chromium	8/8	mg/kg			14.7	3240	424	X	1190	1190	u	17.3	6/8	6.4E+01	Y	Quant.	
IA-3	Cobalt	10/10	mg/kg			4.8	770	111	X	251	251	u	31.7	3/10	2.9E+03	N		Max. detect < PRG
IA-3	Copper	9/9	mg/kg			12.9	909	130	X	313	313	u	19.4	4/9	7.0E+03	N		Max. detect < PRG
IA-3	Iron	7/7	mg/kg			11700	30200	21300	N	26000	26000	u	26600	2/7	1.0E+05	N		Essential Nutrient (low conc.)
IA-3	Lead	9/9	mg/kg			10.3	1200	197	X	441	441	u	79.7	3/9	1.0E+02	Y	Qual.	
IA-3	Lithium	7/7	mg/kg			7	14.6	9.84	L	12.3	12.3	u	8.1	5/7	3.7E+03	N		Max. detect < PRG
IA-3	Magnesium	13/13	mg/kg			21	20200	8720	N	11500	11500	u	18400	1/13		N		Essential Nutrient (low conc.)
IA-3	Manganese	7/7	mg/kg			281	1330	730	L	1570	1330	m	2830	0/7	4.5E+03	N		Below Background
IA-3	Mercury	1/7	mg/kg	0.03	0.035	0.07	0.07	0.0364	D	0.0474	0.0474	u	0.69	0/7	5.6E+01	N		Below Background
IA-3	Molybdenum	6/25	mg/kg	0.415	19.85	1.7	74.7	14	D	20	20	u	22.7	3/25	9.4E+02	N		Max. detect < PRG
IA-3	Nickel	8/8	mg/kg			15.4	1460	212	X	550	550	u	33.9	3/8	3.7E+03	N		Max. detect < PRG
IA-3	Potassium	7/7	mg/kg			553	4230	1730	L	3880	3880	u	1140	5/7		N		Essential Nutrient (low conc.)
IA-3	Sodium	7/7	mg/kg			124	405	250	L	384	384	u	235	3/7		N		Essential Nutrient (low conc.)
IA-3	Strontium	7/7	mg/kg			23.6	146	50.4	L	110	110	u	26	4/7	1.0E+05	N		Max. detect < PRG
IA-3	Thallium	6/25	mg/kg	0.8	19.85	0.96	1.8	8.69	D	10.5	1.8	m	0	6/25	1.5E+01	N		Max. detect < PRG
IA-3	Titanium	7/7	mg/kg			66.2	416	268	N	351	351	u	269	4/7		Y	Qual.	
IA-3	Uranium	2/7	mg/kg	6.9	8.15	15.6	129	26.1	D	59.5	59.5	u	0	2/7		Y	Quant.	
IA-3	Vanadium	7/7	mg/kg			18.9	57.2	33.9	L	49.6	49.6	u	31	4/7	1.3E+03	N		Max. detect < PRG
IA-3	Zinc	9/9	mg/kg			46.7	4330	598	X	1470	1470	u	278	2/9	1.0E+05	N		Max. detect < PRG
IA-3	MCPP	1/7	mg/kg	4.5	5.5	11	11	5.77	D	7.48	7.48	u	0	1/7	1.1E+02	N		Max. detect < PRG
IA-3	Benz(a)anthracene	2/7	mg/kg	0.19	0.22	0.09	0.18	0.186	D	0.218	0.18	m	0.3	0/7	3.6E+00	N		Below Background
IA-3	Benzo(a)pyrene	2/7	mg/kg	0.19	0.22	0.077	0.18	0.184	D	0.22	0.18	m	0.34	0/7	3.6E-01	N		Below Background
IA-3	Benzo(b)fluoranthene	1/7	mg/kg	0.185	0.22	0.083	0.083	0.185	D	0.22	0.083	m	0.31	0/7	3.6E+00	N		Below Background
IA-3	Benzo(ghi)perylene	1/7	mg/kg	0.19	0.22	0.19	0.19	0.202	D	0.211	0.19	m	0.39	0/7		N		Below Background
IA-3	Benzo(k)fluoranthene	1/7	mg/kg	0.19	0.22	0.066	0.066	0.184	D	0.224	0.066	m	0.29	0/7	3.6E+01	N		Below Background
IA-3	Butyl benzyl phthalate	1/7	mg/kg	0.185	0.22	0.1	0.1	0.188	D	0.218	0.1	m	0.25	0/7	9.3E+02	N		Below Background
IA-3	Chrysene	1/7	mg/kg	0.19	0.22	0.21	0.21	0.205	D	0.213	0.21	m	0.57	0/7	3.6E+02	N		Below Background
IA-3	Fluoranthene	2/7	mg/kg	0.19	0.22	0.1	0.31	0.206	D	0.251	0.251	u	0.7	0/7	3.7E+03	N		Below Background
IA-3	Indeno(1,2,3-cd)pyrene	2/7	mg/kg	0.19	0.22	0.089	0.18	0.186	D	0.219	0.18	m	0.35	0/7	3.6E+00	N		Below Background
IA-3	Phenanthrene	2/7	mg/kg	0.19	0.22	0.042	0.19	0.18	D	0.226	0.19	m	0.28	0/7		N		Below Background

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 5 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-3	Pyrene	2/7	mg/kg	0.19	0.22	0.046	0.27	0.192	D	0.243	0.243	u	0.66	0/7	2.6E+03	N		Below Background
IA-3	1,2-Dichloroethene	1/7	mg/kg	0.003	0.0035	0.003	0.003	0.00307	D	0.00321	0.003	m	0	1/7		Y	Quant.	
IA-3	2-Butanone	1/7	mg/kg	0.0055	0.0065	0.006	0.006	0.00614	D	0.00642	0.006	m	0.023	0/7	2.7E+03	N		Below Background
IA-3	Dimethylbenzene	2/7	mg/kg	0.003	0.0035	0.006	0.01	0.0045	D	0.00645	0.00645	u	0	2/7		Y	Quant.	
IA-3	Methylene chloride	2/7	mg/kg	0.003	0.004	0.13	0.13	0.0394	D	0.0849	0.0849	u	0.007	2/7	2.0E+01	N		Max. detect < PRG
IA-3	Toluene	6/13	mg/kg	0.003	0.0035	0.0015	0.055	0.011	D	0.0193	0.0193	u	0.11	0/13	5.2E+02	N		Below Background
IA-3	Trichloroethene	6/11	mg/kg	0.003	0.0035	0.0016	0.054	0.00898	X	0.0174	0.0174	u	0	6/11	6.1E+00	N		Max. detect < PRG
IA-3	trans-1,2-Dichloroethene	3/3	mg/kg			0.0013	0.0077	0.00403	D	0.0096	0.0077	m		NA	2.1E+01	N		Max. detect < PRG
IA-3	Actinium-227	37/54	pCi/g	0	0.51	0.19	99.15	3.58	Z	6.98	6.98	u	0.82	15/54		Y	Quant.	
IA-3	Americium-241	5/53	pCi/g	-0.03	0.19	0.13	4.28	0.175	D	0.323	0.323	u	0	5/53		Y	Quant.	
IA-3	Cesium-137	5/53	pCi/g	-0.02	0.21	0.03	0.12	0.0145	D	0.024	0.024	u	0.57	0/53		N		Below Background
IA-3	Potassium-40	53/53	pCi/g			7.64	19.71	16	X	16.5	16.5	u	16.8	21/53		Y	Quant.	
IA-3	Protactinium-231	7/54	pCi/g	-0.41	1.31	1.5	56.27	2.24	D	4.25	4.25	u	1.13	7/54		Y	Quant.	
IA-3	Radium-226	132/167	pCi/g	1.5	4.7	0.7	5620	57.7	X	116	116	u	1.55	64/167		Y	Quant.	
IA-3	Radium-228	53/53	pCi/g			0.42	1.61	0.973	X	1.01	1.01	u	1.24	2/53		Y	Quant.	
IA-3	Thorium-228	53/53	pCi/g			0.59	1.79	1.18	N	1.24	1.24	u	2.04	0/53		N		Below Background
IA-3	Thorium-230	96/97	pCi/g	0	0	0.6	7241	189	Z	347	347	u	2.89	61/97		Y	Quant.	
IA-3	Thorium-232	114/166	pCi/g	0.5	50.4	0.4	5	2.23	X	2.74	2.74	u	1.83	22/166		Y	Quant.	
IA-3	Uranium-235	33/53	pCi/g	-0.04	0.31	0.19	17.99	1.04	Z	1.7	1.7	u	0.25	26/53		Y	Quant.	
IA-3	Uranium-238	47/167	pCi/g	0	212	3.04	1600	49.9	D	72.1	72.1	u	2.02	47/167		Y	Quant.	
IA-4	Fluoride	11/11	mg/kg			2.26	43.3	7.22	X	13.9	13.9	u		NA	6.4E+03	N		Max. detect < PRG
IA-4	Sulfide	3/11	mg/kg	6.4	13.6	13.8	23.8	10.8	D	14.3	14.3	u		NA		Y	Qual.	
IA-4	Aluminum	12/12	mg/kg			5990	19000	11500	L	14700	14700	u	14700	2/12	1.0E+05	N		Max. detect < PRG
IA-4	Arsenic	13/13	mg/kg			3.1	50.8	9.88	X	16.2	16.2	u	18	1/13	3.0E+00	Y	Quant.	
IA-4	Barium	14/14	mg/kg			58.5	3750	469	X	931	931	u	279	4/14	1.0E+05	N		Max. detect < PRG
IA-4	Beryllium	2/12	mg/kg	0.245	0.405	0.98	1	0.442	D	0.577	0.577	u	0.83	2/12	3.4E+02	N		Max. detect < PRG
IA-4	Boron	10/12	mg/kg	4.45	5.8	5.7	11.9	7.98	L	9.66	9.66	u	9.9	2/12	9.6E+03	N		Max. detect < PRG
IA-4	Cadmium	4/24	mg/kg	0.155	0.65	0.45	4.5	0.585	D	0.888	0.888	u	0.62	2/24	9.3E+01	N		Max. detect < PRG
IA-4	Calcium	12/12	mg/kg			3610	30200	13800	X	19700	19700	u	28900	1/12		N		Essential Nutrient (low conc.)
IA-4	Chromium	12/12	mg/kg			10.3	23.9	18.2	N	20.5	20.5	u	17.3	7/12	6.4E+01	N		Max. detect < PRG
IA-4	Cobalt	17/17	mg/kg			4.7	1510	133	X	289	289	u	31.7	5/17	2.9E+03	N		Max. detect < PRG
IA-4	Copper	14/14	mg/kg			9.8	876	89.5	X	200	200	u	19.4	3/14	7.0E+03	N		Max. detect < PRG
IA-4	Iron	12/12	mg/kg			2600	24200	15100	N	18100	18100	u	26600	0/12	1.0E+05	N		Below Background
IA-4	Lead	14/14	mg/kg			6.9	408	56.3	X	114	114	u	79.7	2/14	1.0E+02	Y	Qual.	
IA-4	Lithium	12/12	mg/kg			5.2	10.6	7.94	N	8.9	8.9	u	8.1	5/12	3.7E+03	N		Max. detect < PRG
IA-4	Magnesium	17/17	mg/kg			2690	18500	10100	X	12700	12700	u	18400	1/17		N		Essential Nutrient (low conc.)
IA-4	Manganese	12/12	mg/kg			110	1760	472	L	934	934	u	2830	0/12	4.5E+03	N		Below Background
IA-4	Mercury	1/12	mg/kg	0.03	0.035	0.07	0.07	0.0338	D	0.0397	0.0397	u	0.69	0/12	5.6E+01	N		Below Background
IA-4	Molybdenum	6/24	mg/kg	0.455	12.7	1.4	71.9	9.63	D	14.9	14.9	u	22.7	2/24	9.4E+02	N		Max. detect < PRG
IA-4	Nickel	13/13	mg/kg			11.4	2010	170	X	443	443	u	33.9	1/13	3.7E+03	N		Max. detect < PRG
IA-4	Potassium	12/12	mg/kg			562	1450	896	L	1090	1090	u	1140	3/12		N		Essential Nutrient (low conc.)
IA-4	Selenium	5/24	mg/kg	0.46	12.7	1.3	29.3	6.81	D	9.24	9.24	u	0.55	5/24	9.4E+02	N		Max. detect < PRG
IA-4	Sodium	12/12	mg/kg			197	300	263	N	281	281	u	235	10/12		N		Essential Nutrient (low conc.)
IA-4	Strontium	12/12	mg/kg			18.4	28.7	23.7	N	25.3	25.3	u	26	4/12	1.0E+05	N		Max. detect < PRG
IA-4	Thallium	11/24	mg/kg	0.21	12.7	0.53	3.3	6.07	D	7.84	3.3	m	0	11/24	1.5E+01	N		Max. detect < PRG
IA-4	Titanium	12/12	mg/kg			170	399	281	L	326	326	u	269	6/12		Y	Qual.	
IA-4	Uranium	2/12	mg/kg	7.6	7.95	20.7	73.6	14.3	D	24.2	24.2	u	0	2/12		Y	Quant.	
IA-4	Vanadium	12/12	mg/kg			18.2	39.3	30.7	N	34.2	34.2	u	31	6/12	1.3E+03	N		Max. detect < PRG
IA-4	Zinc	12/12	mg/kg			31.8	59.3	44.4	L	49.5	49.5	u	278	0/12	1.0E+05	N		Below Background

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 6 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-4	Fluoranthene	1/4	mg/kg	0.21	0.21	0.077	0.077	0.177	D	0.255	0.077	m	0.7	0/4	3.7E+03	N		Below Background
IA-4	Pyrene	1/4	mg/kg	0.21	0.21	0.28	0.28	0.228	D	0.269	0.269	u	0.66	0/4	2.6E+03	N		Below Background
IA-4	Toluene	5/9	mg/kg	0.003	0.003	0.0018	0.12	0.0165	X	0.0406	0.0406	u	0.11	1/9	5.2E+02	N		Max. detect < PRG
IA-4	Actinium-227	26/41	pCi/g	0.08	0.39	0.16	16.18	0.797	X	1.47	1.47	u	0.82	3/41		Y	Quant.	
IA-4	Americium-241	5/40	pCi/g	-0.02	0.09	0.06	4.69	0.162	D	0.357	0.357	u	0	5/40		Y	Quant.	
IA-4	Cesium-137	1/40	pCi/g	-0.03	0.05	0.05	0.05	0.00225	D	0.00698	0.00698	u	0.57	0/40		N		Below Background
IA-4	Potassium-40	40/40	pCi/g			12.32	17.85	16.1	N	16.4	16.4	u	16.8	11/40		Y	Quant.	
IA-4	Protactinium-231	2/41	pCi/g	-0.48	2.72	2.49	3.98	0.41	D	0.628	0.628	u	1.13	2/41		N		<5% detected
IA-4	Radium-226	64/105	pCi/g	1.2	4.4	0.62	1740	74	X	118	118	u	1.55	27/105		Y	Quant.	
IA-4	Radium-228	40/40	pCi/g			0.78	1.25	0.93	X	0.955	0.955	u	1.24	1/40		Y	Quant.	
IA-4	Thorium-228	40/40	pCi/g			0.57	2.2	1.25	L	1.36	1.36	u	2.04	1/40		Y	Quant.	
IA-4	Thorium-230	74/74	pCi/g			1.08	2440	107	X	182	182	u	2.89	45/74		Y	Quant.	
IA-4	Thorium-232	50/103	pCi/g	2	18.9	0.56	7	3.18	D	3.69	3.69	u	1.83	11/103		Y	Quant.	
IA-4	Uranium-235	21/40	pCi/g	-0.04	0.19	0.18	82.19	2.46	Z	5.91	5.91	u	0.25	16/40		Y	Quant.	
IA-4	Uranium-238	12/104	pCi/g	0.76	352	3.34	1769	56.4	D	86.1	86.1	u	2.02	12/104		Y	Quant.	
IA-5	Fluoride	16/16	mg/kg			2.54	21.1	4.9	X	6.84	6.84	u		NA	6.4E+03	N		Max. detect < PRG
IA-5	Sulfide	2/19	mg/kg	0.00655	14.1	19.4	23.5	8.83	D	11	11	u		NA		Y	Qual.	
IA-5	Aluminum	26/26	mg/kg			6680	17100	9950	L	11000	11000	u	14700	2/26	1.0E+05	N		Max. detect < PRG
IA-5	Arsenic	26/26	mg/kg			2.9	26.2	8.38	L	10.8	10.8	u	18	1/26	3.0E+00	Y	Quant.	
IA-5	Barium	27/27	mg/kg			40.6	4550	318	X	599	599	u	279	2/27	1.0E+05	N		Max. detect < PRG
IA-5	Beryllium	8/26	mg/kg	0.255	0.4	0.75	1.4	0.51	D	0.617	0.617	u	0.83	6/26	3.4E+02	N		Max. detect < PRG
IA-5	Boron	23/26	mg/kg	1.15	1.2	2.3	12.8	8.15	X	9.35	9.35	u	9.9	8/26	9.6E+03	N		Max. detect < PRG
IA-5	Cadmium	4/48	mg/kg	0.155	0.8	0.79	4.2	0.491	D	0.64	0.64	u	0.62	4/48	9.3E+01	N		Max. detect < PRG
IA-5	Calcium	26/26	mg/kg			4050	35600	18000	X	21900	21900	u	28900	7/26		N		Essential Nutrient (low conc.)
IA-5	Chromium	26/26	mg/kg			11.4	21.8	16.4	L	17.5	17.5	u	17.3	9/26	6.4E+01	N		Max. detect < PRG
IA-5	Cobalt	33/33	mg/kg			5.1	308	54.2	X	81.2	81.2	u	31.7	10/33	2.9E+03	N		Max. detect < PRG
IA-5	Copper	28/29	mg/kg	5.85	5.85	6.1	191	31.7	X	46.6	46.6	u	19.4	6/29	7.0E+03	N		Max. detect < PRG
IA-5	Iron	26/26	mg/kg			9120	28300	18300	N	19800	19800	u	26600	2/26	1.0E+05	N		Essential Nutrient (low conc.)
IA-5	Lead	26/26	mg/kg			6	25.7	10	X	11.3	11.3	u	79.7	0/26	1.0E+02	N		Below Background
IA-5	Lithium	26/26	mg/kg			5.1	10.1	7.65	L	8.2	8.2	u	8.1	8/26	3.7E+03	N		Max. detect < PRG
IA-5	Magnesium	36/36	mg/kg			2730	26900	11700	X	13600	13600	u	18400	8/36		N		Essential Nutrient (low conc.)
IA-5	Manganese	26/26	mg/kg			109	1220	556	N	651	651	u	2830	0/26	4.5E+03	N		Below Background
IA-5	Molybdenum	21/48	mg/kg	0.455	12.4	1	29.8	8.29	D	10.1	10.1	u	22.7	4/48	9.4E+02	N		Max. detect < PRG
IA-5	Nickel	26/26	mg/kg			12.1	108	24.6	X	31.8	31.8	u	33.9	3/26	3.7E+03	N		Max. detect < PRG
IA-5	Potassium	26/26	mg/kg			570	1400	921	N	990	990	u	1140	3/26		N		Essential Nutrient (low conc.)
IA-5	Selenium	22/48	mg/kg	0.165	12.4	0.38	19.6	6.18	D	7.47	7.47	u	0.55	17/48	9.4E+02	N		Max. detect < PRG
IA-5	Silver	1/26	mg/kg	0.37	0.44	0.81	0.81	0.403	D	0.431	0.431	u	2.6	0/26	9.4E+02	N		Below Background
IA-5	Sodium	26/26	mg/kg			102	534	236	L	274	274	u	235	11/26		N		Essential Nutrient (low conc.)
IA-5	Strontium	26/26	mg/kg			16.6	210	32.4	X	44.6	44.6	u	26	11/26	1.0E+05	N		Max. detect < PRG
IA-5	Thallium	22/48	mg/kg	0.21	12.4	0.74	2.5	5.78	D	6.98	2.5	m	0	22/48	1.5E+01	N		Max. detect < PRG
IA-5	Titanium	26/26	mg/kg			99.1	347	257	X	275	275	u	269	9/26		Y	Qual.	
IA-5	Uranium	4/26	mg/kg	7.65	8.95	11.1	45.1	10.2	D	12.8	12.8	u	0	4/26		Y	Quant.	
IA-5	Vanadium	25/26	mg/kg	10.1	10.1	22	111	32.4	X	38.1	38.1	u	31	11/26	1.3E+03	N		Max. detect < PRG
IA-5	Zinc	26/26	mg/kg			26.7	67.9	46.5	N	49.8	49.8	u	278	0/26	1.0E+05	N		Below Background
IA-5	Dalapon	1/12	mg/kg	0.0245	0.05	0.15	0.15	0.0378	D	0.0565	0.0565	u	0	1/12	3.2E+03	N		Max. detect < PRG
IA-5	MCPA	2/12	mg/kg	4.9	23.5	19	49	11.4	D	18.3	18.3	u	0	2/12	5.3E+01	N		Max. detect < PRG
IA-5	Silvex	4/12	mg/kg	0.012	0.026	0.049	0.083	0.0323	D	0.0468	0.0468	u	0	4/12	8.6E+02	N		Max. detect < PRG
IA-5	2-Methylnaphthalene	1/12	mg/kg	0.205	0.215	0.1	0.1	0.2	D	0.217	0.1	m	0	1/12		Y	Qual.	
IA-5	Benz(a)anthracene	2/12	mg/kg	0.205	0.215	0.19	0.26	0.212	D	0.221	0.221	u	0.3	0/12	3.6E+00	N		Below Background

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 7 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-5	Bis(2-ethylhexyl)phthalate	1/12	mg/kg	0.205	0.295	0.17	0.17	0.214	D	0.229	0.17	m	0.18	0/12	2.1E+02	N		Below Background
IA-5	Butyl benzyl phthalate	2/12	mg/kg	0.205	0.215	0.31	0.31	0.226	D	0.246	0.246	u	0.25	2/12	9.3E+02	N		Max. detect < PRG
IA-5	Chrysene	2/12	mg/kg	0.205	0.215	0.14	0.14	0.198	D	0.212	0.14	m	0.57	0/12	3.6E+02	N		Below Background
IA-5	Di-n-octylphthalate	2/12	mg/kg	0.205	0.215	0.13	0.15	0.198	D	0.213	0.15	m	0	2/12	1.0E+04	N		Max. detect < PRG
IA-5	Fluoranthene	2/12	mg/kg	0.205	0.215	0.079	0.15	0.194	D	0.214	0.15	m	0.7	0/12	3.7E+03	N		Below Background
IA-5	Naphthalene	1/12	mg/kg	0.205	0.215	0.13	0.13	0.203	D	0.215	0.13	m	0	1/12	1.9E+01	N		Max. detect < PRG
IA-5	Phenanthrene	3/12	mg/kg	0.205	0.215	0.069	0.23	0.189	D	0.217	0.217	u	0.28	0/12		N		Below Background
IA-5	Pyrene	3/12	mg/kg	0.205	0.215	0.29	0.37	0.236	D	0.263	0.263	u	0.66	0/12	2.6E+03	N		Below Background
IA-5	Acetone	2/12	mg/kg	0.006	0.0215	0.016	0.023	0.0115	D	0.015	0.015	u	0.017	1/12	6.1E+02	N		Max. detect < PRG
IA-5	Methylene chloride	1/12	mg/kg	0.003	0.018	0.001	0.001	0.00438	D	0.00667	0.001	m	0.007	0/12	2.0E+01	N		Below Background
IA-5	Toluene	8/18	mg/kg	0.003	0.003	0.0024	1.2	0.142	D	0.282	0.282	u	0.11	4/18	5.2E+02	N		Max. detect < PRG
IA-5	Actinium-227	89/131	pCi/g	-0.09	0.32	0.16	292.7	3.54	Z	7.31	7.31	u	0.82	16/131		Y	Quant.	
IA-5	Americium-241	7/131	pCi/g	-5.04	0.35	0.07	1.5	0.0227	D	0.091	0.091	u	0	7/131		Y	Quant.	
IA-5	Cesium-137	3/131	pCi/g	-0.03	0.06	0.06	2.35	0.0192	D	0.049	0.049	u	0.57	1/131		N		<5% detected
IA-5	Potassium-40	130/131	pCi/g	5.21	5.21	11.42	17.84	15	X	15.2	15.2	u	16.8	7/131		Y	Quant.	
IA-5	Protactinium-231	11/131	pCi/g	-0.42	1.16	1.21	346.4	4.03	D	8.48	8.48	u	1.13	11/131		Y	Quant.	
IA-5	Radium-226	232/315	pCi/g	1	5.3	0.59	900	13.4	X	19.3	19.3	u	1.55	116/315		Y	Quant.	
IA-5	Radium-228	130/131	pCi/g	0.95	0.95	0.71	3.56	0.944	X	0.983	0.983	u	1.24	5/131		Y	Quant.	
IA-5	Thorium-228	130/131	pCi/g	1.04	1.04	0.61	3.56	1.24	X	1.28	1.28	u	2.04	2/131		Y	Quant.	
IA-5	Thorium-230	246/246	pCi/g			0.78	14680	190	X	296	296	u	2.89	157/246		Y	Quant.	
IA-5	Thorium-232	197/316	pCi/g	1	12	0.42	7.5	2.19	X	2.33	2.33	u	1.83	35/316		Y	Quant.	
IA-5	Uranium-235	51/131	pCi/g	-0.05	0.26	0.17	32.11	0.715	D	1.18	1.18	u	0.25	32/131		Y	Quant.	
IA-5	Uranium-238	41/316	pCi/g	0.37	256	5.08	1000	27.3	D	33.6	33.6	u	2.02	41/316		Y	Quant.	
IA-6	Fluoride	2/2	mg/kg			40.7	62.9	51.8	D	122	62.9	m		NA	6.4E+03	N		Max. detect < PRG
IA-6	Cobalt	1/1	mg/kg			62.3	62.3	62.3	D		62.3	m	31.7	1/1	2.9E+03	N		Max. detect < PRG
IA-6	Magnesium	1/1	mg/kg			12200	12200	12200	D		12200	m	18400	0/1		N		Below Background
IA-6	Actinium-227	2/5	pCi/g	0.11	0.15	0.22	17.89	3.7	D	11.3	11.3	u	0.82	1/5		Y	Quant.	
IA-6	Potassium-40	5/5	pCi/g			13.87	16.42	15.4	N	16.4	16.4	u	16.8	0/5		N		Below Background
IA-6	Protactinium-231	1/5	pCi/g	-0.19	0.14	18.78	18.78	3.74	D	11.8	11.8	u	1.13	1/5		Y	Quant.	
IA-6	Radium-226	16/32	pCi/g	1.4	2.7	0.85	36	3.77	X	5.77	5.77	u	1.55	10/32		Y	Quant.	
IA-6	Radium-228	5/5	pCi/g			0.84	1.37	1	L	1.24	1.24	u	1.24	1/5		Y	Quant.	
IA-6	Thorium-228	5/5	pCi/g			1.33	1.67	1.46	L	1.61	1.61	u	2.04	0/5		N		Below Background
IA-6	Thorium-230	25/25	pCi/g			0.6	2100	138	X	287	287	u	2.89	10/25		Y	Quant.	
IA-6	Thorium-232	13/32	pCi/g	2	4	0.74	7	2.8	D	3.16	3.16	u	1.83	7/32		Y	Quant.	
IA-6	Uranium-235	3/5	pCi/g	0.08	0.1	0.2	4.33	1.03	D	2.79	2.79	u	0.25	2/5		Y	Quant.	
IA-6	Uranium-238	8/32	pCi/g	0.58	94.2	8.28	32	29	D	35.9	32	m	2.02	8/32		Y	Quant.	
IA-7	Fluoride	1/1	mg/kg			2.68	2.68	2.68	D		2.68	m		NA	6.4E+03	N		Max. detect < PRG
IA-7	Aluminum	10/10	mg/kg			5810	15700	9740	L	12400	12400	u	14700	2/10	1.0E+05	N		Max. detect < PRG
IA-7	Arsenic	10/10	mg/kg			2	11.8	5.71	L	8.83	8.83	u	18	0/10	3.0E+00	N		Below Background
IA-7	Barium	12/12	mg/kg			54.4	13600	2310	X	4950	4950	u	279	2/12	1.0E+05	N		Max. detect < PRG
IA-7	Beryllium	1/10	mg/kg	0.28	0.48	0.96	0.96	0.398	D	0.518	0.518	u	0.83	1/10	3.4E+02	N		Max. detect < PRG
IA-7	Boron	10/10	mg/kg			3.8	11.6	6.62	L	8.69	8.69	u	9.9	1/10	9.6E+03	N		Max. detect < PRG
IA-7	Cadmium	5/13	mg/kg	0.155	0.5	0.48	3.2	0.643	D	1.06	1.06	u	0.62	3/13	9.3E+01	N		Max. detect < PRG
IA-7	Calcium	10/10	mg/kg			2450	37000	12500	L	47400	37000	m	28900	1/10		N		Essential Nutrient (low conc.)
IA-7	Chromium	10/10	mg/kg			11.6	22.1	16.5	L	19.4	19.4	u	17.3	4/10	6.4E+01	N		Max. detect < PRG
IA-7	Cobalt	13/13	mg/kg			3.8	6050	755	X	1690	1690	u	31.7	3/13	2.9E+03	Y	Qual.	
IA-7	Copper	12/12	mg/kg			10.2	4400	612	X	1360	1360	u	19.4	3/12	7.0E+03	N		Max. detect < PRG
IA-7	Iron	10/10	mg/kg			9540	24600	15900	L	19100	19100	u	26600	0/10	1.0E+05	N		Below Background

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 8 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-7	Lead	12/12	mg/kg			7.4	933	142	X	305	305	u	79.7	2/12	1.0E+02	Y	Qual.	
IA-7	Lithium	8/10	mg/kg	3	3.15	5.4	9.3	6.81	X	8.09	8.09	u	8.1	2/10	3.7E+03	N		Max. detect < PRG
IA-7	Magnesium	11/11	mg/kg			2740	23000	8440	L	16700	16700	u	18400	1/11		N		Essential Nutrient (low conc.)
IA-7	Manganese	10/10	mg/kg			83.1	2030	672	L	2770	2030	m	2830	0/10	4.5E+03	N		Below Background
IA-7	Mercury	5/10	mg/kg	0.03	0.035	0.08	2.1	0.468	X	0.876	0.876	u	0.69	3/10	5.6E+01	N		Max. detect < PRG
IA-7	Molybdenum	5/13	mg/kg	0.46	10.15	1	255	34.1	D	74.2	74.2	u	22.7	2/13	9.4E+02	N		Max. detect < PRG
IA-7	Nickel	12/12	mg/kg			8.7	7570	1020	X	2280	2280	u	33.9	2/12	3.7E+03	Y	Quant.	
IA-7	Potassium	10/10	mg/kg			436	1320	665	L	854	854	u	1140	1/10		N		Essential Nutrient (low conc.)
IA-7	Selenium	3/13	mg/kg	0.16	10.15	1.6	183	22.5	D	49.7	49.7	u	0.55	3/13	9.4E+02	N		Max. detect < PRG
IA-7	Sodium	10/10	mg/kg			78.5	216	118	L	142	142	u	235	0/10		N		Below Background
IA-7	Strontium	10/10	mg/kg			11.1	25.2	18.4	N	21.4	21.4	u	26	0/10	1.0E+05	N		Below Background
IA-7	Thallium	1/13	mg/kg	0.205	11.35	0.95	0.95	2.77	D	4.96	0.95	m	0	1/13	1.5E+01	N		Max. detect < PRG
IA-7	Titanium	10/10	mg/kg			215	373	274	L	305	305	u	269	4/10		Y	Qual.	
IA-7	Vanadium	11/11	mg/kg			17.2	630	82.4	X	182	182	u	31	4/11	1.3E+03	N		Max. detect < PRG
IA-7	Zinc	10/10	mg/kg			34.3	57.2	42.4	L	47.7	47.7	u	278	0/10	1.0E+05	N		Below Background
IA-7	1,2-Dichloroethane	1/9	mg/kg	0.0025	0.003	0.001	0.001	0.00272	D	0.00314	0.001	m	0.009	0/9	7.6E-01	N		Below Background
IA-7	2-Butanone	1/9	mg/kg	0.005	0.0065	0.001	0.001	0.00567	D	0.00679	0.001	m	0.023	0/9	2.7E+03	N		Below Background
IA-7	Acetone	3/9	mg/kg	0.0065	0.0135	0.005	0.028	0.0111	D	0.0154	0.0154	u	0.017	1/9	6.1E+02	N		Max. detect < PRG
IA-7	Toluene	1/9	mg/kg	0.0025	0.003	0.001	0.001	0.00267	D	0.00308	0.001	m	0.11	0/9	5.2E+02	N		Below Background
IA-7	Actinium-227	19/35	pCi/g	-0.13	0.32	0.19	0.68	0.269	Z	0.325	0.325	u	0.82	0/35		N		Below Background
IA-7	Americium-241	1/35	pCi/g	-0.03	0.08	0.08	0.08	0.0217	D	0.0296	0.0296	u	0	1/35		N		<5% detected
IA-7	Potassium-40	35/35	pCi/g			12.33	18.47	15.6	N	16	16	u	16.8	6/35		Y	Quant.	
IA-7	Protactinium-231	8/35	pCi/g	-0.3	0.92	1.2	2.38	0.628	D	0.828	0.828	u	1.13	8/35		Y	Quant.	
IA-7	Radium-226	86/90	pCi/g	1.5	1.8	0.65	27	2.05	X	2.62	2.62	u	1.55	28/90		Y	Quant.	
IA-7	Radium-228	35/35	pCi/g			0.66	1.15	0.937	N	0.967	0.967	u	1.24	0/35		N		Below Background
IA-7	Thorium-228	35/35	pCi/g			0.69	1.91	1.23	L	1.31	1.31	u	2.04	0/35		N		Below Background
IA-7	Thorium-230	72/73	pCi/g	0.05	0.05	0.86	1400	70.9	X	113	113	u	2.89	33/73		Y	Quant.	
IA-7	Thorium-232	80/90	pCi/g	1	3.5	0.59	4	1.61	X	1.75	1.75	u	1.83	21/90		Y	Quant.	
IA-7	Uranium-235	4/35	pCi/g	-0.03	0.17	0.24	0.48	0.108	D	0.137	0.137	u	0.25	3/35		Y	Quant.	
IA-7	Uranium-238	20/90	pCi/g	-1.76	31.2	5	39	8.12	D	9.59	9.59	u	2.02	20/90		Y	Quant.	
IA-8	Sulfate	1/1	mg/kg			860	860	860	D		860	m		NA		Y	Qual.	
IA-8	Aluminum	4/4	mg/kg			6340	13500	8780	D	12600	12600	u	14700	0/4	1.0E+05	N		Below Background
IA-8	Arsenic	4/4	mg/kg			4.4	8	6.23	D	7.99	7.99	u	18	0/4	3.0E+00	N		Below Background
IA-8	Barium	4/4	mg/kg			98.1	185	133	D	178	178	u	279	0/4	1.0E+05	N		Below Background
IA-8	Boron	3/3	mg/kg			4.3	6	5.27	D	6.74	6	m	9.9	0/3	9.6E+03	N		Below Background
IA-8	Cadmium	1/6	mg/kg	0.16	0.6	0.4	0.4	0.338	D	0.476	0.4	m	0.62	0/6	9.3E+01	N		Below Background
IA-8	Calcium	4/4	mg/kg			4460	21100	10800	D	20200	20200	u	28900	0/4		N		Below Background
IA-8	Chromium	4/4	mg/kg			12.2	17.7	14.2	D	17.1	17.1	u	17.3	1/4	6.4E+01	N		Max. detect < PRG
IA-8	Cobalt	4/4	mg/kg			3.8	16.7	7.83	D	14.9	14.9	u	31.7	0/4	2.9E+03	N		Below Background
IA-8	Copper	4/4	mg/kg			10.9	28.6	19.7	D	30.1	28.6	m	19.4	2/4	7.0E+03	N		Max. detect < PRG
IA-8	Iron	4/4	mg/kg			15100	18300	16300	D	17900	17900	u	26600	0/4	1.0E+05	N		Below Background
IA-8	Lead	4/4	mg/kg			8.3	44.5	18.3	D	38.9	38.9	u	79.7	0/4	1.0E+02	N		Below Background
IA-8	Lithium	2/4	mg/kg	3.1	4.35	6.1	8.8	5.59	D	8.49	8.49	u	8.1	1/4	3.7E+03	N		Max. detect < PRG
IA-8	Magnesium	4/4	mg/kg			3180	12700	7020	D	12500	12500	u	18400	0/4		N		Below Background
IA-8	Manganese	4/4	mg/kg			142	862	570	D	930	862	m	2830	0/4	4.5E+03	N		Below Background
IA-8	Molybdenum	3/6	mg/kg	0.465	12.1	1.3	1.7	4.18	D	8.13	1.7	m	22.7	0/6	9.4E+02	N		Below Background
IA-8	Nickel	4/4	mg/kg			12.6	30	19.2	D	28.4	28.4	u	33.9	0/4	3.7E+03	N		Below Background
IA-8	Potassium	4/4	mg/kg			785	1180	932	D	1130	1130	u	1140	1/4		N		Essential Nutrient (low conc.)
IA-8	Selenium	3/6	mg/kg	0.165	12.1	0.52	1.2	3.82	D	7.99	1.2	m	0.55	2/6	9.4E+02	N		Max. detect < PRG

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 9 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-8	Silver	1/4	mg/kg	0.38	0.39	0.72	0.72	0.469	D	0.666	0.666	u	2.6	0/4	9.4E+02	N		Below Background
IA-8	Sodium	3/4	mg/kg	141.5	141.5	129	340	231	D	361	340	m	235	2/4		N		Essential Nutrient (low conc.)
IA-8	Strontium	4/4	mg/kg			16.9	21.1	19.2	D	21.4	21.1	m	26	0/4	1.0E+05	N		Below Background
IA-8	Titanium	4/4	mg/kg			166	274	242	D	303	274	m	269	2/4		Y	Qual.	
IA-8	Vanadium	3/4	mg/kg	11.7	11.7	22.1	25.1	20.8	D	28	25.1	m	31	0/4	1.3E+03	N		Below Background
IA-8	Zinc	4/4	mg/kg			39.8	75.6	58.2	D	75.5	75.5	u	278	0/4	1.0E+05	N		Below Background
IA-8	Benz(a)anthracene	1/4	mg/kg	0.21	0.215	0.2	0.2	0.209	D	0.216	0.2	m	0.3	0/4	3.6E+00	N		Below Background
IA-8	Benzo(a)pyrene	1/4	mg/kg	0.21	0.215	0.14	0.14	0.194	D	0.236	0.14	m	0.34	0/4	3.6E-01	N		Below Background
IA-8	Benzo(b)fluoranthene	1/4	mg/kg	0.21	0.215	0.29	0.29	0.231	D	0.277	0.277	u	0.31	0/4	3.6E+00	N		Below Background
IA-8	Butyl benzyl phthalate	2/4	mg/kg	0.21	0.215	0.18	0.27	0.219	D	0.263	0.263	u	0.25	1/4	9.3E+02	N		Max. detect < PRG
IA-8	Chrysene	1/4	mg/kg	0.21	0.215	0.07	0.07	0.176	D	0.26	0.07	m	0.57	0/4	3.6E+02	N		Below Background
IA-8	Fluoranthene	1/4	mg/kg	0.21	0.215	0.24	0.24	0.219	D	0.236	0.236	u	0.7	0/4	3.7E+03	N		Below Background
IA-8	Indeno(1,2,3-cd)pyrene	1/4	mg/kg	0.21	0.215	0.049	0.049	0.171	D	0.267	0.049	m	0.35	0/4	3.6E+00	N		Below Background
IA-8	Phenanthrene	1/4	mg/kg	0.21	0.215	0.14	0.14	0.194	D	0.236	0.14	m	0.28	0/4		N		Below Background
IA-8	Pyrene	1/4	mg/kg	0.21	0.215	0.25	0.25	0.221	D	0.244	0.244	u	0.66	0/4	2.6E+03	N		Below Background
IA-8	1,1,2-Trichloro-1,2,2-trifluoroethane	1/4	mg/kg	0.005	0.0065	0.005	0.005	0.00575	D	0.00677	0.005	m	0	1/4	5.6E+03	N		Max. detect < PRG
IA-8	Methylene chloride	1/4	mg/kg	0.0025	0.003	0.091	0.091	0.0249	D	0.0767	0.0767	u	0.007	1/4	2.0E+01	N		Max. detect < PRG
IA-8	Actinium-227	15/28	pCi/g	0.01	0.18	0.23	0.95	0.291	L	0.597	0.597	u	0.82	1/28		Y	Quant.	
IA-8	Americium-241	1/28	pCi/g	-0.06	0.11	0.07	0.07	0.0271	D	0.0387	0.0387	u	0	1/28		N		<5% detected
IA-8	Cesium-137	2/28	pCi/g	-0.03	0.02	0.03	0.08	0.00179	D	0.00852	0.00852	u	0.57	0/28		N		Below Background
IA-8	Potassium-40	28/28	pCi/g			13.91	18.26	15.9	L	16.3	16.3	u	16.8	8/28		Y	Quant.	
IA-8	Protactinium-231	6/28	pCi/g	-0.56	0.65	1.28	2.63	0.567	D	0.798	0.798	u	1.13	6/28		Y	Quant.	
IA-8	Radium-226	282/294	pCi/g	1	2.7	0.67	130	3.3	X	4.13	4.13	u	1.55	204/294		Y	Quant.	
IA-8	Radium-228	28/28	pCi/g			0.81	1.15	0.948	X	0.973	0.973	u	1.24	0/28		N		Below Background
IA-8	Thorium-228	28/28	pCi/g			0.68	1.98	1.27	N	1.38	1.38	u	2.04	0/28		N		Below Background
IA-8	Thorium-230	303/303	pCi/g			0.9	15000	91.1	X	175	175	u	2.89	125/303		Y	Quant.	
IA-8	Thorium-232	229/294	pCi/g	0.7	8	0.68	14	2.24	X	2.37	2.37	u	1.83	155/294		Y	Quant.	
IA-8	Uranium-235	9/28	pCi/g	-0.01	0.18	0.19	0.44	0.165	D	0.208	0.208	u	0.25	6/28		Y	Quant.	
IA-8	Uranium-238	24/294	pCi/g	0.54	58	3.87	66	12.7	D	13.6	13.6	u	2.02	24/294		Y	Quant.	
IA-9	Sulfate	1/1	mg/kg			863	863	863	D		863	m		NA		Y	Qual.	
IA-9	Aluminum	40/40	mg/kg			5070	19600	10900	L	12100	12100	u	14700	7/40	1.0E+05	N		Max. detect < PRG
IA-9	Antimony	2/61	mg/kg	1.75	7.55	6.1	20.4	3.8	D	4.47	4.47	u	5.2	2/61	7.5E+01	N		Max. detect < PRG
IA-9	Arsenic	41/41	mg/kg			1.8	98.4	9.88	X	13.7	13.7	u	18	1/41	3.0E+00	Y	Quant.	
IA-9	Barium	40/40	mg/kg			52.5	5830	434	X	702	702	u	279	7/40	1.0E+05	N		Max. detect < PRG
IA-9	Beryllium	25/40	mg/kg	0.25	0.38	0.64	1.4	0.631	X	0.707	0.707	u	0.83	7/40	3.4E+02	N		Max. detect < PRG
IA-9	Boron	39/40	mg/kg	2.6	2.6	4.1	11.5	6.92	N	7.46	7.46	u	9.9	3/40	9.6E+03	N		Max. detect < PRG
IA-9	Cadmium	16/61	mg/kg	0.15	0.65	0.32	4.8	0.47	D	0.602	0.602	u	0.62	7/61	9.3E+01	N		Max. detect < PRG
IA-9	Calcium	40/40	mg/kg			2110	34700	8200	X	10100	10100	u	28900	1/40		N		Essential Nutrient (low conc.)
IA-9	Chromium	40/40	mg/kg			10	21.7	15.3	L	16.1	16.1	u	17.3	7/40	6.4E+01	N		Max. detect < PRG
IA-9	Cobalt	41/41	mg/kg			3.8	648	36.5	X	64.5	64.5	u	31.7	6/41	2.9E+03	N		Max. detect < PRG
IA-9	Copper	40/40	mg/kg			10	599	37.1	X	62.5	62.5	u	19.4	6/40	7.0E+03	N		Max. detect < PRG
IA-9	Iron	40/40	mg/kg			7760	26400	17900	N	18900	18900	u	26600	0/40	1.0E+05	N		Below Background
IA-9	Lead	40/40	mg/kg			7	201	24.6	X	34.5	34.5	u	79.7	4/40	1.0E+02	Y	Qual.	
IA-9	Lithium	39/40	mg/kg	3.15	3.15	4.9	12.5	7.82	N	8.35	8.35	u	8.1	16/40	3.7E+03	N		Max. detect < PRG
IA-9	Magnesium	43/43	mg/kg			2150	21600	6090	X	7170	7170	u	18400	1/43		N		Essential Nutrient (low conc.)
IA-9	Manganese	40/40	mg/kg			97.9	1990	652	L	828	828	u	2830	0/40	4.5E+03	N		Below Background
IA-9	Mercury	2/40	mg/kg	0.03	0.035	0.07	0.15	0.0344	D	0.0397	0.0397	u	0.69	0/40	5.6E+01	N		Below Background
IA-9	Molybdenum	18/61	mg/kg	0.44	12.6	1	59.1	5.79	D	7.66	7.66	u	22.7	2/61	9.4E+02	N		Max. detect < PRG
IA-9	Nickel	40/40	mg/kg			11.8	843	53.5	X	89.7	89.7	u	33.9	7/40	3.7E+03	N		Max. detect < PRG

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 10 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
IA-9	Potassium	40/40	mg/kg			459	1960	1140	L	1250	1250	u	1140	18/40		N		Essential Nutrient (low conc.)
IA-9	Selenium	7/61	mg/kg	0.155	12.6	0.45	134	6.49	D	10.2	10.2	u	0.55	6/61	9.4E+02	N		Max. detect < PRG
IA-9	Sodium	40/40	mg/kg			82	310	152	L	166	166	u	235	2/40		N		Essential Nutrient (low conc.)
IA-9	Strontium	40/40	mg/kg			14.9	79.2	24.9	X	27.7	27.7	u	26	12/40	1.0E+05	N		Max. detect < PRG
IA-9	Thallium	7/61	mg/kg	0.195	12.6	0.46	148	6.51	D	10.6	10.6	u	0	7/61	1.5E+01	Y	Quant.	
IA-9	Titanium	40/40	mg/kg			174	506	277	L	297	297	u	269	21/40		Y	Qual.	
IA-9	Uranium	3/40	mg/kg	4.8	8.1	36	112	11.6	D	16.3	16.3	u	0	3/40		Y	Quant.	
IA-9	Vanadium	40/40	mg/kg			14.6	97.7	30.8	X	34.2	34.2	u	31	16/40	1.3E+03	N		Max. detect < PRG
IA-9	Zinc	40/40	mg/kg			35.6	78.4	53	L	55.9	55.9	u	278	0/40	1.0E+05	N		Below Background
IA-9	Dalapon	1/39	mg/kg	0.024	0.0475	0.061	0.061	0.0265	D	0.0283	0.0283	u	0	1/39	3.2E+03	N		Max. detect < PRG
IA-9	MCPP	2/39	mg/kg	4.75	9.5	19	62	6.91	D	9.44	9.44	u	0	2/39	1.1E+02	N		Max. detect < PRG
IA-9	Silvex	1/39	mg/kg	0.012	0.0235	0.031	0.031	0.0133	D	0.0142	0.0142	u	0	1/39	8.6E+02	N		Max. detect < PRG
IA-9	4,4'-DDD	2/39	mg/kg	0.00195	1.05	0.0022	0.003	0.0558	D	0.119	0.003	m	0	2/39	1.9E+01	N		Max. detect < PRG
IA-9	4,4'-DDE	1/39	mg/kg	0.001	1.05	0.0035	0.0035	0.0558	D	0.119	0.0035	m	0	1/39	1.3E+01	N		Max. detect < PRG
IA-9	Dieldrin	4/40	mg/kg	0.001	1.05	0.0039	0.23	0.0628	D	0.125	0.125	u	0.0036	4/40	1.9E-01	Y	Quant.	
IA-9	PCB-1260	1/39	mg/kg	0.0195	10.5	0.041	0.041	0.559	D	1.19	0.041	m	0	1/39	1.3E+00	N		Max. detect < PRG
IA-9	Benz(a)anthracene	3/39	mg/kg	0.195	0.22	0.22	0.25	0.208	D	0.211	0.211	u	0.3	0/39	3.6E+00	N		Below Background
IA-9	Benzo(a)pyrene	2/39	mg/kg	0.195	0.22	0.083	0.099	0.2	D	0.207	0.099	m	0.34	0/39	3.6E-01	N		Below Background
IA-9	Benzo(b)fluoranthene	5/39	mg/kg	0.195	0.22	0.073	0.24	0.199	D	0.207	0.207	u	0.31	0/39	3.6E+00	N		Below Background
IA-9	Benzo(ghi)perylene	4/39	mg/kg	0.195	0.22	0.13	0.18	0.201	D	0.205	0.18	m	0.39	0/39		N		Below Background
IA-9	Bis(2-ethylhexyl)phthalate	20/39	mg/kg	0.195	0.21	0.024	0.32	0.202	X	0.223	0.223	u	0.18	14/39	2.1E+02	N		Max. detect < PRG
IA-9	Butyl benzyl phthalate	8/39	mg/kg	0.195	0.215	0.29	0.31	0.224	D	0.234	0.234	u	0.25	8/39	9.3E+02	N		Max. detect < PRG
IA-9	Chrysene	6/39	mg/kg	0.195	0.22	0.12	0.18	0.199	D	0.204	0.18	m	0.57	0/39	3.6E+02	N		Below Background
IA-9	Di-n-butyl phthalate	4/39	mg/kg	0.195	0.22	0.026	0.1	0.193	D	0.204	0.1	m	0	4/39	1.1E+04	N		Max. detect < PRG
IA-9	Di-n-octylphthalate	1/39	mg/kg	0.195	0.22	0.069	0.069	0.202	D	0.208	0.069	m	0	1/39	1.0E+04	N		Max. detect < PRG
IA-9	Fluoranthene	2/39	mg/kg	0.195	0.22	0.082	0.093	0.2	D	0.207	0.093	m	0.7	0/39	3.7E+03	N		Below Background
IA-9	Indeno(1,2,3-cd)pyrene	4/39	mg/kg	0.195	0.22	0.11	0.32	0.211	D	0.219	0.219	u	0.35	0/39	3.6E+00	N		Below Background
IA-9	Pyrene	6/39	mg/kg	0.195	0.22	0.16	0.24	0.208	D	0.212	0.212	u	0.66	0/39	2.6E+03	N		Below Background
IA-9	1,1,1-Trichloroethane	6/46	mg/kg	0.0025	0.0035	0.0013	0.0017	0.00279	D	0.00291	0.0017	m	0	6/46	1.4E+03	N		Max. detect < PRG
IA-9	2-Butanone	7/40	mg/kg	0.005	0.0275	0.007	0.22	0.017	D	0.0267	0.0267	u	0.023	5/40	2.7E+03	N		Max. detect < PRG
IA-9	Acetone	1/36	mg/kg	0.005	0.06	0.76	0.76	0.0312	D	0.0666	0.0666	u	0.017	1/36	6.1E+02	N		Max. detect < PRG
IA-9	Carbon disulfide	2/40	mg/kg	0.0025	0.0035	0.016	0.021	0.00375	D	0.00468	0.00468	u	0	2/40	1.2E+02	N		Max. detect < PRG
IA-9	Carbon tetrachloride	1/40	mg/kg	0.0025	0.0035	0.002	0.002	0.00295	D	0.00301	0.002	m	0	1/40	5.2E-01	N		Max. detect < PRG
IA-9	Dimethylbenzene	1/40	mg/kg	0.0025	0.0035	0.004	0.004	0.00301	D	0.00307	0.00307	u	0	1/40		N		<5% detected
IA-9	Toluene	13/48	mg/kg	0.0025	0.0035	0.001	0.029	0.00422	D	0.00543	0.00543	u	0.11	0/48	5.2E+02	N		Below Background
IA-9	Trichloroethene	3/40	mg/kg	0.0025	0.0035	0.001	0.006	0.00298	D	0.00314	0.00314	u	0	3/40	6.1E+00	N		Max. detect < PRG
IA-9	Actinium-227	106/140	pCi/g	-0.02	0.22	0.09	189.9	2.85	Z	5.3	5.3	u	0.82	12/140		Y	Quant.	
IA-9	Americium-241	3/140	pCi/g	-2.29	0.44	0.06	0.12	0.017	D	0.0453	0.0453	u	0	3/140		N		<5% detected
IA-9	Cesium-137	16/140	pCi/g	-0.03	0.31	0.02	0.7	0.0191	D	0.0307	0.0307	u	0.57	1/140		Y	Quant.	
IA-9	Potassium-40	140/140	pCi/g			1.51	25.96	15.3	X	15.6	15.6	u	16.8	23/140		Y	Quant.	
IA-9	Protactinium-231	21/140	pCi/g	-0.46	1.1	1.02	217.1	3.23	D	6.05	6.05	u	1.13	20/140		Y	Quant.	
IA-9	Radium-226	420/427	pCi/g	0	1	0.15	230.7	2.29	Z	3.28	3.28	u	1.55	105/427		Y	Quant.	
IA-9	Radium-228	140/140	pCi/g			0.15	2.79	0.969	X	1	1	u	1.24	6/140		Y	Quant.	
IA-9	Thorium-228	139/140	pCi/g	0.93	0.93	0.6	15.78	1.38	X	1.56	1.56	u	2.04	8/140		Y	Quant.	
IA-9	Thorium-230	402/407	pCi/g	0.5	1.4	0.6	10140	57.2	X	105	105	u	2.89	132/407		Y	Quant.	
IA-9	Thorium-232	404/427	pCi/g	0.2	2.25	0.5	10.93	1.65	L	1.7	1.7	u	1.83	142/427		Y	Quant.	
IA-9	Uranium-235	30/140	pCi/g	-0.07	0.22	0.18	20.23	0.555	D	0.881	0.881	u	0.25	20/140		Y	Quant.	
IA-9	Uranium-238	13/427	pCi/g	0	24	2	119.7	6.03	D	6.64	6.64	u	2.02	12/427		N		<5% detected
ROAD ROW	Aluminum	1/1	mg/kg			15800	15800	15800	D		15800	m	14700	1/1	1.0E+05	N		Max. detect < PRG

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 11 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{-95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
ROAD ROW	Arsenic	1/1	mg/kg			23.2	23.2	23.2	D		23.2	m	18	1/1	3.0E+00	Y	Quant.	
ROAD ROW	Barium	1/1	mg/kg			350	350	350	D		350	m	279	1/1	1.0E+05	N		Max. detect < PRG
ROAD ROW	Beryllium	1/1	mg/kg			1.5	1.5	1.5	D		1.5	m	0.83	1/1	3.4E+02	N		Max. detect < PRG
ROAD ROW	Boron	1/1	mg/kg			18.8	18.8	18.8	D		18.8	m	9.9	1/1	9.6E+03	N		Max. detect < PRG
ROAD ROW	Calcium	1/1	mg/kg			5050	5050	5050	D		5050	m	28900	0/1		N		Below Background
ROAD ROW	Chromium	1/1	mg/kg			19.8	19.8	19.8	D		19.8	m	17.3	1/1	6.4E+01	N		Max. detect < PRG
ROAD ROW	Cobalt	1/1	mg/kg			35.1	35.1	35.1	D		35.1	m	31.7	1/1	2.9E+03	N		Max. detect < PRG
ROAD ROW	Copper	1/1	mg/kg			22.9	22.9	22.9	D		22.9	m	19.4	1/1	7.0E+03	N		Max. detect < PRG
ROAD ROW	Iron	1/1	mg/kg			52100	52100	52100	D		52100	m	26600	1/1	1.0E+05	N		Essential Nutrient (low conc.)
ROAD ROW	Lead	1/1	mg/kg			39.5	39.5	39.5	D		39.5	m	79.7	0/1	1.0E+02	N		Below Background
ROAD ROW	Lithium	1/1	mg/kg			9.1	9.1	9.1	D		9.1	m	8.1	1/1	3.7E+03	N		Max. detect < PRG
ROAD ROW	Magnesium	1/1	mg/kg			2770	2770	2770	D		2770	m	18400	0/1		N		Below Background
ROAD ROW	Manganese	1/1	mg/kg			6320	6320	6320	D		6320	m	2830	1/1	4.5E+03	Y	Quant.	
ROAD ROW	Molybdenum	1/1	mg/kg			2.1	2.1	2.1	D		2.1	m	22.7	0/1	9.4E+02	N		Below Background
ROAD ROW	Nickel	1/1	mg/kg			32.9	32.9	32.9	D		32.9	m	33.9	0/1	3.7E+03	N		Below Background
ROAD ROW	Potassium	1/1	mg/kg			1160	1160	1160	D		1160	m	1140	1/1		N		Essential Nutrient (low conc.)
ROAD ROW	Sodium	1/1	mg/kg			932	932	932	D		932	m	235	1/1		N		Essential Nutrient (low conc.)
ROAD ROW	Strontium	1/1	mg/kg			21.8	21.8	21.8	D		21.8	m	26	0/1	1.0E+05	N		Below Background
ROAD ROW	Thallium	1/1	mg/kg			7.2	7.2	7.2	D		7.2	m	0	1/1	1.5E+01	N		Max. detect < PRG
ROAD ROW	Titanium	1/1	mg/kg			293	293	293	D		293	m	269	1/1		Y	Qual.	
ROAD ROW	Vanadium	1/1	mg/kg			65.3	65.3	65.3	D		65.3	m	31	1/1	1.3E+03	N		Max. detect < PRG
ROAD ROW	Zinc	1/1	mg/kg			73	73	73	D		73	m	278	0/1	1.0E+05	N		Below Background
ROAD ROW	MCPP	1/1	mg/kg			120	120	120	D		120	m	0	1/1	1.1E+02	Y	Quant.	
ROAD ROW	alpha-Chlordane	1/2	mg/kg	0.00115	0.00115	0.03	0.03	0.0156	D	0.107	0.03	m	0.014	1/2	1.2E+01	N		Max. detect < PRG
ROAD ROW	Fluoranthene	1/1	mg/kg			0.1	0.1	0.1	D		0.1	m	0.7	0/1	3.7E+03	N		Below Background
ROAD ROW	Pyrene	1/1	mg/kg			0.32	0.32	0.32	D		0.32	m	0.66	0/1	2.6E+03	N		Below Background
ROAD ROW	2-Butanone	1/1	mg/kg			0.024	0.024	0.024	D		0.024	m	0.023	1/1	2.7E+03	N		Max. detect < PRG
ROAD ROW	Acetone	1/1	mg/kg			0.077	0.077	0.077	D		0.077	m	0.017	1/1	6.1E+02	N		Max. detect < PRG
ROAD ROW	Toluene	1/1	mg/kg			0.004	0.004	0.004	D		0.004	m	0.11	0/1	5.2E+02	N		Below Background
ROAD ROW	Radium-226	1359/1381	pCi/g	0.7	4	0.4	39.9	1.99	X	2.07	2.07	u	1.55	789/1381		Y	Quant.	
ROAD ROW	Thorium-230	2328/2371	pCi/g	0.3	1.5	0.3	1100	11.7	X	13.4	13.4	u	2.89	706/2371		Y	Quant.	
ROAD ROW	Thorium-232	1199/1376	pCi/g	0.1	9	0.4	64	2.19	X	2.28	2.28	u	1.83	745/1376		Y	Quant.	
ROAD ROW	Uranium-238	11/1379	pCi/g	0	69	2.1	48.2	11.3	D	11.6	11.6	u	2.02	11/1379		N		<5% detected
SLAPS	Fluoride	31/31	mg/kg			2.26	62.9	9.57	X	14.1	14.1	u		NA	6.4E+03	N		Max. detect < PRG
SLAPS	Sulfide	5/31	mg/kg	0.00655	14.1	13.8	23.8	9.46	D	11.2	11.2	u		NA		Y	Qual.	
SLAPS	Aluminum	61/61	mg/kg			5810	23200	10700	L	11500	11500	u	14700	9/61	1.0E+05	N		Max. detect < PRG
SLAPS	Antimony	3/149	mg/kg	0.19	11.9	3.8	53.2	4.94	D	5.57	5.57	u	5.2	2/149	7.5E+01	N		Max. detect < PRG
SLAPS	Arsenic	64/64	mg/kg			2	237	14.6	X	22.6	22.6	u	18	4/64	3.0E+00	Y	Quant.	
SLAPS	Barium	66/66	mg/kg			40.6	13600	678	X	1160	1160	u	279	8/66	1.0E+05	N		Max. detect < PRG
SLAPS	Beryllium	20/61	mg/kg	0.245	0.48	0.55	2.4	0.545	D	0.628	0.628	u	0.83	15/61	3.4E+02	N		Max. detect < PRG
SLAPS	Boron	56/61	mg/kg	1.15	5.8	2.3	14.8	7.93	N	8.58	8.58	u	9.9	14/61	9.6E+03	N		Max. detect < PRG
SLAPS	Cadmium	26/149	mg/kg	0.14	1	0.32	50.4	0.952	D	1.52	1.52	u	0.62	18/149	9.3E+01	N		Max. detect < PRG
SLAPS	Calcium	61/61	mg/kg			2450	81300	17300	X	20500	20500	u	28900	13/61		N		Essential Nutrient (low conc.)
SLAPS	Chromium	62/62	mg/kg			10.3	3240	69.3	X	156	156	u	17.3	27/62	6.4E+01	Y	Quant.	
SLAPS	Cobalt	84/84	mg/kg			3.7	6050	186	X	328	328	u	31.7	26/84	2.9E+03	Y	Qual.	
SLAPS	Copper	72/73	mg/kg	5.85	5.85	6.1	4400	160	X	281	281	u	19.4	19/73	7.0E+03	N		Max. detect < PRG
SLAPS	Iron	61/61	mg/kg			2600	30200	17500	N	18600	18600	u	26600	4/61	1.0E+05	N		Essential Nutrient (low conc.)
SLAPS	Lead	67/67	mg/kg			6	1200	68.3	X	111	111	u	79.7	7/67	1.0E+02	Y	Qual.	
SLAPS	Lithium	57/61	mg/kg	3	4.25	5.1	14.6	7.73	N	8.17	8.17	u	8.1	21/61	3.7E+03	N		Max. detect < PRG

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 12 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
SLAPS	Magnesium	92/92	mg/kg			21	26900	10500	X	11500	11500	u	18400	12/92		N		Essential Nutrient (low conc.)
SLAPS	Manganese	61/61	mg/kg			83.1	2030	571	L	723	723	u	2830	0/61	4.5E+03	N		Below Background
SLAPS	Mercury	7/61	mg/kg	0.03	0.035	0.07	2.1	0.103	D	0.171	0.171	u	0.69	3/61	5.6E+01	N		Max. detect < PRG
SLAPS	Molybdenum	46/149	mg/kg	0.415	19.85	1	255	13.8	D	17.9	17.9	u	22.7	14/149	9.4E+02	N		Max. detect < PRG
SLAPS	Nickel	65/65	mg/kg			8.7	7570	260	X	491	491	u	33.9	9/65	3.7E+03	Y	Quant.	
SLAPS	Potassium	61/61	mg/kg			436	4230	976	L	1060	1060	u	1140	13/61		N		Essential Nutrient (low conc.)
SLAPS	Selenium	31/149	mg/kg	0.15	19.85	0.38	183	8.79	D	11.1	11.1	u	0.55	26/149	9.4E+02	N		Max. detect < PRG
SLAPS	Silver	1/61	mg/kg	0.34	0.44	0.81	0.81	0.39	D	0.402	0.402	u	2.6	0/61	9.4E+02	N		Below Background
SLAPS	Sodium	61/61	mg/kg			78.5	534	221	X	240	240	u	235	27/61		N		Essential Nutrient (low conc.)
SLAPS	Strontium	61/61	mg/kg			11.1	210	29.8	X	36	36	u	26	20/61	1.0E+05	N		Max. detect < PRG
SLAPS	Thallium	40/149	mg/kg	0.205	19.85	0.53	3.3	6.86	D	7.54	3.3	m	0	40/149	1.5E+01	N		Max. detect < PRG
SLAPS	Titanium	61/61	mg/kg			66.2	416	267	N	280	280	u	269	25/61		Y	Qual.	
SLAPS	Uranium	10/61	mg/kg	6.9	8.95	11.1	155	14.8	D	20.3	20.3	u	0	10/61		Y	Quant.	
SLAPS	Vanadium	63/64	mg/kg	10.1	10.1	17.2	862	65.2	X	97.9	97.9	u	31	30/64	1.3E+03	N		Max. detect < PRG
SLAPS	Zinc	63/63	mg/kg			26.7	4330	124	X	239	239	u	278	2/63	1.0E+05	N		Max. detect < PRG
SLAPS	Dalapon	1/38	mg/kg	0.0225	0.05	0.15	0.15	0.0292	D	0.0348	0.0348	u	0	1/38	3.2E+03	N		Max. detect < PRG
SLAPS	MCPA	2/38	mg/kg	4.5	23.5	19	49	6.99	D	9.16	9.16	u	0	2/38	5.3E+01	N		Max. detect < PRG
SLAPS	MCPP	1/38	mg/kg	4.5	10.5	11	11	5.29	D	5.65	5.65	u	0	1/38	1.1E+02	N		Max. detect < PRG
SLAPS	Silvex	4/38	mg/kg	0.0115	0.026	0.049	0.083	0.0189	D	0.0237	0.0237	u	0	4/38	8.6E+02	N		Max. detect < PRG
SLAPS	Toxaphene	1/36	mg/kg	0.042	0.5	0.05	0.05	0.112	D	0.131	0.05	m	0	1/36	2.7E+00	N		Max. detect < PRG
SLAPS	2-Methylnaphthalene	1/38	mg/kg	0.185	0.225	0.1	0.1	0.205	D	0.211	0.1	m	0	1/38		N		<5% detected
SLAPS	Benz(a)anthracene	5/38	mg/kg	0.19	0.225	0.09	0.26	0.203	D	0.211	0.211	u	0.3	0/38	3.6E+00	N		Below Background
SLAPS	Benzo(a)pyrene	3/38	mg/kg	0.19	0.225	0.077	0.18	0.202	D	0.21	0.18	m	0.34	0/38	3.6E-01	N		Below Background
SLAPS	Benzo(b)fluoranthene	1/38	mg/kg	0.185	0.225	0.083	0.083	0.205	D	0.211	0.083	m	0.31	0/38	3.6E+00	N		Below Background
SLAPS	Benzo(ghi)perylene	1/38	mg/kg	0.19	0.225	0.19	0.19	0.208	D	0.21	0.19	m	0.39	0/38		N		Below Background
SLAPS	Benzo(k)fluoranthene	1/38	mg/kg	0.19	0.225	0.066	0.066	0.205	D	0.212	0.066	m	0.29	0/38	3.6E+01	N		Below Background
SLAPS	Bis(2-ethylhexyl)phthalate	1/38	mg/kg	0.185	0.295	0.17	0.17	0.21	D	0.214	0.17	m	0.18	0/38	2.1E+02	N		Below Background
SLAPS	Butyl benzyl phthalate	6/38	mg/kg	0.185	0.225	0.1	0.31	0.211	D	0.221	0.221	u	0.25	4/38	9.3E+02	N		Max. detect < PRG
SLAPS	Chrysene	4/38	mg/kg	0.19	0.225	0.051	0.21	0.201	D	0.209	0.209	u	0.57	0/38	3.6E+02	N		Below Background
SLAPS	Di-n-octylphthalate	2/38	mg/kg	0.185	0.225	0.13	0.15	0.205	D	0.209	0.15	m	0	2/38	1.0E+04	N		Max. detect < PRG
SLAPS	Fluoranthene	6/38	mg/kg	0.19	0.225	0.077	0.31	0.198	D	0.21	0.21	u	0.7	0/38	3.7E+03	N		Below Background
SLAPS	Indeno(1,2,3-cd)pyrene	3/38	mg/kg	0.19	0.225	0.089	0.18	0.202	D	0.21	0.18	m	0.35	0/38	3.6E+00	N		Below Background
SLAPS	Naphthalene	1/38	mg/kg	0.185	0.225	0.13	0.13	0.206	D	0.21	0.13	m	0	1/38	1.9E+01	N		Max. detect < PRG
SLAPS	Phenanthrene	6/38	mg/kg	0.19	0.225	0.042	0.23	0.195	D	0.207	0.207	u	0.28	0/38		N		Below Background
SLAPS	Pyrene	7/38	mg/kg	0.19	0.225	0.046	0.37	0.214	D	0.227	0.227	u	0.66	0/38	2.6E+03	N		Below Background
SLAPS	1,2-Dichloroethane	1/38	mg/kg	0.0025	0.0035	0.001	0.001	0.00295	D	0.00304	0.001	m	0.009	0/38	7.6E-01	N		Below Background
SLAPS	1,2-Dichloroethene	2/38	mg/kg	0.0025	0.0035	0.003	0.022	0.00349	D	0.00433	0.00433	u	0	2/38		Y	Quant.	
SLAPS	2-Butanone	3/38	mg/kg	0.005	0.0125	0.001	0.013	0.00649	D	0.00697	0.00697	u	0.023	0/38	2.7E+03	N		Below Background
SLAPS	Acetone	5/36	mg/kg	0.006	0.06	0.005	0.028	0.0127	D	0.0156	0.0156	u	0.017	2/36	6.1E+02	N		Max. detect < PRG
SLAPS	Dimethylbenzene	2/38	mg/kg	0.0025	0.0035	0.006	0.01	0.00325	D	0.00359	0.00359	u	0	2/38		Y	Quant.	
SLAPS	Methylene chloride	3/37	mg/kg	0.0025	0.018	0.001	0.13	0.0104	D	0.0185	0.0185	u	0.007	2/37	2.0E+01	N		Max. detect < PRG
SLAPS	Toluene	31/64	mg/kg	0.0025	0.0035	0.001	1.2	0.0493	D	0.0886	0.0886	u	0.11	6/64	5.2E+02	N		Max. detect < PRG
SLAPS	Trichloroethene	9/44	mg/kg	0.0025	0.0035	0.0016	0.058	0.00578	D	0.00863	0.00863	u	0	9/44	6.1E+00	N		Max. detect < PRG
SLAPS	trans-1,2-Dichloroethene	5/5	mg/kg			0.0013	0.0077	0.0034	L	0.0119	0.0077	m		NA	2.1E+01	N		Max. detect < PRG
SLAPS	Actinium-227	222/337	pCi/g	-0.13	2.6	0.16	292.7	2.7	Z	4.39	4.39	u	0.82	46/337		Y	Quant.	
SLAPS	Americium-241	22/332	pCi/g	-5.04	0.35	0.06	4.69	0.0758	D	0.12	0.12	u	0	22/332		Y	Quant.	
SLAPS	Cesium-137	14/332	pCi/g	-0.03	0.21	0.03	3.09	0.0206	D	0.0401	0.0401	u	0.57	2/332		N		<5% detected
SLAPS	Potassium-40	330/332	pCi/g	5.21	8.43	7.64	25.2	15.5	X	15.7	15.7	u	16.8	59/332		Y	Quant.	
SLAPS	Protactinium-231	34/337	pCi/g	-0.48	5.2	1.2	346.4	2.8	D	4.76	4.76	u	1.13	34/337		Y	Quant.	
SLAPS	Radium-226	649/874	pCi/g	0.3	5.3	0.5	5620	31	X	44.5	44.5	u	1.55	283/874		Y	Quant.	

Attachment 7. Determination of Subsurface Soil Potential Chemicals of Concern by Aggregate (Page 13 of 13)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc. [b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Indust. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
SLAPS	Radium-228	331/332	pCi/g	0.95	0.95	0.42	4.82	0.958	X	0.985	0.985	u	1.24	14/332		Y	Quant.	
SLAPS	Thorium-228	331/332	pCi/g	1.04	1.04	0.57	4.82	1.26	X	1.3	1.3	u	2.04	8/332		Y	Quant.	
SLAPS	Thorium-230	623/626	pCi/g	0	0.05	0	14680	159	Z	221	221	u	2.89	353/626		Y	Quant.	
SLAPS	Thorium-232	554/872	pCi/g	0.4	50.4	0.4	63	2.32	X	2.5	2.5	u	1.83	110/872		Y	Quant.	
SLAPS	Uranium-235	138/332	pCi/g	-0.05	0.31	0.17	82.19	0.975	D	1.47	1.47	u	0.25	99/332		Y	Quant.	
SLAPS	Uranium-238	162/872	pCi/g	-1.76	352	3.04	1769	35.6	D	42.3	42.3	u	2.02	162/872		Y	Quant.	

UCL95 = 95% upper confidence limit on the mean concentration

PRG = Preliminary Remediation Goal

PCOC = Potential Contaminant of Concern

[a] Distribution flags:

D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of UCL_{95}.

L = Lognormal; H-statistic used in calculations of UCL_{95}.

N = Normal; t-statistic used in calculations of UCL_{95}.

X = Neither normal nor lognormal; t-statistic used in calculations of UCL_{95}.

Z = Contains concentrations that are negative and/or zero; t-statistic used in calculations of UCL_{95}.

[b] Basis for determining the exposure concentration:

m = maximum detected concentration.

u = 95% upper confidence limit on the mean concentration.

[c] EPA Region IX industrial soil PRG, based on a risk level of 10^{-6} or a hazard level of 0.1 (note that Region IX noncarcinogenic PRGs are provided for a hazard level of 1.0; these values have been adjusted to a hazard level of 0.1 for this screening).

[d] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively;

Qual. = Qualitative

Quant. = Quantitative.

[e] Justification for eliminating the analyte from the PCOC list.

Attachment 8. Determination of Ground-Water Potential Chemicals of Concern by Aggregate (Page 1 of 5)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
HISS/DEEP																	
Chloride	2/2	mg/L			0.73	1.09	0.91	D	2.05	1.09	m	1.21	0/2		N		Below Background
Nitrate	1/3	mg/L	0.025	0.05	0.11	0.11	0.0617	D	0.135	0.11	m	0.1	1/3	1.0E+00	N		Max. detect < PRG
Ammonia	3/3	mg/L			9.31	12.5	10.5	D	13.4	12.5	m	6.7	3/3		Y	Quant.	
Phosphorous	2/2	mg/L			0.441	0.506	0.474	D	0.679	0.506	m	1.24	0/2		N		Below Background
Silicon	1/1	mg/L			10.2	10.2	10.2	D		10.2	m	8.36	1/1		Y	Qual.	
Arsenic	3/3	mg/L			0.016	0.0358	0.0259	D	0.0426	0.0358	m	0.0827	0/3	4.5E-05	N		Below Background
Barium	3/3	mg/L			0.619	0.862	0.779	D	1.01	0.862	m	0.424	3/3	2.6E-01	Y	Quant.	
Boron	3/3	mg/L			0.28	0.328	0.303	D	0.343	0.328	m	0.214	3/3	3.3E-01	N		Max. detect < PRG
Calcium	3/3	mg/L			109	125	118	D	131	125	m	113	2/3		N		Essential Nutrient (low conc.)
Cobalt	1/3	mg/L	0.0017	0.00255	0.0022	0.0022	0.00215	D	0.00287	0.0022	m	0	1/3	2.2E-01	N		Max. detect < PRG
Iron	3/3	mg/L			9.92	19.2	13	D	22	19.2	m	15.2	1/3	1.1E+00	N		Essential Nutrient (low conc.)
Lithium	1/2	mg/L	0.04115	0.04115	0.201	0.201	0.121	D	0.626	0.201	m	0	1/2	7.3E-02	Y	Qual.	
Magnesium	3/3	mg/L			46.9	54.3	51.4	D	58.1	54.3	m	42.6	3/3		N		Essential Nutrient (low conc.)
Manganese	3/3	mg/L			0.609	0.848	0.707	D	0.918	0.848	m	0.231	3/3	1.7E-01	Y	Quant.	
Molybdenum	1/3	mg/L	0.0036	0.00565	0.0011	0.0011	0.00345	D	0.00729	0.0011	m	0	1/3	1.8E-02	N		Max. detect < PRG
Nickel	1/3	mg/L	0.0043	0.0079	0.0051	0.0051	0.00577	D	0.00895	0.0051	m	0.0011	1/3	7.3E-02	N		Max. detect < PRG
Potassium	3/3	mg/L			18	35.3	24.6	D	40.4	35.3	m	3.51	3/3		N		Essential Nutrient (low conc.)
Silver	1/3	mg/L	0.001	0.00275	0.0083	0.0083	0.00402	D	0.0104	0.0083	m	0	1/3	1.8E-02	N		Max. detect < PRG
Sodium	3/3	mg/L			85.2	93.3	88.7	D	95.7	93.3	m	51	3/3		N		Essential Nutrient (low conc.)
Strontium	3/3	mg/L			1.1	1.7	1.39	D	1.89	1.7	m	0.742	3/3	2.2E+00	N		Max. detect < PRG
Thallium	1/3	mg/L	0.0014	0.0025	0.0028	0.0028	0.00223	D	0.00348	0.0028	m	0	1/3	2.9E-04	Y	Quant.	
Uranium	1/3	mg/L	0.03565	0.0675	0.0000786	0.0000786	0.0344	D	0.0913	0.0000786	m	0.000038	1/3		Y	Quant.	
Zinc	1/3	mg/L	0.0031	0.0058	0.0067	0.0067	0.0052	D	0.00836	0.0067	m	0.0549	0/3	1.1E+00	N		Below Background
Dalapon	1/2	mg/L	0.001	0.001	0.0051	0.0051	0.00305	D	0.016	0.0051	m	0	1/2	1.1E-01	N		Max. detect < PRG
MCPP	1/1	mg/L			0.47	0.47	0.47	D		0.47	m	0	1/1	3.7E-03	Y	Quant.	
Bis(2-ethylhexyl)phthalate	1/3	mg/L	0.005	0.005	0.002	0.002	0.004	D	0.00692	0.002	m	0.001	1/3	4.8E-03	N		Max. detect < PRG
Lead-210	1/1	pCi/L			2.57	2.57	2.57	D		2.57	m	0.502	1/1		Y	Quant.	
Radium-226	2/2	pCi/L			0.777	1.88	1.33	D	4.81	1.88	m	1.03	1/2		Y	Quant.	
Thorium-230	1/2	pCi/L	0.0207	0.0207	2.24	2.24	1.13	D	8.14	2.24	m	0.63	1/2		Y	Quant.	
HISS/SHALLOW																	
Chloride	37/37	mg/L			3.4	763	69.4	X	110	110	u	13.4	29/37		N		Essential Nutrient (low conc.)
Fluoride	19/41	mg/L	0.1	0.25	0.2	2.3	0.378	D	0.471	0.471	u	0.247	16/41	2.2E-01	Y	Quant.	
Nitrate	40/45	mg/L	0.025	0.05	1.41	2920	242	X	367	367	u	0.72	40/45	1.0E+00	Y	Quant.	
Nitrite	3/24	mg/L	0.0175	0.05	0.022	3.33	0.222	D	0.464	0.464	u	0	3/24	1.0E-01	Y	Quant.	
Sulfate	45/45	mg/L			3.84	281	104	X	120	120	u	376	0/45		N		Below Background
Ammonia	3/43	mg/L	0.025	0.5	1.52	5.7	0.421	D	0.651	0.651	u	0.292	3/43		Y	Quant.	
Phosphorous	25/28	mg/L	0.025	0.025	0.0593	0.882	0.125	X	0.18	0.18	u	0.0818	14/28		N		Essential Nutrient (low conc.)
Silicon	15/15	mg/L			5.66	10.8	8.85	N	9.38	9.38	u	7.95	13/15		Y	Qual.	
Aluminum	2/43	mg/L	0.004	0.14	0.675	1.39	0.068	D	0.127	0.127	u	0	2/43	3.7E+00	N		Max. detect < PRG
Arsenic	4/43	mg/L	0.0009	0.00375	0.0025	0.136	0.00722	D	0.0136	0.0136	u	0	4/43	4.5E-05	Y	Quant.	
Barium	43/43	mg/L			0.0712	0.78	0.223	L	0.26	0.26	u	0.198	20/43	2.6E-01	Y	Quant.	
Boron	20/43	mg/L	0.0066	0.0605	0.0286	0.156	0.0545	D	0.065	0.065	u	0.0638	15/43	3.3E-01	N		Max. detect < PRG
Cadmium	4/43	mg/L	0.00015	0.0105	0.0008	0.0049	0.00171	D	0.00227	0.00227	u	0.00042	4/43	1.8E-03	Y	Quant.	
Calcium	43/43	mg/L			68	1680	280	X	370	370	u	122	22/43		N		Essential Nutrient (low conc.)
Chromium	2/43	mg/L	0.0005	0.012	0.0026	0.0253	0.00217	D	0.00322	0.00322	u	0.013	1/43	1.8E-02	N		<5% detected
Cobalt	10/43	mg/L	0.0004	0.01275	0.00085	0.006	0.00214	D	0.00272	0.00272	u	0	10/43	2.2E-01	N		Max. detect < PRG
Copper	7/42	mg/L	0.0007	0.00975	0.0019	0.078	0.00388	D	0.00696	0.00696	u	0.0056	1/42	1.4E-01	N		Max. detect < PRG
Iron	16/43	mg/L	0.01	0.0675	0.141	11.3	0.69	D	1.26	1.26	u	0	16/43	1.1E+00	N		Essential Nutrient (low conc.)
Lead	3/43	mg/L	0.00045	0.0008	0.0017	0.0073	0.000849	D	0.00112	0.00112	u	0	3/43	4.0E-04	Y	Qual.	
Lithium	3/42	mg/L	0.0039	0.0335	0.0091	0.013	0.0108	D	0.013	0.013	u	0.0134	0/42	7.3E-02	N		Below Background
Magnesium	43/43	mg/L			19.3	367	90.1	X	111	111	u	57	20/43		N		Essential Nutrient (low conc.)
Manganese	26/39	mg/L	0.00015	0.0054	0.0193	3.98	0.343	L	4.49	3.98	m	1.58	3/39	1.7E-01	Y	Quant.	

Attachment 8. Determination of Ground-Water Potential Chemicals of Concern by Aggregate (Page 2 of 5)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Molybdenum	21/43	mg/L	0.00045	0.018	0.0012	0.03	0.00616	D	0.00785	0.00785	u	0	21/43	1.8E-02	Y	Quant.	
Nickel	14/43	mg/L	0.00035	0.0395	0.0013	0.0129	0.00636	D	0.00802	0.00802	u	0	14/43	7.3E-02	N		Max. detect < PRG
Potassium	15/45	mg/L	0.08	5.5	0.525	35.4	2.18	D	3.5	3.5	u	2.17	5/45		N		Essential Nutrient (low conc.)
Selenium	30/43	mg/L	0.0012	0.0045	0.0081	0.513	0.11	X	0.146	0.146	u	0	30/43	1.8E-02	Y	Quant.	
Silver	1/43	mg/L	0.0005	0.01375	0.0352	0.0352	0.00283	D	0.00424	0.00424	u	0	1/43	1.8E-02	N		<5% detected
Sodium	45/45	mg/L			18.4	365	74.5	X	93	93	u	22	39/45		N		Essential Nutrient (low conc.)
Strontium	42/42	mg/L			0.198	5.74	0.876	X	1.16	1.16	u	0.323	29/42	2.2E+00	Y	Quant.	
Thallium	1/43	mg/L	0.00135	0.0025	0.004	0.004	0.00182	D	0.00199	0.00199	u	0	1/43	2.9E-04	N		<5% detected
Titanium	1/28	mg/L	0.0005	0.00225	0.0134	0.0134	0.00141	D	0.00218	0.00218	u	0	1/28		N		<5% detected
Uranium	19/45	mg/L	0.03565	0.337	0.000794	0.313	0.0553	D	0.0739	0.0739	u	0.00253	16/45		Y	Quant.	
Vanadium	7/43	mg/L	0.00055	0.01205	0.0011	0.125	0.00907	D	0.0149	0.0149	u	0	7/43	2.6E-02	Y	Quant.	
Zinc	16/43	mg/L	0.0024	0.01185	0.0024	0.583	0.0234	D	0.0461	0.0461	u	0.0142	8/43	1.1E+00	N		Max. detect < PRG
Dalapon	1/10	mg/L	0.001	0.001	0.0026	0.0026	0.00116	D	0.00145	0.00145	u	0	1/10	1.1E-01	N		Max. detect < PRG
Endosulfan I	1/15	mg/L	0.000025	0.000025	0.000076	0.000076	0.0000284	D	0.0000344	0.0000344	u	0	1/15		Y	Qual.	
alpha-Chlordane	1/15	mg/L	0.000025	0.000025	0.000082	0.000082	0.0000288	D	0.0000355	0.0000355	u	0	1/15	1.9E-04	N		Max. detect < PRG
Bis(2-ethylhexyl)phthalate	1/31	mg/L	0.0005	0.005	0.16	0.16	0.00806	D	0.0167	0.0167	u	0.006	1/31	4.8E-03	N		<5% detected
Diethyl phthalate	2/31	mg/L	0.005	0.005	0.001	0.001	0.00474	D	0.00505	0.001	m	0	2/31	2.9E+00	N		Max. detect < PRG
1,1,1-Trichloroethane	1/41	mg/L	0.0005	0.0025	0.021	0.021	0.00212	D	0.00296	0.00296	u	0	1/41	7.9E-02	N		Max. detect < PRG
1,2-Dichloroethene	2/41	mg/L	0.0005	0.025	0.002	0.003	0.00227	D	0.00326	0.003	m	0	2/41		N		<5% detected
Bromodichloromethane	2/41	mg/L	0.0005	0.025	0.001	0.001	0.00215	D	0.00314	0.001	m	0	2/41	1.8E-04	N		<5% detected
Chloroethane	1/41	mg/L	0.0005	0.05	0.002	0.002	0.00416	D	0.00617	0.002	m	0	1/41	8.6E-01	N		Max. detect < PRG
Chloroform	9/41	mg/L	0.0002	0.0025	0.001	0.077	0.00341	D	0.00652	0.00652	u	0	9/41	1.6E-04	Y	Quant.	
Chloromethane	4/41	mg/L	0.0005	0.05	0.002	0.005	0.00401	D	0.00603	0.005	m	0	4/41	1.5E-03	Y	Quant.	
Dimethylbenzene	3/41	mg/L	0.0005	0.025	0.006	0.026	0.00345	D	0.00509	0.00509	u	0	3/41		Y	Quant.	
Ethylbenzene	3/41	mg/L	0.0005	0.025	0.001	0.007	0.00233	D	0.00334	0.00334	u	0	3/41	1.3E-01	N		Max. detect < PRG
Methylene chloride	1/41	mg/L	0.0005	0.006	0.12	0.12	0.00513	D	0.00998	0.00998	u	0	1/41	4.3E-03	N		<5% detected
Toluene	5/41	mg/L	0.0005	0.025	0.001	0.014	0.00248	D	0.00358	0.00358	u	0	5/41	7.2E-02	N		Max. detect < PRG
Trichloroethene	7/41	mg/L	0.0005	0.0025	0.002	1.3	0.0731	D	0.138	0.138	u	0	7/41	1.6E-03	Y	Quant.	
Lead-210	14/17	pCi/L	0.598	1.18	0.87	3.8	1.49	L	1.84	1.84	u	0.617	14/17		Y	Quant.	
Radium-226	11/41	pCi/L	-0.5	2.05	0.163	2.11	0.258	D	0.389	0.389	u	0.91	1/41		Y	Quant.	
Radium-228	1/17	pCi/L	-0.0545	0.0317	0.112	0.112	0.0106	D	0.0242	0.0242	u	0.00155	1/17		Y	Quant.	
Thorium-228	2/37	pCi/L	-0.21	1.11	0.112	1.77	0.182	D	0.29	0.29	u	0.66	1/37		Y	Quant.	
Thorium-230	13/36	pCi/L	-0.14	2.06	0.106	5.77	1.04	D	1.43	1.43	u	1.18	9/36		Y	Quant.	
Uranium-234	17/23	pCi/L	-0.31	1.69	1.18	130.3	12.2	Z	23.4	23.4	u	6.07	5/23		Y	Quant.	
Uranium-235	2/24	pCi/L	-0.75	0.97	1.87	6.57	0.432	D	0.918	0.918	u	0.47	2/24		Y	Quant.	
Uranium-238	12/19	pCi/L	0	1.29	1.29	122.4	13.5	Z	26.2	26.2	u	2.28	7/19		Y	Quant.	
SLAPS/DEEP																	
Chloride	29/44	mg/L	0.2	0.5	0.299	12.7	1.34	X	1.81	1.81	u	1.21	19/44		N		Essential Nutrient (low conc.)
Fluoride	22/46	mg/L	0.006	0.25	0.23	1.2	0.373	D	0.435	0.435	u	0.237	21/46	2.2E-01	Y	Quant.	
Nitrate	12/49	mg/L	0.01	0.1	0.033	48.4	1.06	D	2.71	2.71	u	0.1	7/49	1.0E+00	Y	Quant.	
Nitrite	1/35	mg/L	0.0085	0.1	0.18	0.18	0.0445	D	0.0533	0.0533	u	0	1/35	1.0E-01	N		<5% detected
Sulfate	20/49	mg/L	0.1	1.25	0.717	173	15	D	23	23	u	6.93	10/49		Y	Qual.	
Ammonia	43/49	mg/L	0.025	0.5	0.146	7.73	3.46	X	4.04	4.04	u	6.7	5/49		Y	Quant.	
Phosphorous	33/34	mg/L	0.025	0.025	0.0586	1.38	0.537	X	0.658	0.658	u	1.24	3/34		N		Essential Nutrient (low conc.)
Silicon	14/14	mg/L			6.82	13.5	9.01	L	9.88	9.88	u	8.36	8/14		Y	Qual.	
Aluminum	16/48	mg/L	0.0103	0.201	0.0343	2.37	0.263	D	0.373	0.373	u	0.0506	15/48	3.7E+00	N		Max. detect < PRG
Antimony	1/48	mg/L	0.0008	0.02295	0.0341	0.0341	0.00997	D	0.0124	0.0124	u	0	1/48	1.5E-03	N		<5% detected
Arsenic	38/48	mg/L	0.0009	0.00125	0.0063	0.236	0.0551	X	0.0676	0.0676	u	0.0827	8/48	4.5E-05	Y	Quant.	
Barium	48/48	mg/L			0.0807	0.633	0.377	X	0.414	0.414	u	0.424	19/48	2.6E-01	Y	Quant.	
Beryllium	1/48	mg/L	0.0001	0.000405	0.00024	0.00024	0.000206	D	0.000225	0.000225	u	0	1/48	7.3E-03	N		Max. detect < PRG
Boron	37/48	mg/L	0.0092	0.1045	0.075	0.593	0.21	X	0.243	0.243	u	0.214	16/48	3.3E-01	Y	Quant.	
Cadmium	3/48	mg/L	0.00015	0.0021	0.0004	0.00078	0.000862	D	0.00105	0.00078	m	0	3/48	1.8E-03	N		Max. detect < PRG
Calcium	48/48	mg/L			11.1	160	95.3	X	102	102	u	113	8/48		N		Essential Nutrient (low conc.)

Attachment 8. Determination of Ground-Water Potential Chemicals of Concern by Aggregate (Page 3 of 5)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Chromium	21/48	mg/L	0.0005	0.0043	0.0012	0.0185	0.00364	D	0.00462	0.00462	u	0.0051	8/48	1.8E-02	Y	Quant.	
Cobalt	19/48	mg/L	0.0004	0.00255	0.0016	0.131	0.00503	D	0.00955	0.00955	u	0	19/48	2.2E-01	N		Max. detect < PRG
Copper	4/48	mg/L	0.0007	0.0038	0.0023	0.016	0.00221	D	0.00275	0.00275	u	0.0041	2/48	1.4E-01	N		Max. detect < PRG
Iron	43/48	mg/L	0.02215	0.0965	0.171	18.3	8.56	X	10	10	u	15.2	6/48	1.1E+00	N		Essential Nutrient (low conc.)
Lead	9/48	mg/L	0.00045	0.0038	0.0012	0.0048	0.00113	D	0.00136	0.00136	u	0	9/48	4.0E-04	Y	Qual.	
Lithium	10/48	mg/L	0.0015	0.03	0.0094	0.0862	0.0162	D	0.0208	0.0208	u	0	10/48	7.3E-02	Y	Qual.	
Magnesium	48/48	mg/L			18.7	75.4	39.5	X	41.6	41.6	u	42.6	13/48		N		Essential Nutrient (low conc.)
Manganese	48/48	mg/L			0.114	4.41	0.855	X	1.12	1.12	u	0.231	44/48	1.7E-01	Y	Quant.	
Mercury	1/49	mg/L	0.00005	0.00012	0.00036	0.00036	0.0000599	D	0.0000708	0.0000708	u	0	1/49	1.1E-03	N		Max. detect < PRG
Molybdenum	23/48	mg/L	0.00115	0.008	0.0015	0.0231	0.00585	D	0.00695	0.00695	u	0	23/48	1.8E-02	Y	Quant.	
Nickel	18/48	mg/L	0.00105	0.0079	0.003	0.0171	0.00598	D	0.00671	0.00671	u	0.0011	18/48	7.3E-02	N		Max. detect < PRG
Potassium	33/49	mg/L	0.61	3.17	1.13	12.5	2.59	X	3.14	3.14	u	3.51	8/49		N		Essential Nutrient (low conc.)
Silver	3/48	mg/L	0.0005	0.003	0.0012	0.0039	0.00182	D	0.00207	0.00207	u	0	3/48	1.8E-02	N		Max. detect < PRG
Sodium	49/49	mg/L			43.1	128	55.1	X	58.3	58.3	u	51	26/49		N		Essential Nutrient (low conc.)
Strontium	48/48	mg/L			0.348	1.01	0.586	X	0.627	0.627	u	0.742	12/48	2.2E+00	N		Max. detect < PRG
Thallium	3/47	mg/L	0.00135	0.0025	0.0029	0.0046	0.00193	D	0.00211	0.00211	u	0	3/47	2.9E-04	Y	Quant.	
Titanium	7/34	mg/L	0.00065	0.01265	0.0019	0.0325	0.00466	D	0.00639	0.00639	u	0.0091	2/34		Y	Qual.	
Uranium	15/49	mg/L	0.02805	0.0675	0.0000305	0.0105	0.0281	D	0.033	0.0105	m	0.000038	14/49		Y	Quant.	
Vanadium	16/48	mg/L	0.00055	0.0152	0.0012	0.0124	0.00349	D	0.00421	0.00421	u	0	16/48	2.6E-02	N		Max. detect < PRG
Zinc	24/47	mg/L	0.0029	0.0225	0.0049	0.0253	0.0103	X	0.0119	0.0119	u	0.0549	0/47	1.1E+00	N		Below Background
Dalapon	1/18	mg/L	0.001	0.0011	0.0053	0.0053	0.00125	D	0.00166	0.00166	u	0	1/18	1.1E-01	N		Max. detect < PRG
2-Nitrophenol	1/36	mg/L	0.005	0.005	0.003	0.003	0.00494	D	0.00504	0.003	m	0	1/36		N		<5% detected
4-Methylphenol	1/36	mg/L	0.005	0.005	0.001	0.001	0.00489	D	0.00508	0.001	m	0	1/36	1.8E-02	N		Max. detect < PRG
Bis(2-ethylhexyl)phthalate	2/37	mg/L	0.0005	0.008	0.004	0.005	0.00392	D	0.00445	0.00445	u	0.001	2/37	4.8E-03	Y	Quant.	
Di-n-butyl phthalate	1/37	mg/L	0.0005	0.005	0.001	0.001	0.00465	D	0.00498	0.001	m	0	1/37	3.7E-01	N		Max. detect < PRG
Di-n-octylphthalate	1/37	mg/L	0.005	0.005	0.003	0.003	0.00495	D	0.00504	0.003	m	0	1/37	7.3E-02	N		Max. detect < PRG
Bromomethane	1/39	mg/L	0.0005	0.005	0.001	0.001	0.00328	D	0.00388	0.001	m	0	1/39	8.7E-04	N		<5% detected
Methylene chloride	1/38	mg/L	0.0005	0.006	0.008	0.008	0.00233	D	0.00272	0.00272	u	0	1/38	4.3E-03	N		<5% detected
Lead-210	11/15	pCi/L	0.398	1.69	0.743	3.06	1.65	N	2.05	2.05	u	0.502	11/15		Y	Quant.	
Radium-226	17/46	pCi/L	-0.13	2.28	0.212	2.5	0.599	D	0.748	0.748	u	1.03	1/46		Y	Quant.	
Radium-228	4/15	pCi/L	0.00776	0.0784	0.0353	0.0867	0.039	D	0.0501	0.0501	u	0	4/15		Y	Quant.	
Thorium-228	2/45	pCi/L	-0.28	1.76	1.72	2.44	0.422	D	0.565	0.565	u	0.62	2/45		N		<5% detected
Thorium-230	21/43	pCi/L	0	0.97	0.102	6.27	1.41	D	1.84	1.84	u	0.63	19/43		Y	Quant.	
Uranium-234	8/29	pCi/L	0	0.54	1.11	7.88	0.957	D	1.48	1.48	u	0	8/29		Y	Quant.	
Uranium-238	6/26	pCi/L	-0.35	1.43	0.29	3.8	0.599	D	0.942	0.942	u	0.11	6/26		Y	Quant.	
SLAPS/SHALLOW																	
Chloride	94/96	mg/L	0.5	0.5	0.4	1600	148	L	353	353	u	13.4	65/96		N		Essential Nutrient (low conc.)
Fluoride	25/82	mg/L	0.006	2.5	0.152	1.66	0.394	D	0.482	0.482	u	0.247	18/82	2.2E-01	Y	Quant.	
Nitrate	84/97	mg/L	0.01	0.05	0.024	985	105	X	139	139	u	0.72	65/97	1.0E+00	Y	Quant.	
Nitrite	6/64	mg/L	0.0085	0.5	0.024	8.6	0.293	D	0.539	0.539	u	0	6/64	1.0E-01	Y	Quant.	
Sulfate	94/98	mg/L	0.1	1.25	2.5	6820	205	X	320	320	u	376	6/98		Y	Qual.	
Ammonia	27/97	mg/L	0.025	25	0.168	7.45	1.01	D	1.49	1.49	u	0.292	25/97		Y	Quant.	
Phosphorous	55/65	mg/L	0.025	0.025	0.0517	1.49	0.2	X	0.271	0.271	u	0.0818	36/65		N		Essential Nutrient (low conc.)
Silicon	26/26	mg/L			5.67	15.9	10.1	L	11.3	11.3	u	7.95	21/26		Y	Qual.	
Aluminum	16/91	mg/L	0.004	0.1575	0.027	0.723	0.0726	D	0.098	0.098	u	0	16/91	3.7E+00	N		Max. detect < PRG
Antimony	3/92	mg/L	0.0008	0.02295	0.0021	0.0525	0.00933	D	0.0109	0.0109	u	0	3/92	1.5E-03	N		<5% detected
Arsenic	13/92	mg/L	0.0009	0.0031	0.0025	0.0713	0.00287	D	0.00427	0.00427	u	0	13/92	4.5E-05	Y	Quant.	
Barium	92/92	mg/L			0.0505	0.712	0.249	X	0.28	0.28	u	0.198	45/92	2.6E-01	Y	Quant.	
Beryllium	2/92	mg/L	0.0001	0.00065	0.0002	0.00023	0.00023	D	0.000247	0.00023	m	0	2/92	7.3E-03	N		Max. detect < PRG
Boron	58/92	mg/L	0.0062	0.105	0.0201	0.375	0.112	X	0.128	0.128	u	0.0638	47/92	3.3E-01	Y	Quant.	
Cadmium	15/92	mg/L	0.00015	0.0021	0.00033	0.0042	0.000952	D	0.0011	0.0011	u	0.00042	11/92	1.8E-03	Y	Quant.	
Calcium	92/92	mg/L			15.5	789	225	X	256	256	u	122	57/92		N		Essential Nutrient (low conc.)
Chromium	31/92	mg/L	0.0005	0.00535	0.002	0.147	0.00902	D	0.013	0.013	u	0.013	13/92	1.8E-02	Y	Quant.	

Attachment 8. Determination of Ground-Water Potential Chemicals of Concern by Aggregate (Page 4 of 5)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Cobalt	29/92	mg/L	0.0004	0.00255	0.00086	0.0142	0.00206	D	0.00243	0.00243	u	0	29/92	2.2E-01	N		Max. detect < PRG
Copper	13/91	mg/L	0.0007	0.0088	0.0015	0.099	0.00383	D	0.00567	0.00567	u	0.0056	5/91	1.4E-01	N		Max. detect < PRG
Iron	48/92	mg/L	0.00465	0.0915	0.0891	19.1	1.39	X	2.07	2.07	u	0	48/92	1.1E+00	N		Essential Nutrient (low conc.)
Lead	10/92	mg/L	0.00045	0.0011	0.00096	0.0075	0.000926	D	0.00113	0.00113	u	0	10/92	4.0E-04	Y	Qual.	
Lithium	5/89	mg/L	0.0015	0.02655	0.003	0.0119	0.00818	D	0.00941	0.00941	u	0.0134	0/89	7.3E-02	N		Below Background
Magnesium	92/92	mg/L			18.6	357	92.7	X	105	105	u	57	52/92		N		Essential Nutrient (low conc.)
Manganese	76/87	mg/L	0.00015	0.0048	0.005	9.79	0.724	X	0.96	0.96	u	1.58	13/87	1.7E-01	Y	Quant.	
Mercury	1/98	mg/L	0.00005	0.00011	0.00012	0.00012	0.0000537	D	0.0000561	0.0000561	u	0	1/98	1.1E-03	N		Max. detect < PRG
Molybdenum	27/92	mg/L	0.00045	0.00565	0.00091	0.0476	0.00579	D	0.0072	0.0072	u	0	27/92	1.8E-02	Y	Quant.	
Nickel	41/92	mg/L	0.0006	0.0079	0.0013	0.557	0.0374	D	0.0549	0.0549	u	0	41/92	7.3E-02	Y	Quant.	
Orthophosphate	1/30	mg/L	0.05	0.5	0.12	0.12	0.172	D	0.235	0.12	m	0	1/30		N		<5% detected
Potassium	55/98	mg/L	0.61	1.1	0.537	7.75	1.6	X	1.8	1.8	u	2.17	22/98		N		Essential Nutrient (low conc.)
Selenium	53/92	mg/L	0.0011	0.0028	0.0024	4.36	0.281	X	0.424	0.424	u	0	53/92	1.8E-02	Y	Quant.	
Silver	5/93	mg/L	0.0005	0.00455	0.0049	0.0172	0.00245	D	0.00294	0.00294	u	0	5/93	1.8E-02	N		Max. detect < PRG
Sodium	98/98	mg/L			8.97	454	76.6	X	92.8	92.8	u	22	74/98		N		Essential Nutrient (low conc.)
Strontium	92/92	mg/L			0.15	1.92	0.575	X	0.648	0.648	u	0.323	61/92	2.2E+00	N		Max. detect < PRG
Thallium	1/92	mg/L	0.00135	0.0025	0.003	0.003	0.00176	D	0.00184	0.00184	u	0	1/92	2.9E-04	N		<5% detected
Titanium	9/67	mg/L	0.0005	0.01615	0.0021	0.0238	0.00335	D	0.00424	0.00424	u	0	9/67		Y	Qual.	
Uranium	38/98	mg/L	0.02805	0.0675	0.000245	7.33	0.316	D	0.526	0.526	u	0.00253	29/98		Y	Quant.	
Vanadium	28/92	mg/L	0.00055	0.02455	0.0011	0.0294	0.00659	D	0.00792	0.00792	u	0	28/92	2.6E-02	Y	Quant.	
Zinc	49/91	mg/L	0.00035	0.02155	0.0024	0.0407	0.00964	X	0.0108	0.0108	u	0.0142	12/91	1.1E+00	N		Max. detect < PRG
Endosulfan I	1/45	mg/L	0.000025	0.000028	0.00014	0.00014	0.0000276	D	0.0000319	0.0000319	u	0	1/45		N		<5% detected
Endosulfan II	1/45	mg/L	0.000025	0.000055	0.000053	0.000053	0.0000413	D	0.0000444	0.0000444	u	0	1/45		N		<5% detected
Lindane	1/45	mg/L	0.000025	0.000028	0.000053	0.000053	0.0000257	D	0.0000267	0.0000267	u	0	1/45	5.2E-05	N		<5% detected
Methoxychlor	1/45	mg/L	0.00025	0.00028	0.0006	0.0006	0.000259	D	0.000272	0.000272	u	0	1/45	1.8E-02	N		Max. detect < PRG
2,4,5-Trichlorophenol	1/78	mg/L	0.005	0.0135	0.002	0.002	0.00931	D	0.01	0.002	m	0	1/78	3.7E-01	N		Max. detect < PRG
2,4-Dinitrophenol	1/78	mg/L	0.005	0.025	0.001	0.001	0.0103	D	0.0113	0.001	m	0	1/78	7.3E-03	N		Max. detect < PRG
2-Chlorophenol	1/78	mg/L	0.005	0.0055	0.001	0.001	0.00496	D	0.00505	0.001	m	0	1/78	3.8E-03	N		Max. detect < PRG
4-Chloro-3-methylphenol	1/78	mg/L	0.005	0.0055	0.001	0.001	0.00496	D	0.00505	0.001	m	0	1/78		N		<5% detected
4-Nitrophenol	1/78	mg/L	0.005	0.025	0.009	0.009	0.0104	D	0.0114	0.009	m	0	1/78	2.3E-01	N		Max. detect < PRG
Acenaphthene	1/83	mg/L	0.005	0.0055	0.001	0.001	0.00496	D	0.00505	0.001	m	0	1/83	3.7E-02	N		Max. detect < PRG
Benz(a)anthracene	1/83	mg/L	0.005	0.0055	0.001	0.001	0.00496	D	0.00505	0.001	m	0	1/83	9.2E-05	N		<5% detected
Bis(2-ethylhexyl)phthalate	7/83	mg/L	0.0005	0.0055	0.001	0.045	0.0047	D	0.00557	0.00557	u	0.006	2/83	4.8E-03	Y	Quant.	
Butyl benzyl phthalate	2/83	mg/L	0.005	0.0055	0.003	0.003	0.00496	D	0.00502	0.003	m	0	2/83	7.3E-01	N		Max. detect < PRG
Chrysene	1/53	mg/L	0.005	0.0055	0.001	0.001	0.00494	D	0.00507	0.001	m	0	1/53	9.2E-03	N		Max. detect < PRG
Di-n-butyl phthalate	2/83	mg/L	0.0005	0.0055	0.003	0.003	0.00486	D	0.00499	0.003	m	0.001	2/83	3.7E-01	N		Max. detect < PRG
Di-n-octylphthalate	1/83	mg/L	0.005	0.0055	0.003	0.003	0.00499	D	0.00503	0.003	m	0	1/83	7.3E-02	N		Max. detect < PRG
Dimethyl phthalate	1/53	mg/L	0.005	0.0055	0.003	0.003	0.00498	D	0.00505	0.003	m	0	1/53	3.7E+01	N		Max. detect < PRG
Fluoranthene	1/83	mg/L	0.005	0.0055	0.002	0.002	0.00498	D	0.00504	0.002	m	0	1/83	1.5E-01	N		Max. detect < PRG
Fluorene	1/83	mg/L	0.005	0.0055	0.002	0.002	0.00498	D	0.00504	0.002	m	0	1/83	2.4E-02	N		Max. detect < PRG
N-Nitroso-di-n-propylamine	1/83	mg/L	0.005	0.0055	0.006	0.006	0.00502	D	0.00505	0.00505	u	0	1/83	9.6E-06	N		<5% detected
Naphthalene	1/83	mg/L	0.005	0.0055	0.001	0.001	0.00496	D	0.00505	0.001	m	0	1/83	6.2E-04	N		<5% detected
Pentachlorophenol	1/78	mg/L	0.005	0.025	0.006	0.006	0.0104	D	0.0113	0.006	m	0	1/78	5.6E-04	N		<5% detected
Phenol	1/78	mg/L	0.005	0.0055	0.002	0.002	0.00497	D	0.00504	0.002	m	0	1/78	2.2E+00	N		Max. detect < PRG
Pyrene	1/83	mg/L	0.005	0.0055	0.001	0.001	0.00496	D	0.00505	0.001	m	0.001	0/83	1.8E-02	N		Below Background
1,1,1-Trichloroethane	4/85	mg/L	0.0005	0.0025	0.002	0.006	0.00189	D	0.00208	0.00208	u	0	4/85	7.9E-02	N		Max. detect < PRG
1,1-Dichloroethane	2/85	mg/L	0.0005	0.0025	0.002	0.003	0.00184	D	0.00201	0.00201	u	0	2/85	8.1E-02	N		Max. detect < PRG
1,1-Dichloroethene	1/85	mg/L	0.0005	0.0025	0.001	0.001	0.0018	D	0.00197	0.001	m	0	1/85	4.6E-05	N		<5% detected
1,2-Dichloroethene	16/85	mg/L	0.0005	0.0025	0.001	0.11	0.00428	D	0.00674	0.00674	u	0	16/85		Y	Quant.	
2-Butanone	1/81	mg/L	0.0025	0.01	0.001	0.001	0.00412	D	0.00438	0.001	m	0	1/81	1.9E-01	N		Max. detect < PRG
Acetone	1/68	mg/L	0.0025	0.011	0.033	0.033	0.00524	D	0.00601	0.00601	u	0	1/68	6.1E-02	N		Max. detect < PRG
Chloromethane	4/85	mg/L	0.0005	0.005	0.001	0.004	0.00329	D	0.00367	0.00367	u	0	4/85	1.5E-03	N		<5% detected
Methylene chloride	2/84	mg/L	0.0005	0.0065	0.001	0.006	0.00235	D	0.00258	0.00258	u	0	2/84	4.3E-03	N		<5% detected
Trichloroethene	24/85	mg/L	0.0005	0.0025	0.001	0.97	0.0426	D	0.0729	0.0729	u	0	24/85	1.6E-03	Y	Quant.	

Attachment 8. Determination of Ground-Water Potential Chemicals of Concern by Aggregate (Page 5 of 5)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Lead-210	20/31	pCi/L	0.0419	1.03	0.835	15.7	2	L	3.6	3.6	u	0.617	20/31		Y	Quant.	
Radium-226	31/91	pCi/L	-0.75	1.47	0.102	1.82	0.328	D	0.4	0.4	u	0.91	5/91		Y	Quant.	
Radium-228	3/31	pCi/L	-0.00933	0.0403	0.0315	0.105	0.0182	D	0.0245	0.0245	u	0.00155	3/31		Y	Quant.	
Thorium-228	8/89	pCi/L	-0.31	1.9	0.105	4.09	0.476	D	0.618	0.618	u	0.66	6/89		Y	Quant.	
Thorium-230	36/87	pCi/L	0	3.18	0.128	6.27	1.13	D	1.37	1.37	u	1.18	25/87		Y	Quant.	
Uranium-234	45/61	pCi/L	0	1.67	1.01	1571	40.7	Z	83.7	83.7	u	6.07	20/61		Y	Quant.	
Uranium-235	8/57	pCi/L	-0.14	1.09	0.36	71.53	1.85	D	3.96	3.96	u	0.47	7/57		Y	Quant.	
Uranium-238	37/56	pCi/L	0	0.74	0.55	1549	42	Z	88.3	88.3	u	2.28	28/56		Y	Quant.	

UCL95 = 95% upper confidence limit on the mean concentration
PRG = Preliminary Remediation Goal
PCOC = Potential Contaminant of Concern

[a] Distribution flags:
D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of UCL_{95}.
L = Lognormal; H-statistic used in calculations of UCL_{95}.
N = Normal; t-statistic used in calculations of UCL_{95}.
X = Neither normal nor lognormal; t-statistic used in calculations of UCL_{95}.
Z = Includes concentrations that are negative or zero; t-statistic used in calculations of UCL_{95}.

[b] Basis for determining the exposure concentration:
m = maximum detected concentration.
u = 95% upper confidence limit on the mean concentration.

[c] EPA Region IX tap water PRG, based on a risk level of 10^{-6} or a hazard level of 0.1 (note that Region IX noncarcinogenic PRGs are provided for a hazard level of 1.0; these values have been adjusted to a hazard level of 0.1 for this screening).

[d] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively;
Qual. = Qualitative
Quant. = Quantitative.

[e] Justification for eliminating the analyte from the PCOC list.

Attachment 9. Determination of Surface Water Potential Chemicals of Concern by Aggregate (Page 1 of 4)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Reach A																	
Chloride	9/9	mg/L			94	190	136	L	171	171	u	240	0/9		N		Below Background
Fluoride	7/9	mg/L	0.25	0.25	0.7	1.7	0.833	N	1.12	1.12	u	1.1	2/9	2.2E-01	Y	Quant.	
Nitrate	10/10	mg/L			0.9	135	28.6	X	60.5	60.5	u	2.51	5/10	1.0E+00	Y	Quant.	
Nitrite	9/9	mg/L			0.1	0.82	0.301	L	0.707	0.707	u	0.19	3/9	1.0E-01	Y	Quant.	
Sulfate	9/9	mg/L			75.6	220	153	N	187	187	u	210	1/9		Y	Qual.	
Ammonia	9/9	mg/L			0.362	0.94	0.607	L	0.806	0.806	u	0.9	1/9		Y	Qual.	
Phosphorous	10/10	mg/L			0.13	0.62	0.303	X	0.416	0.416	u	0.54	2/10		N		Essential Nutrient (low conc.)
Aluminum	1/3	mg/L	0.117	0.1995	7.05	7.05	2.46	D	9.16	7.05	m	1.13	1/3	3.7E+00	Y	Qual.	
Antimony	3/6	mg/L	0.01455	0.02745	0.001	0.001	0.0105	D	0.0198	0.001	m	0.0402	0/6	1.5E-03	N		Below Background
Arsenic	4/6	mg/L	0.001	0.001	0.003	0.0073	0.00305	D	0.00494	0.00494	u	0.007	1/6	4.5E-05	Y	Quant.	
Barium	7/7	mg/L			0.087	0.212	0.125	L	0.173	0.173	u	0.166	1/7	2.6E-01	N		Max. detect < PRG
Beryllium	4/7	mg/L	0.0003	0.00055	0.0005	0.0005	0.00045	D	0.000526	0.0005	m	0.0005	0/7	7.3E-03	N		Below Background
Boron	8/9	mg/L	0.0515	0.0515	0.11	0.14	0.116	X	0.132	0.132	u	0.16	0/9	3.3E-01	N		Below Background
Cadmium	4/7	mg/L	0.00125	0.00195	0.0005	0.0006	0.000936	D	0.00135	0.0006	m	0.0031	0/7	1.8E-03	N		Below Background
Calcium	10/10	mg/L			56	159	91.5	L	120	120	u	101	2/10		N		Essential Nutrient (low conc.)
Chromium	5/7	mg/L	0.0021	0.0021	0.0027	0.05	0.0174	L	0.39	0.05	m	0.054	0/7	1.8E-02	N		Below Background
Cobalt	6/7	mg/L	0.0046	0.0046	0.001	0.0181	0.00594	X	0.0114	0.0114	u	0.001	2/7	2.2E-01	N		Max. detect < PRG
Copper	7/7	mg/L			0.003	0.0295	0.0149	L	0.0683	0.0295	m	0.0212	3/7	1.4E-01	N		Max. detect < PRG
Cyanide	3/3	mg/L			0.01	0.01	0.01	D	0.01	0.01	u	0.01	0/3	7.3E-02	N		Below Background
Iron	6/7	mg/L	0.03025	0.03025	0.02	9.32	1.41	X	3.97	3.97	u	2.15	1/7	1.1E+00	N		Essential Nutrient (low conc.)
Lead	5/7	mg/L	0.0008	0.00275	0.001	0.0297	0.00532	X	0.0132	0.0132	u	0.0109	1/7	4.0E-04	Y	Qual.	
Lithium	4/7	mg/L	0.0015	0.0107	0.04	0.04	0.0248	D	0.0389	0.0389	u	0.04	0/7	7.3E-02	N		Below Background
Magnesium	10/10	mg/L			26	38	31.2	L	34.2	34.2	u	38.1	0/10		N		Below Background
Manganese	7/7	mg/L			0.058	0.571	0.251	N	0.381	0.381	u	0.63	0/7	1.7E-01	N		Below Background
Mercury	4/7	mg/L	0.00005	0.00005	0.0001	0.0001	0.0000786	D	0.0000982	0.0000982	u	0.0001	0/7	1.1E-03	N		Below Background
Molybdenum	7/7	mg/L			0.01	0.05	0.0252	L	0.0534	0.05	m	0.01	6/7	1.8E-02	Y	Quant.	
Nickel	6/7	mg/L	0.01005	0.01005	0.003	0.0372	0.0135	L	0.0995	0.0372	m	0.006	2/7	7.3E-02	N		Max. detect < PRG
Orthophosphate	7/7	mg/L			0.1	0.52	0.274	L	0.739	0.52	m	0.46	2/7		Y	Qual.	
Potassium	10/10	mg/L			6.41	15	10.6	L	13.3	13.3	u	15	0/10		N		Below Background
Selenium	6/6	mg/L			0.001	0.752	0.253	X	0.565	0.565	u	0.0028	3/6	1.8E-02	Y	Quant.	
Silver	4/7	mg/L	0.00295	0.003	0.001	0.001	0.00185	D	0.00263	0.001	m	0.001	0/7	1.8E-02	N		Below Background
Sodium	10/10	mg/L			84.1	123	106	L	116	116	u	140	0/10		N		Below Background
Strontium	10/10	mg/L			0.39	1.56	0.618	X	0.821	0.821	u	0.618	3/10	2.2E+00	N		Max. detect < PRG
Thallium	3/6	mg/L	0.0014	0.00165	0.002	0.002	0.00178	D	0.00199	0.00199	u	0.002	0/6	2.9E-04	N		Below Background
Titanium	1/3	mg/L	0.0178	0.0243	0.185	0.185	0.0757	D	0.235	0.185	m	0.0349	1/3		Y	Qual.	
Uranium	31/32	mg/L	0.0675	0.0675	0.001	0.301	0.0256	X	0.0466	0.0466	u	0.00216	25/32		Y	Quant.	
Vanadium	6/7	mg/L	0.0183	0.0183	0.003	0.0177	0.0109	L	0.0322	0.0177	m	0.0199	0/7	2.6E-02	N		Below Background
Zinc	7/7	mg/L			0.013	0.0896	0.0274	X	0.0477	0.0477	u	0.0568	1/7	1.1E+00	N		Max. detect < PRG
2-Chlorophenol	1/6	mg/L	0.0025	0.005	0.0003	0.0003	0.00297	D	0.00444	0.0003	m	0.0013	0/6	3.8E-03	N		Below Background
Acenaphthene	1/6	mg/L	0.0025	0.005	0.0006	0.0006	0.00302	D	0.00442	0.0006	m	0.0007	0/6	3.7E-02	N		Below Background
Bis(2-ethylhexyl)phthalate	1/6	mg/L	0.0025	0.005	0.0084	0.0084	0.00432	D	0.00625	0.00625	u	0.005	1/6	4.8E-03	Y	Quant.	
Chrysene	4/6	mg/L	0.005	0.005	0.0003	0.01	0.00672	D	0.01	0.01	u	0.01	0/6	9.2E-03	N		Below Background
Di-n-butyl phthalate	1/6	mg/L	0.0025	0.005	0.0047	0.0047	0.0037	D	0.00479	0.0047	m	0	1/6	3.7E-01	N		Max. detect < PRG
Fluoranthene	4/6	mg/L	0.005	0.005	0.0003	0.0005	0.00193	D	0.00389	0.0005	m	0.0005	0/6	1.5E-01	N		Below Background
Fluorene	2/6	mg/L	0.0025	0.005	0.0004	0.005	0.0034	D	0.00497	0.00497	u	0.001	1/6	2.4E-02	N		Max. detect < PRG
Phenanthrene	3/6	mg/L	0.0025	0.005	0.00004	0.0005	0.00222	D	0.00413	0.0005	m	0.0017	0/6		N		Below Background
Phenol	1/6	mg/L	0.0025	0.005	0.0005	0.0005	0.003	D	0.00442	0.0005	m	0.0167	0/6	2.2E+00	N		Below Background
Pyrene	4/6	mg/L	0.005	0.005	0.0004	0.0005	0.00195	D	0.00389	0.0005	m	0.0005	0/6	1.8E-02	N		Below Background
1,2,3,5-Tetramethylbenzene	2/4	mg/L	0.0001	0.0001	0.0009	0.002	0.000775	D	0.00183	0.00183	u	0.0007	2/4		Y	Qual.	
1,2,3-Trimethylbenzene	2/4	mg/L	0.0001	0.0002	0.0008	0.0026	0.000925	D	0.00229	0.00229	u	0.0009	1/4		Y	Qual.	
1,2,4-Trimethylbenzene	2/4	mg/L	0.0001	0.0002	0.0007	0.0014	0.0006	D	0.0013	0.0013	u	0.0011	1/4	1.2E-03	Y	Qual.	
1,3,5-Trimethylbenzene	2/4	mg/L	0.0001	0.0001	0.0005	0.0014	0.000525	D	0.00125	0.00125	u	0.0005	1/4	1.2E-03	Y	Qual.	
1-Ethyl-2-methylbenzene	2/4	mg/L	0.0001	0.0002	0.0003	0.0011	0.000425	D	0.000963	0.000963	u	0	2/4		Y	Qual.	

Attachment 9. Determination of Surface Water Potential Chemicals of Concern by Aggregate (Page 2 of 4)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Acetone	4/6	mg/L	0.0002	0.005	0.006	0.03	0.0107	D	0.0193	0.0193	u	0.017	1/6	6.1E-02	N		Max. detect < PRG
Chloroform	1/6	mg/L	0.0001	0.0025	0.0003	0.0003	0.000967	D	0.00195	0.0003	m	0.0003	0/6	1.6E-04	N		Below Background
Dimethylbenzene	1/6	mg/L	0.0001	0.0025	0.001	0.001	0.00107	D	0.00202	0.001	m	0.0008	1/6		Y	Quant.	
Methylene chloride	4/6	mg/L	0.0025	0.0025	0.0007	0.008	0.00302	D	0.0051	0.0051	u	0.0023	2/6	4.3E-03	Y	Quant.	
Tetrachloroethene	4/6	mg/L	0.0025	0.0025	0.00054	0.0033	0.00194	D	0.00276	0.00276	u	0.0013	3/6	1.1E-03	Y	Quant.	
Trichloroethene	4/6	mg/L	0.0002	0.0025	0.0006	0.014	0.00337	D	0.0077	0.0077	u	0.0014	2/6	1.6E-03	Y	Quant.	
cis-1,2-Dichloroethene	1/4	mg/L	0.0001	0.0002	0.0009	0.0009	0.00035	D	0.000785	0.000785	u	0.0009	0/4	6.1E-03	N		Below Background
Alpha activity	5/5	pCi/L			4.7	10.3	7.24	L	10.2	10.2	u	7.86	1/5		Y	Qual.	
Beta activity	5/5	pCi/L			14.7	30	20	L	28.3	28.3	u	41.8	0/5		N		Below Background
Radium-226	17/32	pCi/L	0.06	1	0.1	3.07	0.668	L	1.05	1.05	u	0.88	2/32		Y	Quant.	
Radium-228	1/19	pCi/L	0.07	1	0.36	0.36	0.552	D	0.728	0.36	m	0.34	1/19		Y	Quant.	
Thorium-228	2/7	pCi/L	0.07	0.4	0.36	5.05	0.947	D	2.28	2.28	u	3.12	1/7		Y	Quant.	
Thorium-230	11/32	pCi/L	-0.04	1	0.21	16.86	1.23	D	2.16	2.16	u	4.65	2/32		Y	Quant.	
Thorium-232	1/28	pCi/L	-0.01	1.21	0.25	0.25	0.425	D	0.572	0.25	m	0	1/28		N		<5% detected
Uranium-234	3/3	pCi/L			15.62	108.2	75.4	D	163	108	m	3.9	3/3		Y	Quant.	
Uranium-235	2/3	pCi/L	0.3	0.3	3.35	8.11	3.92	D	10.6	8.11	m	0	2/3		Y	Quant.	
Uranium-238	3/3	pCi/L			15.26	117.9	78.8	D	172	118	m	5.05	3/3		Y	Quant.	
Reach B																	
Chloride	1/1	mg/L			95	95	95	D		95	m	240	0/1		N		Below Background
Fluoride	1/1	mg/L			1	1	1	D		1	m	1.1	0/1	2.2E-01	N		Below Background
Nitrate	2/2	mg/L			1.5	2.1	1.8	D	3.69	2.1	m	2.51	0/2	1.0E+00	N		Below Background
Nitrite	1/1	mg/L			0.15	0.15	0.15	D		0.15	m	0.19	0/1	1.0E-01	N		Below Background
Sulfate	1/1	mg/L			190	190	190	D		190	m	210	0/1		N		Below Background
Ammonia	1/1	mg/L			0.32	0.32	0.32	D		0.32	m	0.9	0/1		N		Below Background
Phosphorous	2/2	mg/L			0.11	0.19	0.15	D	0.403	0.19	m	0.54	0/2		N		Below Background
Aluminum	2/2	mg/L			0.764	0.839	0.802	D	1.04	0.839	m	1.13	0/2	3.7E+00	N		Below Background
Antimony	1/3	mg/L	0.0182	0.0182	0.001	0.001	0.0125	D	0.0292	0.001	m	0.0402	0/3	1.5E-03	N		Below Background
Arsenic	1/3	mg/L	0.0009	0.0015	0.003	0.003	0.0018	D	0.00362	0.003	m	0.007	0/3	4.5E-05	N		Below Background
Barium	2/3	mg/L	0.082	0.082	0.1	0.151	0.111	D	0.171	0.151	m	0.166	0/3	2.6E-01	N		Below Background
Beryllium	2/3	mg/L	0.000415	0.000415	0.0005	0.00062	0.000512	D	0.000685	0.00062	m	0.0005	1/3	7.3E-03	N		Max. detect < PRG
Boron	1/3	mg/L	0.0381	0.0445	0.13	0.13	0.0709	D	0.157	0.13	m	0.16	0/3	3.3E-01	N		Below Background
Cadmium	1/3	mg/L	0.00195	0.00195	0.0005	0.0005	0.00147	D	0.00288	0.0005	m	0.0031	0/3	1.8E-03	N		Below Background
Calcium	3/3	mg/L			55	82.9	73.2	D	99.8	82.9	m	101	0/3		N		Below Background
Chromium	2/3	mg/L	0.0024	0.0024	0.0054	0.008	0.00527	D	0.00999	0.008	m	0.054	0/3	1.8E-02	N		Below Background
Cobalt	2/3	mg/L	0.00285	0.00285	0.001	0.0052	0.00302	D	0.00657	0.0052	m	0.001	1/3	2.2E-01	N		Max. detect < PRG
Copper	2/3	mg/L	0.00265	0.00265	0.003	0.0045	0.00338	D	0.00504	0.0045	m	0.0212	0/3	1.4E-01	N		Below Background
Cyanide	1/1	mg/L			0.01	0.01	0.01	D		0.01	m	0.01	0/1	7.3E-02	N		Below Background
Iron	3/3	mg/L			0.01	1.24	0.827	D	2.02	1.24	m	2.15	0/3	1.1E+00	N		Below Background
Lead	3/3	mg/L			0.001	0.0031	0.0024	D	0.00444	0.0031	m	0.0109	0/3	4.0E-04	N		Below Background
Lithium	1/3	mg/L	0.0103	0.01035	0.04	0.04	0.0202	D	0.0491	0.04	m	0.04	0/3	7.3E-02	N		Below Background
Magnesium	3/3	mg/L			25	32.3	29.7	D	36.5	32.3	m	38.1	0/3		N		Below Background
Manganese	3/3	mg/L			0.231	0.28	0.261	D	0.306	0.28	m	0.63	0/3	1.7E-01	N		Below Background
Mercury	1/3	mg/L	0.00005	0.00005	0.0001	0.0001	0.0000667	D	0.000115	0.0001	m	0.0001	0/3	1.1E-03	N		Below Background
Molybdenum	2/3	mg/L	0.00455	0.00455	0.0084	0.028	0.0137	D	0.0349	0.028	m	0.01	1/3	1.8E-02	Y	Quant.	
Nickel	2/3	mg/L	0.0053	0.0053	0.004	0.0108	0.0067	D	0.0128	0.0108	m	0.006	1/3	7.3E-02	N		Max. detect < PRG
Orthophosphate	1/1	mg/L			0.12	0.12	0.12	D		0.12	m	0.46	0/1		N		Below Background
Potassium	3/3	mg/L			6.2	8.3	7.13	D	8.93	8.3	m	15	0/3		N		Below Background
Selenium	2/3	mg/L	0.0012	0.0012	0.001	0.0101	0.0041	D	0.0129	0.0101	m	0.0028	1/3	1.8E-02	N		Max. detect < PRG
Silver	1/3	mg/L	0.00295	0.00295	0.001	0.001	0.0023	D	0.0042	0.001	m	0.001	0/3	1.8E-02	N		Below Background
Sodium	3/3	mg/L			69	92	77.6	D	98.8	92	m	140	0/3		N		Below Background
Strontium	3/3	mg/L			0.39	0.726	0.538	D	0.827	0.726	m	0.618	1/3	2.2E+00	N		Max. detect < PRG
Thallium	1/3	mg/L	0.0014	0.0014	0.002	0.002	0.0016	D	0.00218	0.002	m	0.002	0/3	2.9E-04	N		Below Background
Titanium	1/2	mg/L	0.00935	0.00935	0.0202	0.0202	0.0148	D	0.049	0.0202	m	0.0349	0/2		N		Below Background

Attachment 9. Determination of Surface Water Potential Chemicals of Concern by Aggregate (Page 3 of 4)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Uranium	24/26	mg/L	0.0675	0.0675	0.00096	0.01602	0.0106	L	0.0155	0.0155	u	0.00216	21/26		Y	Quant.	
Vanadium	1/3	mg/L	0.0105	0.0112	0.004	0.004	0.00857	D	0.0153	0.004	m	0.0199	0/3	2.6E-02	N		Below Background
Zinc	3/3	mg/L			0.01	0.0904	0.0423	D	0.114	0.0904	m	0.0568	1/3	1.1E+00	N		Max. detect < PRG
Bis(2-ethylhexyl)phthalate	1/3	mg/L	0.0025	0.005	0.001	0.001	0.00283	D	0.00624	0.001	m	0.005	0/3	4.8E-03	N		Below Background
Chrysene	1/3	mg/L	0.005	0.005	0.01	0.01	0.00667	D	0.0115	0.01	m	0.01	0/3	9.2E-03	N		Below Background
Fluoranthene	1/3	mg/L	0.005	0.005	0.0003	0.0003	0.00343	D	0.00801	0.0003	m	0.0005	0/3	1.5E-01	N		Below Background
Pyrene	1/3	mg/L	0.005	0.005	0.0004	0.0004	0.00347	D	0.00794	0.0004	m	0.0005	0/3	1.8E-02	N		Below Background
Acetone	2/3	mg/L	0.005	0.005	0.003	0.179	0.0623	D	0.233	0.179	m	0.017	1/3	6.1E-02	Y	Quant.	
Methylene chloride	1/3	mg/L	0.0025	0.0025	0.0012	0.0012	0.00207	D	0.00333	0.0012	m	0.0023	0/3	4.3E-03	N		Below Background
Trichloroethene	1/3	mg/L	0.0025	0.0025	0.0003	0.0003	0.00177	D	0.00391	0.0003	m	0.0014	0/3	1.6E-03	N		Below Background
Radium-226	13/27	pCi/L	0.02	0.71	0.15	1.07	0.321	D	0.405	0.405	u	0.88	1/27		Y	Quant.	
Thorium-228	1/9	pCi/L	0.05	1.4	1.74	1.74	0.449	D	0.849	0.849	u	3.12	0/9		N		Below Background
Thorium-230	12/28	pCi/L	0.02	1.7	0.13	2.65	0.423	D	0.605	0.605	u	4.65	0/28		N		Below Background
Uranium	1/1	pCi/L			3.9	3.9	3.9	D		3.9	m	0.00216	1/1		Y	Qual.	
Uranium-234	2/2	pCi/L			2.36	6.78	4.57	D	18.5	6.78	m	3.9	1/2		Y	Quant.	
Uranium-238	1/2	pCi/L	1.66	1.66	6.46	6.46	4.06	D	19.2	6.46	m	5.05	1/2		Y	Quant.	
Reach C																	
Nitrate	1/1	mg/L			1.1	1.1	1.1	D		1.1	m	2.51	0/1	1.0E+00	N		Below Background
Phosphorous	1/1	mg/L			0.24	0.24	0.24	D		0.24	m	0.54	0/1		N		Below Background
Aluminum	2/2	mg/L			0.44	0.653	0.547	D	1.22	0.653	m	1.13	0/2	3.7E+00	N		Below Background
Arsenic	1/2	mg/L	0.00175	0.00175	0.0029	0.0029	0.00233	D	0.00596	0.0029	m	0.007	0/2	4.5E-05	N		Below Background
Barium	1/2	mg/L	0.0565	0.0565	0.149	0.149	0.103	D	0.395	0.149	m	0.166	0/2	2.6E-01	N		Below Background
Calcium	2/2	mg/L			58	76.6	67.3	D	126	76.6	m	101	0/2		N		Below Background
Iron	2/2	mg/L			0.661	0.925	0.793	D	1.63	0.925	m	2.15	0/2	1.1E+00	N		Below Background
Magnesium	2/2	mg/L			17.9	26	22	D	47.5	26	m	38.1	0/2		N		Below Background
Manganese	2/2	mg/L			0.118	0.219	0.169	D	0.487	0.219	m	0.63	0/2	1.7E-01	N		Below Background
Potassium	2/2	mg/L			6.12	6.21	6.17	D	6.45	6.21	m	15	0/2		N		Below Background
Sodium	2/2	mg/L			32.8	55	43.9	D	114	55	m	140	0/2		N		Below Background
Strontium	2/2	mg/L			0.484	0.977	0.731	D	2.29	0.977	m	0.618	1/2	2.2E+00	N		Max. detect < PRG
Titanium	1/2	mg/L	0.00695	0.00695	0.0096	0.0096	0.00828	D	0.0166	0.0096	m	0.0349	0/2		N		Below Background
Zinc	1/2	mg/L	0.00905	0.00905	0.0112	0.0112	0.0101	D	0.0169	0.0112	m	0.0568	0/2	1.1E+00	N		Below Background
Radium-226	1/2	pCi/L	0.46	0.46	4.03	4.03	2.25	D	13.5	4.03	m	0.88	1/2		Y	Quant.	
Thorium-228	1/2	pCi/L	0.76	0.76	2.46	2.46	1.61	D	6.98	2.46	m	3.12	0/2		N		Below Background
Thorium-230	2/2	pCi/L			1.38	2.03	1.71	D	3.76	2.03	m	4.65	0/2		N		Below Background
Uranium-234	2/2	pCi/L			1.48	1.62	1.55	D	1.99	1.62	m	3.9	0/2		N		Below Background
Uranium-238	1/2	pCi/L	0.84	0.84	1.76	1.76	1.3	D	4.2	1.76	m	5.05	0/2		N		Below Background

UCL_{95} = 95% upper confidence limit on the mean concentration
PRG = Preliminary Remediation Goal
PCOC = Potential Contaminant of Concern

[a] Distribution flags:
D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of UCL_{95}.
L = Lognormal; H-statistic used in calculations of UCL_{95}.
N = Normal; t-statistic used in calculations of UCL_{95}.
X = Neither normal nor lognormal; t-statistic used in calculations of UCL_{95}.

[b] Basis for determining the exposure concentration:
m = maximum detected concentration.
u = 95% upper confidence limit on the mean concentration.

[c] EPA Region IX tap water PRG, based on a risk level of 10^{-6} or a hazard level of 0.1 (note that Region IX noncarcinogenic PRGs are provided for a hazard level of 1.0; these values have been adjusted to a hazard level of 0.1 for this screening).

[d] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively;

Attachment 9. Determination of Surface Water Potential Chemicals of Concern by Aggregate (Page 4 of 4)
(only detected analytes are shown)

Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]	Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Tap Water PRG[c]	PCOC	Type PCOC[d]	Justification[e]

Qual. = Qualitative

Quant. = Quantitative.

[e] Justification for eliminating the analyte from the PCOC list.

Attachment 10. Determination of Sediment Potential Chemicals of Concern by Aggregate (Page 1 of 5)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
HS Group 1	Radium-226	6/9	pCi/g	0	0.7	1	3.2	1.4	Z	2.06	2.06	u	4.73	0/9		N		Below Background
HS Group 1	Thorium-230	6/9	pCi/g	0	1.2	3.3	128.7	33.7	Z	67.7	67.7	u	2.2	6/9		Y	Quant.	
HS Group 1	Thorium-232	7/9	pCi/g	0	1	1	4.9	2.06	Z	3.04	3.04	u	1.19	6/9		Y	Quant.	
HS Group 2	Radium-226	7/12	pCi/g	0.1	0.7	1.4	4.3	1.43	L	3.86	3.86	u	4.73	0/12		N		Below Background
HS Group 2	Thorium-230	10/12	pCi/g	0	0.4	1.5	84.7	25.2	Z	41.4	41.4	u	2.2	9/12		Y	Quant.	
HS Group 2	Thorium-232	6/12	pCi/g	0	1	1	3	1.05	Z	1.62	1.62	u	1.19	4/12		Y	Quant.	
Reach A	Phosphorous	4/4	mg/kg			900	1200	1080	D	1250	1200	m	1700	0/4		N		Below Background
Reach A	Aluminum	12/12	mg/kg			1640	53000	19500	X	31300	31300	u	51000	1/12	7.5E+03	Y	Qual.	
Reach A	Arsenic	7/12	mg/kg	5	12.55	4.9	10	8.05	N	9.52	9.52	u	13	0/12	3.8E-01	N		Below Background
Reach A	Barium	12/12	mg/kg			51.7	740	301	X	454	454	u	890	0/12	5.2E+02	N		Below Background
Reach A	Beryllium	5/12	mg/kg	0.185	0.65	0.86	1	0.623	D	0.801	0.801	u	2	0/12	1.5E+01	N		Below Background
Reach A	Cadmium	3/11	mg/kg	0.245	1	0.65	1.3	0.73	D	0.925	0.925	u	4	0/11	3.7E+00	N		Below Background
Reach A	Calcium	11/12	mg/kg	2770	2770	976	101000	43400	N	61100	61100	u	116000	0/12		N		Below Background
Reach A	Cerium	4/4	mg/kg			71	90	77.5	D	87.6	87.6	u	85	1/4		Y	Qual.	
Reach A	Chromium	12/12	mg/kg			8.3	91	44.7	L	111	91	m	140	0/12	3.0E+01	N		Below Background
Reach A	Cobalt	6/11	mg/kg	2.55	6.3	5.1	26	10.9	L	25.1	25.1	u	31	0/11	3.3E+02	N		Below Background
Reach A	Copper	10/12	mg/kg	9.45	13.35	12.4	120	44.4	L	98.6	98.6	u	330	0/12	2.8E+02	N		Below Background
Reach A	Gallium	4/4	mg/kg			10	12	11.3	D	12.4	12	m	18	0/4		N		Below Background
Reach A	Iron	12/12	mg/kg			6110	33000	17900	L	26700	26700	u	42000	0/12	2.2E+03	N		Below Background
Reach A	Lanthanum	4/4	mg/kg			35	40	36.8	D	39.4	39.4	u	38	1/4		Y	Qual.	
Reach A	Lead	11/12	mg/kg	9.75	9.75	25.1	333	89.6	L	216	216	u	380	0/12	4.0E+01	N		Below Background
Reach A	Lithium	5/9	mg/kg	0.455	1.15	5.4	20	9.46	X	15.3	15.3	u	22	0/9	1.5E+02	N		Below Background
Reach A	Magnesium	12/12	mg/kg			2760	12200	7730	N	8960	8960	u	21000	0/12		N		Below Background
Reach A	Manganese	12/12	mg/kg			262	1600	849	L	1190	1190	u	3200	0/12	3.1E+02	N		Below Background
Reach A	Molybdenum	3/12	mg/kg	0.55	11.5	2	25.1	4.79	D	8.62	8.62	u	6	1/12	3.7E+01	N		Max. detect < PRG
Reach A	Neodymium	4/4	mg/kg			33	37	34.5	D	36.5	36.5	u	35	1/4		Y	Qual.	
Reach A	Nickel	12/12	mg/kg			6.6	43	21.8	L	33.8	33.8	u	72	0/12	1.5E+02	N		Below Background
Reach A	Niobium	4/4	mg/kg			9	12	10.3	D	11.7	11.7	u	7	4/4		Y	Qual.	
Reach A	Potassium	6/12	mg/kg	124	630	327	16000	5540	X	9460	9460	u	15000	3/12		N		Essential Nutrient (low conc.)
Reach A	Scandium	4/4	mg/kg			7	8	7.5	D	8.18	8	m	8	0/4		N		Below Background
Reach A	Selenium	5/8	mg/kg	0.145	0.18	0.33	83.6	20.1	X	41.2	41.2	u	54.4	1/8	3.7E+01	Y	Quant.	
Reach A	Silver	2/12	mg/kg	0.355	1.15	2.6	3	1.06	D	1.51	1.51	u	4	0/12	3.7E+01	N		Below Background
Reach A	Sodium	5/12	mg/kg	73.5	630	172	9900	3370	D	5740	5740	u	10000	0/12		N		Below Background
Reach A	Strontium	9/9	mg/kg			43.3	180	127	N	159	159	u	380	0/9	4.5E+03	N		Below Background
Reach A	Thallium	2/8	mg/kg	0.455	12.55	1.4	1.6	4.91	D	8.48	1.6	m	0	2/8	6.0E-01	Y	Quant.	
Reach A	Thorium	4/4	mg/kg			7	11	9	D	10.9	10.9	u	9	1/4		Y	Qual.	
Reach A	Titanium	9/9	mg/kg			45.4	3000	1370	X	2320	2320	u	2800	4/9		Y	Qual.	
Reach A	Uranium	18/23	mg/kg	8.1	9.95	1.9	8.26	4.94	X	5.85	5.85	u	8.69	0/23		N		Below Background
Reach A	Vanadium	12/12	mg/kg			13.1	92	39.8	X	56.4	56.4	u	99	0/12	5.2E+01	N		Below Background
Reach A	Ytterbium	4/4	mg/kg			2	3	2.25	D	2.84	2.84	u	3	0/4		N		Below Background
Reach A	Yttrium	4/4	mg/kg			20	23	21.5	D	23	23	u	24	0/4		N		Below Background
Reach A	Zinc	12/12	mg/kg			39.2	250	129	L	197	197	u	1370	0/12	2.2E+03	N		Below Background
Reach A	4,4'-DDT	1/5	mg/kg	0.00485	0.0205	0.016	0.016	0.014	D	0.0208	0.016	m	0	1/5	1.7E+00	N		Max. detect < PRG
Reach A	Aldrin	1/5	mg/kg	0.002	0.0105	0.022	0.022	0.00982	D	0.0173	0.0173	u	0.023	0/5	2.6E-02	N		Below Background
Reach A	2-Methylnaphthalene	1/8	mg/kg	0.2	1.15	0.05	0.05	0.513	D	0.797	0.05	m	0	1/8		Y	Qual.	
Reach A	Acenaphthene	7/8	mg/kg	0.2	0.2	0.11	0.89	0.475	L	1.56	0.89	m	0.25	4/8	2.6E+02	N		Max. detect < PRG
Reach A	Anthracene	8/9	mg/kg	0.2	0.2	0.19	3.2	1.15	L	6.72	3.2	m	0.2	7/9	1.4E+03	N		Max. detect < PRG
Reach A	Benz(a)anthracene	11/12	mg/kg	0.2	0.2	0.12	6	2.37	N	3.36	3.36	u	2.3	5/12	5.6E-01	Y	Quant.	
Reach A	Benzo(a)pyrene	11/12	mg/kg	0.2	0.2	0.1	5.4	2.12	N	3.01	3.01	u	1.7	6/12	5.6E-02	Y	Quant.	
Reach A	Benzo(b)fluoranthene	11/12	mg/kg	0.2	0.2	0.088	5.1	1.98	L	9.1	5.1	m	1.5	6/12	5.6E-01	Y	Quant.	
Reach A	Benzo(ghi)perylene	11/12	mg/kg	0.2	0.2	0.093	4	1.51	L	6.19	4	m	1.8	4/12		Y	Qual.	
Reach A	Benzo(k)fluoranthene	11/12	mg/kg	0.2	0.2	0.11	4.9	1.81	N	2.56	2.56	u	1.4	6/12	5.6E+00	N		Max. detect < PRG

Attachment 10. Determination of Sediment Potential Chemicals of Concern by Aggregate (Page 2 of 5)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Reach A	Bis(2-ethylhexyl)phthalate	9/10	mg/kg	0.29	0.29	0.13	4.1	1.14	L	5.18	4.1	m	0.56	5/10	3.2E+01	N		Max. detect < PRG
Reach A	Butyl benzyl phthalate	1/8	mg/kg	0.2	1.15	0.75	0.75	0.599	D	0.859	0.75	m	0	1/8	9.3E+02	N		Max. detect < PRG
Reach A	Carbazole	1/5	mg/kg	0.21	1.05	0.3	0.3	0.551	D	0.893	0.3	m	0	1/5	2.2E+01	N		Max. detect < PRG
Reach A	Chrysene	9/11	mg/kg	0.2	0.205	0.87	13	3.38	L	25.4	13	m	2.4	6/11	5.6E+01	N		Max. detect < PRG
Reach A	Di-n-butyl phthalate	2/8	mg/kg	0.205	1.15	0.043	0.048	0.492	D	0.791	0.048	m	0.047	1/8	5.5E+02	N		Max. detect < PRG
Reach A	Di-n-octylphthalate	1/8	mg/kg	0.2	1.15	0.21	0.21	0.528	D	0.801	0.21	m	0	1/8	1.1E+02	N		Max. detect < PRG
Reach A	Dibenz(a,h)anthracene	2/10	mg/kg	0.2	1.15	0.7	1.8	0.676	D	0.986	0.986	u	0	2/10	5.6E-02	Y	Quant.	
Reach A	Dibenzofuran	7/8	mg/kg	0.2	0.2	0.093	0.76	0.324	L	0.798	0.76	m	0.086	7/8	2.1E+01	N		Max. detect < PRG
Reach A	Fluoranthene	12/12	mg/kg			0.14	24	7.43	L	56.7	24	m	7.1	5/12	2.0E+02	N		Max. detect < PRG
Reach A	Fluorene	7/8	mg/kg	0.2	0.2	0.19	1.6	0.67	L	2.25	1.6	m	0.2	6/8	1.8E+02	N		Max. detect < PRG
Reach A	Indeno(1,2,3-cd)pyrene	9/12	mg/kg	0.2	1.15	0.4	3	1.24	L	3.16	3	m	1.5	4/12	5.6E-01	Y	Quant.	
Reach A	Naphthalene	3/8	mg/kg	0.2	1.15	0.057	0.28	0.4	D	0.655	0.28	m	0.04	3/8	5.5E+00	N		Max. detect < PRG
Reach A	Phenanthrene	12/12	mg/kg			0.062	14	4.62	L	63	14	m	5.7	4/12		Y	Qual.	
Reach A	Pyrene	12/12	mg/kg			0.076	11	4.39	N	6.31	6.31	u	4	5/12	1.5E+02	N		Max. detect < PRG
Reach A	2-Butanone	1/6	mg/kg	0.006	0.0075	0.008	0.008	0.00683	D	0.00751	0.00751	u	0	1/6	6.9E+02	N		Max. detect < PRG
Reach A	Acetone	3/6	mg/kg	0.006	0.0075	0.034	0.037	0.0208	D	0.0336	0.0336	u	0	3/6	1.4E+02	N		Max. detect < PRG
Reach A	Acrylonitrile	1/3	mg/kg	0.006	0.007	0.002	0.002	0.005	D	0.00946	0.002	m	0	1/3	1.9E-01	N		Max. detect < PRG
Reach A	Chloroethane	1/6	mg/kg	0.006	0.0075	0.002	0.002	0.00575	D	0.00735	0.002	m	0	1/6	1.6E+03	N		Max. detect < PRG
Reach A	Methylene chloride	3/6	mg/kg	0.003	0.0035	0.031	0.045	0.0209	D	0.0373	0.0373	u	0.03	3/6	8.5E+00	N		Max. detect < PRG
Reach A	Toluene	2/6	mg/kg	0.003	0.0035	0.001	0.002	0.00267	D	0.00348	0.002	m	0.002	0/6	5.2E+02	N		Below Background
Reach A	Bismuth-211	1/1	pCi/g			3.5	3.5	3.5	D		3.5	m	2.9	1/1		Y	Quant.	
Reach A	Bismuth-212	1/1	pCi/g			2.2	2.2	2.2	D		2.2	m	1.6	1/1		Y	Quant.	
Reach A	Bismuth-214	1/1	pCi/g			1.1	1.1	1.1	D		1.1	m	0.97	1/1		Y	Quant.	
Reach A	Cesium-137	3/6	pCi/g	0.01	0.07	0.01	0.02	0.0267	D	0.0452	0.02	m	0	3/6		Y	Quant.	
Reach A	Lead-212	1/1	pCi/g			0.87	0.87	0.87	D		0.87	m	0.96	0/1		N		Below Background
Reach A	Potassium-40	5/5	pCi/g			8.06	13.52	10.3	L	14.1	13.5	m	15.6	0/5		N		Below Background
Reach A	Radium-226	271/280	pCi/g	0	0.8	0.3	25.1	1.16	Z	1.31	1.31	u	4.73	1/280		Y	Quant.	
Reach A	Radium-228	9/9	pCi/g			0.26	1.1	0.544	L	0.903	0.903	u	1.32	0/9		N		Below Background
Reach A	Thorium-228	10/10	pCi/g			0.4	1.31	0.806	N	0.994	0.994	u	1.32	0/10		N		Below Background
Reach A	Thorium-230	276/282	pCi/g	0	0.3	0.19	1398.7	9.85	Z	18.1	18.1	u	2.2	151/282		Y	Quant.	
Reach A	Thorium-232	260/278	pCi/g	0	0.9	0.2	3.4	0.713	Z	0.75	0.75	u	1.19	15/278		Y	Quant.	
Reach A	Uranium-238	240/268	pCi/g	0	1.4	0.2	10.9	0.82	Z	0.895	0.895	u	4.3	2/268		Y	Quant.	
Reach B	Phosphorous	1/1	mg/kg			1100	1100	1100	D		1100	m	1700	0/1		N		Below Background
Reach B	Aluminum	6/6	mg/kg			1330	51000	12400	L	322000	51000	m	51000	0/6	7.5E+03	N		Below Background
Reach B	Arsenic	5/6	mg/kg	5	5	3.5	20.6	8.3	L	22.7	20.6	m	13	1/6	3.8E-01	Y	Quant.	
Reach B	Barium	6/6	mg/kg			61.5	670	294	L	1790	670	m	890	0/6	5.2E+02	N		Below Background
Reach B	Beryllium	1/6	mg/kg	0.245	0.46	1	1	0.421	D	0.663	0.663	u	2	0/6	1.5E+01	N		Below Background
Reach B	Cadmium	3/6	mg/kg	0.345	1	0.67	1.6	0.88	D	1.27	1.27	u	4	0/6	3.7E+00	N		Below Background
Reach B	Calcium	6/6	mg/kg			27100	97600	57900	N	80400	80400	u	116000	0/6		N		Below Background
Reach B	Cerium	1/1	mg/kg			85	85	85	D		85	m	85	0/1		N		Below Background
Reach B	Chromium	3/3	mg/kg			39	75	56.3	D	86.7	75	m	140	0/3	3.0E+01	N		Below Background
Reach B	Cobalt	6/6	mg/kg			6.4	21	12.6	L	23.2	21	m	31	0/6	3.3E+02	N		Below Background
Reach B	Copper	3/6	mg/kg	5.35	11.05	16.6	59.2	26.9	D	47.3	47.3	u	330	0/6	2.8E+02	N		Below Background
Reach B	Gallium	1/1	mg/kg			12	12	12	D		12	m	18	0/1		N		Below Background
Reach B	Iron	6/6	mg/kg			8140	29000	16700	L	31400	29000	m	42000	0/6	2.2E+03	N		Below Background
Reach B	Lanthanum	1/1	mg/kg			39	39	39	D		39	m	38	1/1		Y	Qual.	
Reach B	Lead	6/6	mg/kg			15.3	83.2	53.8	N	76.8	76.8	u	380	0/6	4.0E+01	N		Below Background
Reach B	Lithium	4/6	mg/kg	1.15	2.6	1.2	20	5.34	D	11.3	11.3	u	22	0/6	1.5E+02	N		Below Background
Reach B	Magnesium	6/6	mg/kg			5200	14700	8820	L	14300	14300	u	21000	0/6		N		Below Background
Reach B	Manganese	6/6	mg/kg			715	3710	1970	L	5570	3710	m	3200	1/6	3.1E+02	Y	Quant.	
Reach B	Neodymium	1/1	mg/kg			35	35	35	D		35	m	35	0/1		N		Below Background
Reach B	Nickel	3/6	mg/kg	5.8	9.05	11.5	34	15.6	D	24.8	24.8	u	72	0/6	1.5E+02	N		Below Background
Reach B	Niobium	1/1	mg/kg			12	12	12	D		12	m	7	1/1		Y	Qual.	

Attachment 10. Determination of Sediment Potential Chemicals of Concern by Aggregate (Page 3 of 5)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Reach B	Potassium	5/6	mg/kg	129	129	525	16000	3200	L	1060000	16000	m	15000	1/6		N		Essential Nutrient (low conc.)
Reach B	Scandium	1/1	mg/kg			8	8	8	D		8	m	8	0/1		N		Below Background
Reach B	Sodium	4/6	mg/kg	95.5	153.5	200	9300	1710	D	4770	4770	u	10000	0/6		N		Below Background
Reach B	Strontium	6/6	mg/kg			58.1	180	93.6	L	148	148	u	380	0/6	4.5E+03	N		Below Background
Reach B	Thallium	1/5	mg/kg	0.6	0.85	4	4	1.36	D	2.77	2.77	u	0	1/5	6.0E-01	Y	Quant.	
Reach B	Thorium	1/1	mg/kg			9	9	9	D		9	m	9	0/1		N		Below Background
Reach B	Titanium	6/6	mg/kg			32.2	3000	600	L	149000	3000	m	2800	1/6		Y	Qual.	
Reach B	Uranium	22/27	mg/kg	8.5	11.85	1.8	7.2	4.87	L	5.88	5.88	u	8.69	0/27		N		Below Background
Reach B	Vanadium	6/6	mg/kg			17.9	88	33.6	X	56.3	56.3	u	99	0/6	5.2E+01	N		Below Background
Reach B	Ytterbium	1/1	mg/kg			2	2	2	D		2	m	3	0/1		N		Below Background
Reach B	Yttrium	1/1	mg/kg			22	22	22	D		22	m	24	0/1		N		Below Background
Reach B	Zinc	6/6	mg/kg			54.2	210	127	N	169	169	u	1370	0/6	2.2E+03	N		Below Background
Reach B	Aldrin	1/5	mg/kg	0.0105	0.045	0.022	0.022	0.0209	D	0.0344	0.022	m	0.023	0/5	2.6E-02	N		Below Background
Reach B	Endosulfan sulfate	1/5	mg/kg	0.0205	0.085	0.034	0.034	0.0384	D	0.0637	0.034	m	0	1/5		Y	Qual.	
Reach B	Endrin ketone	1/5	mg/kg	0.0205	0.085	0.1	0.1	0.0516	D	0.0877	0.0877	u	0	1/5		Y	Qual.	
Reach B	Lindane	1/5	mg/kg	0.0105	0.045	0.13	0.13	0.0425	D	0.0911	0.0911	u	0	1/5	4.2E-01	N		Max. detect < PRG
Reach B	gamma-Chlordane	1/5	mg/kg	0.0105	0.045	0.17	0.17	0.0505	D	0.116	0.116	u	0	1/5	1.6E+00	N		Max. detect < PRG
Reach B	Acenaphthene	2/5	mg/kg	0.21	0.95	5.9	7.8	3.01	D	6.43	6.43	u	0.25	2/5	2.6E+02	N		Max. detect < PRG
Reach B	Anthracene	4/5	mg/kg	0.21	0.21	0.088	23	8.17	D	18.7	18.7	u	0.2	3/5	1.4E+03	N		Max. detect < PRG
Reach B	Benz(a)anthracene	6/6	mg/kg			0.16	40	14	L	8730000	40	m	2.3	3/6	5.6E-01	Y	Quant.	
Reach B	Benzo(a)pyrene	6/6	mg/kg			0.16	35	11.7	L	3670000	35	m	1.7	3/6	5.6E-02	Y	Quant.	
Reach B	Benzo(b)fluoranthene	5/6	mg/kg	0.21	0.21	0.34	30	10.4	L	1660000	30	m	1.5	3/6	5.6E-01	Y	Quant.	
Reach B	Benzo(ghi)perylene	4/6	mg/kg	0.21	0.21	0.77	22	6.87	D	14.8	14.8	u	1.8	3/6		Y	Qual.	
Reach B	Benzo(k)fluoranthene	5/6	mg/kg	0.21	0.21	0.43	34	10.2	L	1220000	34	m	1.4	3/6	5.6E+00	Y	Quant.	
Reach B	Bis(2-ethylhexyl)phthalate	4/5	mg/kg	11	11	0.11	4.7	3.62	D	7.94	4.7	m	0.56	2/5	3.2E+01	N		Max. detect < PRG
Reach B	Butyl benzyl phthalate	1/5	mg/kg	0.21	14.5	0.051	0.051	5.34	D	11.9	0.051	m	0	1/5	9.3E+02	N		Max. detect < PRG
Reach B	Chrysene	6/6	mg/kg			0.22	47	14.9	L	4140000	47	m	2.4	3/6	5.6E+01	N		Max. detect < PRG
Reach B	Dibenzofuran	2/5	mg/kg	0.21	0.95	3.6	6.3	2.25	D	4.79	4.79	u	0.086	2/5	2.1E+01	N		Max. detect < PRG
Reach B	Fluoranthene	6/6	mg/kg			0.44	190	51.9	L	1080000000	190	m	7.1	3/6	2.0E+02	N		Max. detect < PRG
Reach B	Fluorene	3/5	mg/kg	0.21	0.21	0.2	9.2	3.42	D	7.67	7.67	u	0.2	2/5	1.8E+02	N		Max. detect < PRG
Reach B	Indeno(1,2,3-cd)pyrene	4/6	mg/kg	0.21	0.21	0.75	21	6.83	D	14.7	14.7	u	1.5	3/6	5.6E-01	Y	Quant.	
Reach B	Phenanthrene	6/6	mg/kg			0.12	93	29.7	L	4930000000	93	m	5.7	2/6		Y	Qual.	
Reach B	Pyrene	6/6	mg/kg			0.36	81	28.3	L	15100000	81	m	4	3/6	1.5E+02	N		Max. detect < PRG
Reach B	Acetone	1/2	mg/kg	0.0065	0.0065	0.028	0.028	0.0173	D	0.0851	0.028	m	0	1/2	1.4E+02	N		Max. detect < PRG
Reach B	Toluene	1/2	mg/kg	0.0035	0.0035	0.007	0.007	0.00525	D	0.0163	0.007	m	0.002	1/2	5.2E+02	N		Max. detect < PRG
Reach B	Actinium-227	2/5	pCi/g	0.02	0.31	0.23	0.32	0.188	D	0.322	0.32	m	0	2/5		Y	Quant.	
Reach B	Bismuth-211	2/2	pCi/g			2.8	3.1	2.95	D	3.9	3.1	m	2.9	1/2		Y	Quant.	
Reach B	Bismuth-214	2/2	pCi/g			0.86	0.94	0.9	D	1.15	0.94	m	0.97	0/2		N		Below Background
Reach B	Cesium-137	1/5	pCi/g	-0.004	0.02	0.02	0.02	0.0112	D	0.0206	0.02	m	0	1/5		Y	Quant.	
Reach B	Lead-212	2/2	pCi/g			0.65	0.75	0.7	D	1.02	0.75	m	0.96	0/2		N		Below Background
Reach B	Lead-214	2/2	pCi/g			1.3	1.4	1.35	D	1.67	1.4	m	0	2/2		Y	Quant.	
Reach B	Potassium-40	7/7	pCi/g			1.4	15.7	9.87	N	13.1	13.1	u	15.6	1/7		Y	Quant.	
Reach B	Radium-226	183/347	pCi/g	0	1.5	0.15	13.1	0.991	Z	1.09	1.09	u	4.73	3/347		Y	Quant.	
Reach B	Radium-228	12/14	pCi/g	0.29	0.6	0.14	1.27	0.734	N	0.887	0.887	u	1.32	0/14		N		Below Background
Reach B	Thorium-228	14/15	pCi/g	0.78	0.78	0.42	1.85	1	L	1.22	1.22	u	1.32	1/15		Y	Quant.	
Reach B	Thorium-230	205/352	pCi/g	0	3	0.7	198.7	8.16	Z	10.1	10.1	u	2.2	157/352		Y	Quant.	
Reach B	Thorium-232	202/348	pCi/g	0	2	0.4	7.8	1.18	Z	1.26	1.26	u	1.19	120/348		Y	Quant.	
Reach B	Uranium-238	24/330	pCi/g	0	8.3	0.79	9.9	0.395	D	0.525	0.525	u	4.3	5/330		Y	Quant.	
Reach C	Aluminum	6/6	mg/kg			6020	7900	7080	N	7580	7580	u	51000	0/6	7.5E+03	N		Below Background
Reach C	Arsenic	6/6	mg/kg			3.8	26.9	8.37	X	15.9	15.9	u	13	1/6	3.8E-01	Y	Quant.	
Reach C	Barium	6/6	mg/kg			110	288	147	X	205	205	u	890	0/6	5.2E+02	N		Below Background
Reach C	Beryllium	2/6	mg/kg	0.235	0.29	0.59	1.9	0.593	D	1.13	1.13	u	2	0/6	1.5E+01	N		Below Background
Reach C	Boron	1/6	mg/kg	1.5	4.55	3.4	3.4	2.43	D	3.47	3.4	m	75.9	0/6	4.9E+02	N		Below Background

Attachment 10. Determination of Sediment Potential Chemicals of Concern by Aggregate (Page 4 of 5)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]		Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]
Reach C	Calcium	6/6	mg/kg			2400	47100	12900	L	238000	47100	m	116000	0/6		N		Below Background
Reach C	Chromium	3/6	mg/kg	5.65	7.2	15.1	45	15.9	D	28.2	28.2	u	140	0/6	3.0E+01	N		Below Background
Reach C	Cobalt	5/6	mg/kg	3.1	3.1	6	28.6	9.72	L	36.8	28.6	m	31	0/6	3.3E+02	N		Below Background
Reach C	Copper	3/6	mg/kg	4.25	5.8	17.2	18.9	11.6	D	17.5	17.5	u	330	0/6	2.8E+02	N		Below Background
Reach C	Iron	6/6	mg/kg			11300	52600	19000	X	32500	32500	u	42000	1/6	2.2E+03	N		Essential Nutrient (low conc.)
Reach C	Lead	6/6	mg/kg			7.5	26.4	18.3	L	40.7	26.4	m	380	0/6	4.0E+01	N		Below Background
Reach C	Lithium	3/6	mg/kg	1.85	3.1	3.4	6.4	3.68	D	4.96	4.96	u	22	0/6	1.5E+02	N		Below Background
Reach C	Magnesium	6/6	mg/kg			1840	4010	2860	L	4300	4010	m	21000	0/6		N		Below Background
Reach C	Manganese	6/6	mg/kg			456	2830	924	X	1690	1690	u	3200	0/6	3.1E+02	N		Below Background
Reach C	Nickel	3/6	mg/kg	6.35	7.7	13.1	44.9	15.6	D	27.7	27.7	u	72	0/6	1.5E+02	N		Below Background
Reach C	Potassium	6/6	mg/kg			691	974	833	N	915	915	u	15000	0/6		N		Below Background
Reach C	Selenium	2/6	mg/kg	0.16	0.24	0.39	0.42	0.258	D	0.355	0.355	u	54.4	0/6	3.7E+01	N		Below Background
Reach C	Sodium	4/6	mg/kg	77	92	123	159	123	D	150	150	u	10000	0/6		N		Below Background
Reach C	Strontium	6/6	mg/kg			15	155	49.1	L	266	155	m	380	0/6	4.5E+03	N		Below Background
Reach C	Thallium	3/6	mg/kg	0.9	1.05	2.2	8.1	2.64	D	4.92	4.92	u	0	3/6	6.0E-01	Y	Quant.	
Reach C	Titanium	6/6	mg/kg			126	251	210	X	245	245	u	2800	0/6		N		Below Background
Reach C	Vanadium	6/6	mg/kg			17.2	63.1	26.6	X	41.4	41.4	u	99	0/6	5.2E+01	N		Below Background
Reach C	Zinc	6/6	mg/kg			34.8	131	71.6	L	158	131	m	1370	0/6	2.2E+03	N		Below Background
Reach C	4,4'-DDD	1/6	mg/kg	0.0023	0.0265	0.016	0.016	0.0137	D	0.0223	0.016	m	0	1/6	2.4E+00	N		Max. detect < PRG
Reach C	Aldrin	1/6	mg/kg	0.00115	0.0135	0.021	0.021	0.00914	D	0.0156	0.0156	u	0.023	0/6	2.6E-02	N		Below Background
Reach C	Endrin ketone	1/6	mg/kg	0.0023	0.0265	0.079	0.079	0.0242	D	0.0479	0.0479	u	0	1/6		Y	Qual.	
Reach C	4-Methylphenol	1/6	mg/kg	0.22	0.245	0.17	0.17	0.223	D	0.246	0.17	m	0	1/6	2.7E+01	N		Max. detect < PRG
Reach C	Anthracene	3/6	mg/kg	0.23	0.245	0.049	0.07	0.147	D	0.228	0.07	m	0.2	0/6	1.4E+03	N		Below Background
Reach C	Benz(a)anthracene	4/6	mg/kg	0.23	0.235	0.16	0.5	0.291	D	0.388	0.388	u	2.3	0/6	5.6E-01	N		Below Background
Reach C	Benzo(a)pyrene	4/6	mg/kg	0.23	0.235	0.18	0.67	0.344	D	0.495	0.495	u	1.7	0/6	5.6E-02	N		Below Background
Reach C	Benzo(b)fluoranthene	4/6	mg/kg	0.23	0.235	0.094	0.72	0.323	D	0.501	0.501	u	1.5	0/6	5.6E-01	N		Below Background
Reach C	Benzo(ghi)perylene	1/6	mg/kg	0.23	0.265	0.19	0.19	0.234	D	0.255	0.19	m	1.8	0/6		N		Below Background
Reach C	Benzo(k)fluoranthene	4/6	mg/kg	0.23	0.235	0.16	0.72	0.339	D	0.508	0.508	u	1.4	0/6	5.6E+00	N		Below Background
Reach C	Bis(2-ethylhexyl)phthalate	4/6	mg/kg	0.23	0.235	0.11	0.29	0.211	D	0.262	0.262	u	0.56	0/6	3.2E+01	N		Below Background
Reach C	Butyl benzyl phthalate	1/6	mg/kg	0.22	0.265	0.1	0.1	0.215	D	0.263	0.1	m	0	1/6	9.3E+02	N		Max. detect < PRG
Reach C	Chrysene	4/6	mg/kg	0.23	0.235	0.19	0.78	0.393	D	0.583	0.583	u	2.4	0/6	5.6E+01	N		Below Background
Reach C	Diethyl phthalate	2/6	mg/kg	0.23	0.245	0.072	0.083	0.184	D	0.252	0.083	m	0	2/6	4.4E+03	N		Max. detect < PRG
Reach C	Fluoranthene	4/6	mg/kg	0.23	0.235	0.37	1.3	0.616	D	0.964	0.964	u	7.1	0/6	2.0E+02	N		Below Background
Reach C	Fluorene	1/6	mg/kg	0.22	0.245	0.033	0.033	0.201	D	0.268	0.033	m	0.2	0/6	1.8E+02	N		Below Background
Reach C	Indeno(1,2,3-cd)pyrene	1/6	mg/kg	0.23	0.265	0.18	0.18	0.233	D	0.256	0.18	m	1.5	0/6	5.6E-01	N		Below Background
Reach C	Phenanthrene	4/6	mg/kg	0.23	0.235	0.23	0.47	0.328	D	0.418	0.418	u	5.7	0/6		N		Below Background
Reach C	Pyrene	4/6	mg/kg	0.23	0.235	0.35	1.2	0.598	D	0.924	0.924	u	4	0/6	1.5E+02	N		Below Background
Reach C	2-Butanone	1/2	mg/kg	0.0365	0.0365	0.002	0.002	0.0193	D	0.128	0.002	m	0	1/2	6.9E+02	N		Max. detect < PRG
Reach C	Acetone	1/2	mg/kg	0.155	0.155	0.12	0.12	0.138	D	0.248	0.12	m	0	1/2	1.4E+02	N		Max. detect < PRG
Reach C	Toluene	2/2	mg/kg			0.022	0.97	0.496	D	3.49	0.97	m	0.002	2/2	5.2E+02	N		Max. detect < PRG
Reach C	Cesium-137	2/6	pCi/g	0	0.05	0.03	0.03	0.02	D	0.0365	0.03	m	0	2/6		Y	Quant.	
Reach C	Potassium-40	4/6	pCi/g	0	0	7.89	14.61	8.24	D	13.8	13.8	u	15.6	0/6		N		Below Background
Reach C	Radium-226	85/145	pCi/g	0	1.7	0.5	4.6	1.1	Z	1.21	1.21	u	4.73	0/145		N		Below Background
Reach C	Radium-228	3/5	pCi/g	-0.01	-0.01	0.79	0.84	0.484	D	0.914	0.84	m	1.32	0/5		N		Below Background
Reach C	Thorium-228	6/6	pCi/g			0.87	1.62	1.09	L	1.38	1.38	u	1.32	1/6		Y	Quant.	
Reach C	Thorium-230	51/146	pCi/g	0	1.4	0.7	27.7	1.12	D	1.51	1.51	u	2.2	15/146		Y	Quant.	
Reach C	Thorium-232	81/146	pCi/g	0	2.1	0.6	3.6	1.28	Z	1.4	1.4	u	1.19	64/146		Y	Quant.	
Reach C	Uranium-238	7/146	pCi/g	0	7	1.2	8.4	0.368	D	0.556	0.556	u	4.3	3/146		N		<5% detected

UCL_{95} = 95% upper confidence limit on the mean concentration
PRG = Preliminary Remediation Goal
PCOC = Potential Contaminant of Concern

Attachment 10. Determination of Sediment Potential Chemicals of Concern by Aggregate (Page 5 of 5)
(only detected analytes are shown)

Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist.[a]	UCL_{95}	Expos. Conc.[b]	Back-ground Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG[c]	PCOC	Type PCOC[d]	Justification[e]

[a] Distribution flags:
D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of UCL_{95}.
L = Lognormal; H-statistic used in calculations of UCL_{95}.
N = Normal; t-statistic used in calculations of UCL_{95}.
X = Neither normal nor lognormal; t-statistic used in calculations of UCL_{95}.
Z = Has concentrations that are negative and/or zero; t-statistic used in calculations of UCL_{95}.

[b] Basis for determining the exposure concentration:
m = maximum detected concentration.
u = 95% upper confidence limit on the mean concentration.

[c] EPA Region IX residential soil PRG, based on a risk level of 10^{-6} or a hazard level of 0.1 (note that Region IX noncarcinogenic PRGs are provided for a hazard level of 1.0; these values have been adjusted to a hazard level of 0.1 for this screening).

[d] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively;
Qual. = Qualitative
Quant. = Quantitative.

[e] Justification for eliminating the analyte from the PCOC list.

Attachment 11. Toxicity and Chemical-specific Parameters used to Quantify Risks and Hazards (page 1 of 2)

	Reference Doses (mg/kg-day)						Cancer Slope Factors[b,c]				Chemical-specific Parameters							
PCOC[a]	Chronic Oral RfD	Subchr. Oral RfD	Chronic Dermal RfD	Subchr. Dermal RfD	Chronic Inhalation RfD	Subchr. Inhalation RfD	Oral Slope Factor[b]	Dermal Slope Factor[b]	Inhalation Slope Factor[b]	External Slope Factor[c]	ABS_{gi}[d]	ABS[e]	VF[f] (m^3/kg)	PEF[g] (m^3/kg)	H[h] (atm-m^3/mole)	PC[i]	EPA Class.	ICRP Lung Class[j]
Chemicals																		
1,2-Dichloroethene	9.00E-03	9.00E-03	7.20E-03	7.20E-03							0.8	0.01		1.32E+09		0.0011	NA	
Acetone	1.00E-01	1.00E+00	8.30E-02	8.30E-01							0.83	0.01	1.64E+04	1.32E+09	3.88E-05	0.0006	D	
Antimony	4.00E-04	4.00E-04	8.00E-06	8.00E-06							0.02	0.001		1.32E+09		0.001	NA	
Arsenic	3.00E-04	3.00E-04	1.23E-04	1.23E-04			1.50E+00	3.66E+00	1.51E+01		0.41	0.001		1.32E+09		0.001	A	
Barium	7.00E-02	7.00E-02	4.90E-03	4.90E-03	1.43E-04	1.43E-03					0.07	0.001		1.32E+09		0.001	D	
Benz(a)anthracene							7.30E-01	2.35E+00	3.10E-01		0.31	0.01		1.32E+09	3.34E-06	0.81	B2	
Benzo(a)pyrene							7.30E+00	2.35E+01	3.10E+00		0.31	0.01		1.32E+09	1.13E-06	1.2	B2	
Benzo(b)fluoranthene							7.30E-01	2.35E+00	3.10E-01		0.31	0.01		1.32E+09	1.11E-04	1.2	B2	
Benzo(k)fluoranthene							7.30E-02	2.35E-01	3.10E-02		0.31	0.01		1.32E+09	8.29E-07	0.6	B2	
Bis(2-ethylhexyl)phthalate	2.00E-02		3.80E-03				1.40E-02	7.37E-02			0.19	0.01		1.32E+09	1.02E-07	0.023	B2	
Boron	9.00E-02		8.10E-02		5.71E-03	5.71E-03					0.9	0.001		1.32E+09		0.001	NA	
Cadmium (Diet)[k]	1.00E-03		1.00E-05						6.30E+00		0.01	0.01		1.32E+09		0.001	B1	
Cadmium (Water)[k]	5.00E-04		5.00E-06						6.30E+00		0.01	0.01		1.32E+09		0.001	B1	
Chloroform	1.00E-02	1.00E-02	2.00E-03	2.00E-03			6.10E-03	3.05E-02	8.10E-02		0.2	0.01	3.47E+03	1.32E+09	3.66E-03	0.0089	B2	
Chloromethane						2.60E+00	1.30E-02	1.63E-02	6.30E-03		0.8	0.01	2.06E+03	1.32E+09	8.82E-03	0.0042	C	
Chromium VI (chromic acid mists)[l]	3.00E-03	2.00E-02	6.00E-05	4.00E-04	2.29E-06				4.10E+01		0.02	0.001		1.32E+09		0.001	A	
Chromium VI (particulates)[l]	3.00E-03	2.00E-02	6.00E-05	4.00E-04	2.86E-05				4.10E+01		0.02	0.001		1.32E+09		0.001	A	
Dibenz(a,h)anthracene							7.30E+00	2.35E+01	3.10E+00		0.31	0.01		1.32E+09	1.47E-08	2.7	B2	
Dieldrin	5.00E-05	5.00E-05	2.50E-05	2.50E-05			1.60E+01	3.20E+01	1.60E+01		0.5	0.01		1.32E+09	1.51E-05	0.016	B2	
Dimethylbenzene	2.00E+00	3.57E-01	1.84E+00	3.28E-01							0.92	0.01	8.92E+03	1.32E+09	5.25E-03	0.095	D	
Fluoride[m]	6.00E-02	6.00E-02	5.82E-02	5.82E-02							0.97	0.001		1.32E+09		0.001	NA	
Indeno(1,2,3-cd)pyrene							7.30E-01	2.35E+00	3.10E-01		0.31	0.01		1.32E+09	1.60E-06	1.9	B2	
MCPA	5.00E-04	5.00E-04	2.50E-04	2.50E-04							0.5	0.01		1.32E+09		0.0049	NA	
MCPP	1.00E-03	1.00E-02	5.00E-04	5.00E-03							0.5	0.01		1.32E+09		0.0066	NA	
Manganese	4.60E-02		1.84E-03		1.43E-05						0.04	0.001		1.32E+09		0.001	D	
Methylene chloride	6.00E-02	6.00E-02	5.70E-02	5.70E-02	8.57E-01	8.57E-01	7.50E-03	7.89E-03	1.65E-03		0.95	0.01	3.25E+03	1.32E+09	2.19E-03	0.0045	B2	
Molybdenum	5.00E-03	5.00E-03	1.90E-03	1.90E-03							0.38	0.001		1.32E+09		0.001	NA	
Nickel	2.00E-02	2.00E-02	5.40E-03	5.40E-03							0.27	0.001		1.32E+09		0.001	NA	
Nitrate	1.60E+00		8.00E-01								0.5	0.001		1.32E+09		0.001	NA	
Nitrite	1.00E-01	1.00E-01	5.00E-02	5.00E-02							0.5	0.001		1.32E+09		0.001	NA	
Selenium	5.00E-03	5.00E-03	2.20E-03	2.20E-03							0.44	0.001		1.32E+09		0.001	D	
Strontium	6.00E-01	6.00E-01	1.20E-01	1.20E-01							0.2	0.001		1.32E+09		0.001	NA	
Tetrachloroethene	1.00E-02	1.00E-01	1.00E-02	1.00E-01	1.71E-01		5.20E-02	5.20E-02	2.00E-03		1	0.01	3.33E+03	1.32E+09	1.84E-02	0.37	NA	
Thallium[n]	8.00E-05	8.00E-04	1.60E-05	1.60E-04							0.2	0.001		1.32E+09		0.001	D	
Trichloroethene	6.00E-03		9.00E-04				1.10E-02	7.33E-02	6.00E-03		0.15	0.01	4.25E+03	1.32E+09	1.03E-02	0.016	NA	
Uranium[o]	3.00E-03		2.55E-03								0.85	0.001		1.32E+09		0.001	NA	
Vanadium	7.00E-03	7.00E-03	7.00E-05	7.00E-05							0.01	0.001		1.32E+09		0.001	NA	

Attachment 11. Toxicity and Chemical-specific Parameters used to Quantify Risks and Hazards (page 2 of 2)

	Reference Doses (mg/kg-day)						Cancer Slope Factors[b,c]				Chemical-specific Parameters							
PCOC[a]	Chronic Oral RfD	Subchr. Oral RfD	Chronic Dermal RfD	Subchr. Dermal RfD	Chronic Inhalation RfD	Subchr. Inhalation RfD	Oral Slope Factor[b]	Dermal Slope Factor[b]	Inhalation Slope Factor[b]	External Slope Factor[c]	ABS_{gi}[d]	ABS[e]	VF[f] (m^3/kg)	PEF[g] (m^3/kg)	H[h] (atm-m^3/mole)	PC[i]	EPA Class.	ICRP Lung Class[j]
Zinc	3.00E-01	3.00E-01	6.00E-02	6.00E-02							0.2	0.001		1.32E+09		0.001	D	
Radionuclides																		
Actinium-227+D[p]							6.26E-10		7.87E-08	9.30E-07	0.001			1.32E+09			A	Y
Lead-210+D[p]							1.01E-09		3.86E-09	1.45E-10	0.2			1.32E+09			A	D
Protactinium-231							1.49E-10		2.42E-08	2.71E-08	0.001			1.32E+09			A	Y
Radium-226+D[p]							2.96E-10		2.75E-09	6.74E-06	0.2			1.32E+09			A	W
Radium-228+D[p]							2.48E-10		9.94E-10	3.28E-06	0.2			1.32E+09			A	W
Thorium-228+D[p]							2.31E-10		9.68E-08	6.20E-06	0.0002			1.32E+09			A	Y
Thorium-230							3.75E-11		1.72E-08	4.40E-11	0.0002			1.32E+09			A	Y
Thorium-232							3.28E-11		1.93E-08	1.97E-11	0.0002			1.32E+09			A	Y
Uranium-234							4.44E-11		1.40E-08	2.14E-11	0.05			1.32E+09			A	Y
Uranium-235+D[p]							4.70E-11		1.30E-08	2.65E-07	0.05			1.32E+09			A	Y
Uranium-238+D[p]							6.20E-11		1.24E-08	6.57E-08	0.05			1.32E+09			A	Y

[a] PCOC = Potential Contaminant of Concern.

[b] Units for oral and inhalation cancer slope factors are $(mg/kg\text{-}day)^{-1}$ for chemicals and (risk/pCi) for radionuclides. Units for dermal cancer slope factors (chemicals only) are $(mg/kg\text{-}day)^{-1}$.

[c] Units for external exposure cancer slope factor (radionuclides only) are (risk/year per pCi/g soil).

[d] Chemical-specific gut absorption factor used to adjust oral toxicity in order to obtain dermal toxicity.

[e] Chemical-specific absorption factor used to estimate dermally absorbed intake from exposure to soils and dry sediments.

[f] Volitilization factor used to estimate intake from inhalation of dust.

[g] Particulate emission factor used to estimate intake from inhalation of dust.

[h] Henry's law constant used to estimate intake from inhalation of VOCs in ground water during household water use.

[i] Permeability constant used to estimate intake from dermal contact with ground water and surface water.

[j] ICRP Lung Classification categories: (Y) years; (W) weeks; (D) days.

[k] Cadmium was evaluated using the toxicity of Cadmium (Diet) for soil and sediment; cadmium was evaluated using the toxicity of Cadmium (Water) for ground water and surface water.

[l] Chromium was evaluated using the toxicity of Chromium VI (particulates) for soil and sediment; chromium was evaluated using the toxicity of Chromium VI (chromic acid mists) for ground water and surface water.

[m] Fluoride was evaluated using the toxicity of Fluorine (Soluble Fluoride).

[n] Thallium was evaluated using the toxicity of Thallium Sulfate.

[o] Uranium (as a non-radionuclide) was evaluated using the toxicity of Uranium (Soluble Salts).

[p] +D slope factors include contributions from short-lived daughter products.

Attachment 12. Radiological Doses and Risks for each Property (page 1 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	09K120040/VP-3(C)	Ac-227	5.60E-02	7.4E-02	0.0E+00	2.0E-07	0.0E+00	1.9E-02	0.0E+00	5.7E-08	0.0E+00	6.5E-03	0.0E+00	5.0E-09	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Pa-231	1.04E-01	4.6E-02	0.0E+00	2.2E-07	0.0E+00	7.8E-03	0.0E+00	5.3E-08	0.0E+00	5.3E-03	0.0E+00	1.7E-09	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Pb-210	5.32E-01	1.3E-01	0.0E+00	2.9E-07	0.0E+00	1.7E-02	0.0E+00	3.5E-08	0.0E+00	1.6E-02	0.0E+00	1.3E-08	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Ra-226	1.13E+00	4.1E+00	0.0E+00	5.8E-05	0.0E+00	1.3E+00	0.0E+00	1.6E-05	0.0E+00	2.0E-01	0.0E+00	7.5E-07	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Th-230	3.63E+01	9.9E-01	4.5E+00	1.5E-05	6.3E-05	1.9E-01	1.3E+00	3.2E-06	1.6E-05	1.2E-01	3.1E-01	8.7E-08	7.2E-07
Sub. (>0.5 ft)	09K120040/VP-3(C)	Th-232	3.10E-01	4.2E-02	1.4E+00	1.8E-05	2.4E-05	8.1E-03	4.4E-01	4.3E-06	6.4E-06	5.2E-03	7.4E-02	6.4E-08	2.6E-07
Sub. (>0.5 ft)	09K120040/VP-3(C)	U-238	1.52E+00	8.6E-02	0.0E+00	7.9E-07	0.0E+00	2.5E-02	0.0E+00	2.1E-07	0.0E+00	5.6E-03	0.0E+00	1.3E-08	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	TOTAL		5.5E+00	5.9E+00	9.3E-05	8.7E-05	1.6E+00	1.7E+00	2.4E-05	2.3E-05	3.7E-01	3.8E-01	9.4E-07	9.8E-07
Surf. (<0.5 ft)	09K120040/VP-3(C)	Pb-210	1.86E-01	4.4E-02	0.0E+00	1.0E-07	0.0E+00	5.8E-03	0.0E+00	1.2E-08	0.0E+00	5.7E-03	0.0E+00	4.5E-09	0.0E+00
Surf. (<0.5 ft)	09K120040/VP-3(C)	Ra-226	6.50E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.5E-01	0.0E+00	9.2E-06	0.0E+00	1.2E-01	0.0E+00	4.3E-07	0.0E+00
Surf. (<0.5 ft)	09K120040/VP-3(C)	Th-230	1.16E+01	3.2E-01	1.4E+00	4.8E-06	2.0E-05	6.2E-02	4.1E-01	1.0E-06	5.2E-06	3.9E-02	9.8E-02	2.8E-08	2.3E-07
Surf. (<0.5 ft)	09K120040/VP-3(C)	Th-232	1.01E+00	1.4E-01	4.6E+00	5.8E-05	7.9E-05	2.6E-02	1.4E+00	1.4E-05	2.1E-05	1.7E-02	2.4E-01	2.1E-07	8.5E-07
Surf. (<0.5 ft)	09K120040/VP-3(C)	U-238	8.69E+00	4.9E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.2E-02	0.0E+00	7.2E-08	0.0E+00
Surf. (<0.5 ft)	09K120040/VP-3(C)	TOTAL		3.4E+00	6.1E+00	1.0E-04	9.9E-05	9.8E-01	1.9E+00	2.5E-05	2.6E-05	2.1E-01	3.4E-01	7.5E-07	1.1E-06
All Depths	09K120040/VP-3(C)	Pb-210	1.99E-01	4.7E-02	0.0E+00	1.1E-07	0.0E+00	6.2E-03	0.0E+00	1.3E-08	0.0E+00	6.1E-03	0.0E+00	4.8E-09	0.0E+00
All Depths	09K120040/VP-3(C)	Ra-226	6.90E-01	2.5E+00	0.0E+00	3.6E-05	0.0E+00	7.9E-01	0.0E+00	9.7E-06	0.0E+00	1.2E-01	0.0E+00	4.6E-07	0.0E+00
All Depths	09K120040/VP-3(C)	Th-230	1.25E+01	3.4E-01	1.6E+00	5.2E-06	2.2E-05	6.7E-02	4.4E-01	1.1E-06	5.6E-06	4.2E-02	1.1E-01	3.0E-08	2.5E-07
All Depths	09K120040/VP-3(C)	Th-232	8.50E-01	1.1E-01	3.9E+00	4.9E-05	6.6E-05	2.2E-02	1.2E+00	1.2E-05	1.7E-05	1.4E-02	2.0E-01	1.7E-07	7.2E-07
All Depths	09K120040/VP-3(C)	U-238	1.52E+00	8.6E-02	0.0E+00	7.9E-07	0.0E+00	2.5E-02	0.0E+00	2.1E-07	0.0E+00	5.6E-03	0.0E+00	1.3E-08	0.0E+00
All Depths	09K120040/VP-3(C)	TOTAL		3.1E+00	5.5E+00	9.0E-05	8.8E-05	9.1E-01	1.7E+00	2.3E-05	2.3E-05	1.9E-01	3.1E-01	6.8E-07	9.7E-07
Sub. (>0.5 ft)	09K120116/VP-5(C)	Ac-227	2.17E-01	2.9E-01	0.0E+00	7.6E-07	0.0E+00	7.2E-02	0.0E+00	2.2E-07	0.0E+00	2.5E-02	0.0E+00	1.9E-08	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Pa-231	2.88E-01	1.3E-01	0.0E+00	6.1E-07	0.0E+00	2.2E-02	0.0E+00	1.5E-07	0.0E+00	1.5E-02	0.0E+00	4.8E-09	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Pb-210	8.54E-01	2.0E-01	0.0E+00	4.7E-07	0.0E+00	2.7E-02	0.0E+00	5.6E-08	0.0E+00	2.6E-02	0.0E+00	2.1E-08	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Ra-226	8.90E-01	3.2E+00	0.0E+00	4.6E-05	0.0E+00	1.0E+00	0.0E+00	1.3E-05	0.0E+00	1.6E-01	0.0E+00	5.9E-07	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Th-230	5.93E+01	1.6E+00	7.3E+00	2.5E-05	1.0E-04	3.1E-01	2.1E+00	5.3E-06	2.6E-05	2.0E-01	5.0E-01	1.4E-07	1.2E-06
Sub. (>0.5 ft)	09K120116/VP-5(C)	Th-232	8.90E-01	1.2E-01	4.1E+00	5.1E-05	6.9E-05	2.3E-02	1.3E+00	1.2E-05	1.8E-05	1.5E-02	2.1E-01	1.8E-07	7.5E-07
Sub. (>0.5 ft)	09K120116/VP-5(C)	U-238	4.45E+00	2.5E-01	0.0E+00	2.3E-06	0.0E+00	7.2E-02	0.0E+00	6.1E-07	0.0E+00	1.6E-02	0.0E+00	3.7E-08	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	TOTAL		5.8E+00	1.1E+01	1.3E-04	1.7E-04	1.6E+00	3.4E+00	3.1E-05	4.5E-05	4.6E-01	7.2E-01	1.0E-06	1.9E-06
Surf. (<0.5 ft)	09K120116/VP-5(C)	Pb-210	1.96E-01	4.6E-02	0.0E+00	1.1E-07	0.0E+00	6.1E-03	0.0E+00	1.3E-08	0.0E+00	6.0E-03	0.0E+00	4.7E-09	0.0E+00
Surf. (<0.5 ft)	09K120116/VP-5(C)	Ra-226	5.10E-01	1.9E+00	0.0E+00	2.6E-05	0.0E+00	5.9E-01	0.0E+00	7.2E-06	0.0E+00	9.2E-02	0.0E+00	3.4E-07	0.0E+00
Surf. (<0.5 ft)	09K120116/VP-5(C)	Th-230	1.23E+01	3.4E-01	1.5E+00	5.1E-06	2.1E-05	6.6E-02	4.3E-01	1.1E-06	5.5E-06	4.1E-02	1.0E-01	2.9E-08	2.4E-07
Surf. (<0.5 ft)	09K120116/VP-5(C)	Th-232	1.89E+00	2.5E-01	8.7E+00	1.1E-04	1.5E-04	4.9E-02	2.7E+00	2.6E-05	3.9E-05	3.1E-02	4.5E-01	3.9E-07	1.6E-06
Surf. (<0.5 ft)	09K120116/VP-5(C)	U-238	2.52E+00	1.4E-01	0.0E+00	1.3E-06	0.0E+00	4.1E-02	0.0E+00	3.5E-07	0.0E+00	9.2E-03	0.0E+00	2.1E-08	0.0E+00
Surf. (<0.5 ft)	09K120116/VP-5(C)	TOTAL		2.6E+00	1.0E+01	1.4E-04	1.7E-04	7.5E-01	3.1E+00	3.5E-05	4.4E-05	1.8E-01	5.6E-01	7.8E-07	1.8E-06
All Depths	09K120116/VP-5(C)	Pa-231	1.68E-02	7.4E-03	0.0E+00	3.6E-08	0.0E+00	1.3E-03	0.0E+00	8.6E-09	0.0E+00	8.6E-04	0.0E+00	2.8E-10	0.0E+00
All Depths	09K120116/VP-5(C)	Pb-210	3.79E-01	9.0E-02	0.0E+00	2.1E-07	0.0E+00	1.2E-02	0.0E+00	2.5E-08	0.0E+00	1.2E-02	0.0E+00	9.1E-09	0.0E+00
All Depths	09K120116/VP-5(C)	Ra-226	4.80E-01	1.7E+00	0.0E+00	2.5E-05	0.0E+00	5.5E-01	0.0E+00	6.8E-06	0.0E+00	8.7E-02	0.0E+00	3.2E-07	0.0E+00
All Depths	09K120116/VP-5(C)	Th-230	2.54E+01	6.9E-01	3.1E+00	1.1E-05	4.4E-05	1.4E-01	8.9E-01	2.3E-06	1.1E-05	8.5E-02	2.2E-01	6.1E-08	5.0E-07
All Depths	09K120116/VP-5(C)	Th-232	6.10E-01	8.2E-02	2.8E+00	3.5E-05	4.8E-05	1.6E-02	8.7E-01	8.5E-06	1.3E-05	1.0E-02	1.5E-01	1.3E-07	5.2E-07
All Depths	09K120116/VP-5(C)	U-238	2.52E+00	1.4E-01	0.0E+00	1.3E-06	0.0E+00	4.1E-02	0.0E+00	3.5E-07	0.0E+00	9.2E-03	0.0E+00	2.1E-08	0.0E+00
All Depths	09K120116/VP-5(C)	TOTAL		2.8E+00	6.0E+00	7.2E-05	9.1E-05	7.6E-01	1.8E+00	1.8E-05	2.4E-05	2.0E-01	3.6E-01	5.4E-07	1.0E-06
Sub. (>0.5 ft)	09K120127/VP-4(C)	Pb-210	5.36E-02	1.3E-02	0.0E+00	3.0E-08	0.0E+00	1.7E-03	0.0E+00	3.5E-09	0.0E+00	1.6E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	09K120127/VP-4(C)	Ra-226	1.50E-01	5.5E-01	0.0E+00	7.7E-06	0.0E+00	1.7E-01	0.0E+00	2.1E-06	0.0E+00	2.7E-02	0.0E+00	1.0E-07	0.0E+00
Sub. (>0.5 ft)	09K120127/VP-4(C)	Th-230	2.17E+00	5.9E-02	2.7E-01	9.0E-07	3.7E-06	1.2E-02	7.6E-02	1.9E-07	9.7E-07	7.3E-03	1.8E-02	5.2E-09	4.3E-08
Sub. (>0.5 ft)	09K120127/VP-4(C)	U-238	4.34E+00	2.4E-01	0.0E+00	2.3E-06	0.0E+00	7.1E-02	0.0E+00	6.0E-07	0.0E+00	1.6E-02	0.0E+00	3.6E-08	0.0E+00
Sub. (>0.5 ft)	09K120127/VP-4(C)	TOTAL		8.6E-01	2.7E-01	1.1E-05	3.7E-06	2.6E-01	7.6E-02	2.9E-06	9.7E-07	5.2E-02	1.8E-02	1.4E-07	4.3E-08

Attachment 12. Radiological Doses and Risks for each Property (page 2 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	09K120127/VP-4(C)	Pb-210	7.49E-02	1.8E-02	0.0E+00	4.1E-08	0.0E+00	2.3E-03	0.0E+00	4.9E-09	0.0E+00	2.3E-03	0.0E+00	1.8E-09	0.0E+00
Surf. (<0.5 ft)	09K120127/VP-4(C)	Ra-226	5.70E-01	2.1E+00	0.0E+00	2.9E-05	0.0E+00	6.5E-01	0.0E+00	8.0E-06	0.0E+00	1.0E-01	0.0E+00	3.8E-07	0.0E+00
Surf. (<0.5 ft)	09K120127/VP-4(C)	Th-230	3.69E+00	1.0E-01	4.6E-01	1.5E-06	6.4E-06	2.0E-02	1.3E-01	3.3E-07	1.6E-06	1.2E-02	3.1E-02	8.8E-09	7.3E-08
Surf. (<0.5 ft)	09K120127/VP-4(C)	Th-232	1.43E+00	1.9E-01	6.6E+00	8.2E-05	1.1E-04	3.7E-02	2.0E+00	2.0E-05	2.9E-05	2.4E-02	3.4E-01	2.9E-07	1.2E-06
Surf. (<0.5 ft)	09K120127/VP-4(C)	U-238	6.56E+00	3.7E-01	0.0E+00	3.4E-06	0.0E+00	1.1E-01	0.0E+00	9.0E-07	0.0E+00	2.4E-02	0.0E+00	5.4E-08	0.0E+00
Surf. (<0.5 ft)	09K120127/VP-4(C)	TOTAL		2.8E+00	7.0E+00	1.2E-04	1.2E-04	8.2E-01	2.2E+00	2.9E-05	3.1E-05	1.7E-01	3.7E-01	7.4E-07	1.3E-06
All Depths	09K120127/VP-4(C)	Pb-210	6.23E-02	1.5E-02	0.0E+00	3.4E-08	0.0E+00	1.9E-03	0.0E+00	4.1E-09	0.0E+00	1.9E-03	0.0E+00	1.5E-09	0.0E+00
All Depths	09K120127/VP-4(C)	Ra-226	4.40E-01	1.6E+00	0.0E+00	2.3E-05	0.0E+00	5.1E-01	0.0E+00	6.2E-06	0.0E+00	8.0E-02	0.0E+00	2.9E-07	0.0E+00
All Depths	09K120127/VP-4(C)	Th-230	2.79E+00	7.6E-02	3.5E-01	1.2E-06	4.8E-06	1.5E-02	9.8E-02	2.5E-07	1.2E-06	9.4E-03	2.4E-02	6.6E-09	5.5E-08
All Depths	09K120127/VP-4(C)	Th-232	1.16E+00	1.6E-01	5.3E+00	6.6E-05	9.0E-05	3.0E-02	1.7E+00	1.6E-05	2.4E-05	1.9E-02	2.8E-01	2.4E-07	9.8E-07
All Depths	09K120127/VP-4(C)	U-238	5.67E+00	3.2E-01	0.0E+00	3.0E-06	0.0E+00	9.2E-02	0.0E+00	7.8E-07	0.0E+00	2.1E-02	0.0E+00	4.7E-08	0.0E+00
All Depths	09K120127/VP-4(C)	TOTAL		2.2E+00	5.7E+00	9.3E-05	9.5E-05	6.4E-01	1.8E+00	2.3E-05	2.5E-05	1.3E-01	3.0E-01	5.9E-07	1.0E-06
Sub. (>0.5 ft)	09K130038/VP-62	Pb-210	4.76E-02	1.1E-02	0.0E+00	2.6E-08	0.0E+00	1.5E-03	0.0E+00	3.1E-09	0.0E+00	1.5E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	09K130038/VP-62	Th-230	1.74E+00	4.7E-02	2.2E-01	7.2E-07	3.0E-06	9.2E-03	6.1E-02	1.6E-07	7.8E-07	5.8E-03	1.5E-02	4.1E-09	3.4E-08
Sub. (>0.5 ft)	09K130038/VP-62	TOTAL		5.9E-02	2.2E-01	7.5E-07	3.0E-06	1.1E-02	6.1E-02	1.6E-07	7.8E-07	7.3E-03	1.5E-02	5.3E-09	3.4E-08
All Depths	09K130038/VP-62	Pb-210	4.76E-02	1.1E-02	0.0E+00	2.6E-08	0.0E+00	1.5E-03	0.0E+00	3.1E-09	0.0E+00	1.5E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	09K130038/VP-62	Th-230	1.74E+00	4.7E-02	2.2E-01	7.2E-07	3.0E-06	9.2E-03	6.1E-02	1.6E-07	7.8E-07	5.8E-03	1.5E-02	4.1E-09	3.4E-08
All Depths	09K130038/VP-62	TOTAL		5.9E-02	2.2E-01	7.5E-07	3.0E-06	1.1E-02	6.1E-02	1.6E-07	7.8E-07	7.3E-03	1.5E-02	5.3E-09	3.4E-08
Sub. (>0.5 ft)	09K130104/VP-60	Pb-210	2.09E-02	4.9E-03	0.0E+00	1.1E-08	0.0E+00	6.5E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.0E-10	0.0E+00
Sub. (>0.5 ft)	09K130104/VP-60	TOTAL		4.9E-03	0.0E+00	1.1E-08	0.0E+00	6.5E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.0E-10	0.0E+00
All Depths	09K130104/VP-60	Pb-210	2.09E-02	4.9E-03	0.0E+00	1.1E-08	0.0E+00	6.5E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.0E-10	0.0E+00
All Depths	09K130104/VP-60	TOTAL		4.9E-03	0.0E+00	1.1E-08	0.0E+00	6.5E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.0E-10	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Ac-227	3.21E-01	4.2E-01	0.0E+00	1.1E-06	0.0E+00	1.1E-01	0.0E+00	3.3E-07	0.0E+00	3.7E-02	0.0E+00	2.9E-08	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Pa-231	4.06E-01	1.8E-01	0.0E+00	8.6E-07	0.0E+00	3.1E-02	0.0E+00	2.1E-07	0.0E+00	2.1E-02	0.0E+00	6.8E-09	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Pb-210	1.06E+00	2.5E-01	0.0E+00	5.8E-07	0.0E+00	3.3E-02	0.0E+00	6.9E-08	0.0E+00	3.2E-02	0.0E+00	2.6E-08	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Ra-226	2.75E+00	1.0E+01	0.0E+00	1.4E-04	0.0E+00	3.2E+00	0.0E+00	3.9E-05	0.0E+00	5.0E-01	0.0E+00	1.8E-06	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Th-230	7.41E+01	2.0E+00	9.2E+00	3.1E-05	1.3E-04	3.9E-01	2.6E+00	6.6E-06	3.3E-05	2.5E-01	6.3E-01	1.8E-07	1.5E-06
Sub. (>0.5 ft)	09K140015/VP-58	Th-232	2.12E+00	2.8E-01	9.8E+00	1.2E-04	1.7E-04	5.5E-02	3.0E+00	3.0E-05	4.4E-05	3.5E-02	5.1E-01	4.4E-07	1.8E-06
Sub. (>0.5 ft)	09K140015/VP-58	U-238	1.44E+01	8.1E-01	0.0E+00	7.5E-06	0.0E+00	2.3E-01	0.0E+00	2.0E-06	0.0E+00	5.3E-02	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	TOTAL		1.4E+01	1.9E+01	3.0E-04	2.9E-04	4.0E+00	5.6E+00	7.8E-05	7.7E-05	9.2E-01	1.1E+00	2.6E-06	3.3E-06
Surf. (<0.5 ft)	09K140015/VP-58	Pb-210	5.42E-02	1.3E-02	0.0E+00	3.0E-08	0.0E+00	1.7E-03	0.0E+00	3.5E-09	0.0E+00	1.7E-03	0.0E+00	1.3E-09	0.0E+00
Surf. (<0.5 ft)	09K140015/VP-58	Ra-226	1.13E+00	4.1E+00	0.0E+00	5.8E-05	0.0E+00	1.3E+00	0.0E+00	1.6E-05	0.0E+00	2.0E-01	0.0E+00	7.5E-07	0.0E+00
Surf. (<0.5 ft)	09K140015/VP-58	Th-230	2.21E+00	6.0E-02	2.7E-01	9.1E-07	3.8E-06	1.2E-02	7.7E-02	2.0E-07	9.8E-07	7.4E-03	1.9E-02	5.3E-09	4.4E-08
Surf. (<0.5 ft)	09K140015/VP-58	Th-232	1.22E+00	1.6E-01	5.6E+00	7.0E-05	9.5E-05	3.2E-02	1.7E+00	1.7E-05	2.5E-05	2.0E-02	2.9E-01	2.5E-07	1.0E-06
Surf. (<0.5 ft)	09K140015/VP-58	U-238	9.92E+00	5.6E-01	0.0E+00	5.2E-06	0.0E+00	1.6E-01	0.0E+00	1.4E-06	0.0E+00	3.6E-02	0.0E+00	8.2E-08	0.0E+00
Surf. (<0.5 ft)	09K140015/VP-58	TOTAL		4.9E+00	5.9E+00	1.3E-04	9.9E-05	1.5E+00	1.8E+00	3.4E-05	2.6E-05	2.7E-01	3.1E-01	1.1E-06	1.1E-06
All Depths	09K140015/VP-58	Ac-227	6.30E-02	8.3E-02	0.0E+00	2.2E-07	0.0E+00	2.1E-02	0.0E+00	6.4E-08	0.0E+00	7.3E-03	0.0E+00	5.6E-09	0.0E+00
All Depths	09K140015/VP-58	Pa-231	1.12E-01	4.9E-02	0.0E+00	2.4E-07	0.0E+00	8.5E-03	0.0E+00	5.7E-08	0.0E+00	5.8E-03	0.0E+00	1.9E-09	0.0E+00
All Depths	09K140015/VP-58	Pb-210	5.46E-01	1.3E-01	0.0E+00	3.0E-07	0.0E+00	1.7E-02	0.0E+00	3.6E-08	0.0E+00	1.7E-02	0.0E+00	1.3E-08	0.0E+00
All Depths	09K140015/VP-58	Ra-226	1.83E+00	6.7E+00	0.0E+00	9.5E-05	0.0E+00	2.1E+00	0.0E+00	2.6E-05	0.0E+00	3.3E-01	0.0E+00	1.2E-06	0.0E+00
All Depths	09K140015/VP-58	Th-230	3.73E+01	1.0E+00	4.6E+00	1.5E-05	6.4E-05	2.0E-01	1.3E+00	3.3E-06	1.7E-05	1.3E-01	3.2E-01	8.9E-08	7.4E-07
All Depths	09K140015/VP-58	Th-232	1.39E+00	1.9E-01	6.4E+00	8.0E-05	1.1E-04	3.6E-02	2.0E+00	1.9E-05	2.9E-05	2.3E-02	3.3E-01	2.9E-07	1.2E-06
All Depths	09K140015/VP-58	U-238	1.15E+01	6.5E-01	0.0E+00	6.0E-06	0.0E+00	1.9E-01	0.0E+00	1.6E-06	0.0E+00	4.2E-02	0.0E+00	9.5E-08	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 3 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	09K140015/VP-58	TOTAL		8.8E+00	1.1E+01	2.0E-04	1.7E-04	2.6E+00	3.3E+00	5.0E-05	4.5E-05	5.5E-01	6.5E-01	1.7E-06	1.9E-06
Sub. (>0.5 ft)	09K140026/VP-57	Pb-210	2.66E-01	6.3E-02	0.0E+00	1.5E-07	0.0E+00	8.3E-03	0.0E+00	1.7E-08	0.0E+00	8.1E-03	0.0E+00	6.4E-09	0.0E+00
Sub. (>0.5 ft)	09K140026/VP-57	Ra-226	1.05E+00	3.8E+00	0.0E+00	5.4E-05	0.0E+00	1.2E+00	0.0E+00	1.5E-05	0.0E+00	1.9E-01	0.0E+00	7.0E-07	0.0E+00
Sub. (>0.5 ft)	09K140026/VP-57	Th-230	1.73E+01	4.7E-01	2.1E+00	7.2E-06	3.0E-05	9.2E-02	6.1E-01	1.5E-06	7.7E-06	5.8E-02	1.5E-01	4.1E-08	3.4E-07
Sub. (>0.5 ft)	09K140026/VP-57	Th-232	1.90E-01	2.5E-02	8.7E-01	1.1E-05	1.5E-05	4.9E-03	2.7E-01	2.6E-06	3.9E-06	3.2E-03	4.6E-02	3.9E-08	1.6E-07
Sub. (>0.5 ft)	09K140026/VP-57	U-238	7.17E+00	4.0E-01	0.0E+00	3.7E-06	0.0E+00	1.2E-01	0.0E+00	9.9E-07	0.0E+00	2.6E-02	0.0E+00	5.9E-08	0.0E+00
Sub. (>0.5 ft)	09K140026/VP-57	TOTAL		4.8E+00	3.0E+00	7.6E-05	4.5E-05	1.4E+00	8.8E-01	2.0E-05	1.2E-05	2.9E-01	1.9E-01	8.5E-07	5.0E-07
Surf. (<0.5 ft)	09K140026/VP-57	Pb-210	2.38E-01	5.6E-02	0.0E+00	1.3E-07	0.0E+00	7.4E-03	0.0E+00	1.6E-08	0.0E+00	7.3E-03	0.0E+00	5.7E-09	0.0E+00
Surf. (<0.5 ft)	09K140026/VP-57	Ra-226	1.00E+00	3.6E+00	0.0E+00	5.2E-05	0.0E+00	1.1E+00	0.0E+00	1.4E-05	0.0E+00	1.8E-01	0.0E+00	6.7E-07	0.0E+00
Surf. (<0.5 ft)	09K140026/VP-57	Th-230	1.53E+01	4.2E-01	1.9E+00	6.3E-06	2.6E-05	8.1E-02	5.4E-01	1.4E-06	6.8E-06	5.1E-02	1.3E-01	3.7E-08	3.0E-07
Surf. (<0.5 ft)	09K140026/VP-57	Th-232	1.27E+00	1.7E-01	5.8E+00	7.3E-05	9.9E-05	3.3E-02	1.8E+00	1.8E-05	2.6E-05	2.1E-02	3.0E-01	2.6E-07	1.1E-06
Surf. (<0.5 ft)	09K140026/VP-57	U-238	1.16E+01	6.6E-01	0.0E+00	6.0E-06	0.0E+00	1.9E-01	0.0E+00	1.6E-06	0.0E+00	4.3E-02	0.0E+00	9.6E-08	0.0E+00
Surf. (<0.5 ft)	09K140026/VP-57	TOTAL		4.9E+00	7.7E+00	1.4E-04	1.3E-04	1.5E+00	2.4E+00	3.5E-05	3.3E-05	3.0E-01	4.3E-01	1.1E-06	1.4E-06
All Depths	09K140026/VP-57	Pb-210	2.66E-01	6.3E-02	0.0E+00	1.5E-07	0.0E+00	8.3E-03	0.0E+00	1.7E-08	0.0E+00	8.1E-03	0.0E+00	6.4E-09	0.0E+00
All Depths	09K140026/VP-57	Ra-226	8.50E-01	3.1E+00	0.0E+00	4.4E-05	0.0E+00	9.8E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.7E-07	0.0E+00
All Depths	09K140026/VP-57	Th-230	1.73E+01	4.7E-01	2.1E+00	7.2E-06	3.0E-05	9.2E-02	6.1E-01	1.5E-06	7.7E-06	5.8E-02	1.5E-01	4.1E-08	3.4E-07
All Depths	09K140026/VP-57	Th-232	1.19E+00	1.6E-01	5.5E+00	6.8E-05	9.3E-05	3.1E-02	1.7E+00	1.7E-05	2.4E-05	2.0E-02	2.9E-01	2.4E-07	1.0E-06
All Depths	09K140026/VP-57	U-238	9.32E+00	5.3E-01	0.0E+00	4.9E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.4E-02	0.0E+00	7.7E-08	0.0E+00
All Depths	09K140026/VP-57	TOTAL		4.3E+00	7.6E+00	1.2E-04	1.2E-04	1.3E+00	2.3E+00	3.1E-05	3.2E-05	2.7E-01	4.3E-01	9.4E-07	1.3E-06
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Ac-227	3.15E-02	4.2E-02	0.0E+00	1.1E-07	0.0E+00	1.0E-02	0.0E+00	3.2E-08	0.0E+00	3.6E-03	0.0E+00	2.8E-09	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Pa-231	7.60E-02	3.3E-02	0.0E+00	1.6E-07	0.0E+00	5.7E-03	0.0E+00	3.9E-08	0.0E+00	3.9E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Pb-210	4.83E-01	1.1E-01	0.0E+00	2.7E-07	0.0E+00	1.5E-02	0.0E+00	3.1E-08	0.0E+00	1.5E-02	0.0E+00	1.2E-08	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Ra-226	1.34E+00	4.9E+00	0.0E+00	6.9E-05	0.0E+00	1.5E+00	0.0E+00	1.9E-05	0.0E+00	2.4E-01	0.0E+00	8.9E-07	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Th-230	3.28E+01	8.9E-01	4.1E+00	1.4E-05	5.7E-05	1.7E-01	1.2E+00	2.9E-06	1.5E-05	1.1E-01	2.8E-01	7.8E-08	6.5E-07
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Th-232	2.70E-01	3.6E-02	1.2E+00	1.5E-05	2.1E-05	7.0E-03	3.9E-01	3.8E-06	5.5E-06	4.5E-03	6.5E-02	5.5E-08	2.3E-07
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	U-238	6.36E+00	3.6E-01	0.0E+00	3.3E-06	0.0E+00	1.0E-01	0.0E+00	8.7E-07	0.0E+00	2.3E-02	0.0E+00	5.2E-08	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	TOTAL		6.4E+00	5.3E+00	1.0E-04	7.8E-05	1.9E+00	1.5E+00	2.7E-05	2.0E-05	4.0E-01	3.4E-01	1.1E-06	8.8E-07
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Pb-210	8.15E-02	1.9E-02	0.0E+00	4.5E-08	0.0E+00	2.5E-03	0.0E+00	5.3E-09	0.0E+00	2.5E-03	0.0E+00	2.0E-09	0.0E+00
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Ra-226	1.08E+00	3.9E+00	0.0E+00	5.6E-05	0.0E+00	1.2E+00	0.0E+00	1.5E-05	0.0E+00	2.0E-01	0.0E+00	7.2E-07	0.0E+00
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Th-230	4.16E+00	1.1E-01	5.2E-01	1.7E-06	7.2E-06	2.2E-02	1.5E-01	3.7E-07	1.9E-06	1.4E-02	3.5E-02	9.9E-09	8.2E-08
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Th-232	1.79E+00	2.4E-01	8.2E+00	1.0E-04	1.4E-04	4.7E-02	2.6E+00	2.5E-05	3.7E-05	3.0E-02	4.3E-01	3.7E-07	1.5E-06
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	U-238	1.06E+01	6.0E-01	0.0E+00	5.5E-06	0.0E+00	1.7E-01	0.0E+00	1.5E-06	0.0E+00	3.9E-02	0.0E+00	8.7E-08	0.0E+00
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	TOTAL		4.9E+00	8.8E+00	1.7E-04	1.5E-04	1.5E+00	2.7E+00	4.2E-05	3.9E-05	2.8E-01	4.6E-01	1.2E-06	1.6E-06
All Depths	09K210206/VP-56,1(C)	Pb-210	1.65E-01	3.9E-02	0.0E+00	9.1E-08	0.0E+00	5.1E-03	0.0E+00	1.1E-08	0.0E+00	5.0E-03	0.0E+00	4.0E-09	0.0E+00
All Depths	09K210206/VP-56,1(C)	Ra-226	1.01E+00	3.7E+00	0.0E+00	5.2E-05	0.0E+00	1.2E+00	0.0E+00	1.4E-05	0.0E+00	1.8E-01	0.0E+00	6.7E-07	0.0E+00
All Depths	09K210206/VP-56,1(C)	Th-230	1.01E+01	2.8E-01	1.3E+00	4.2E-06	1.7E-05	5.4E-02	3.6E-01	9.1E-07	4.5E-06	3.4E-02	8.6E-02	2.4E-08	2.0E-07
All Depths	09K210206/VP-56,1(C)	Th-232	1.59E+00	2.1E-01	7.3E+00	9.1E-05	1.2E-04	4.1E-02	2.3E+00	2.2E-05	3.3E-05	2.6E-02	3.8E-01	3.3E-07	1.3E-06
All Depths	09K210206/VP-56,1(C)	U-238	9.42E+00	5.3E-01	0.0E+00	4.9E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.5E-02	0.0E+00	7.8E-08	0.0E+00
All Depths	09K210206/VP-56,1(C)	TOTAL		4.7E+00	8.6E+00	1.5E-04	1.4E-04	1.4E+00	2.6E+00	3.9E-05	3.7E-05	2.8E-01	4.7E-01	1.1E-06	1.5E-06
Sub. (>0.5 ft)	09K220029	Pb-210	1.54E-02	3.6E-03	0.0E+00	8.5E-09	0.0E+00	4.8E-04	0.0E+00	1.0E-09	0.0E+00	4.7E-04	0.0E+00	3.7E-10	0.0E+00
Sub. (>0.5 ft)	09K220029	TOTAL		3.6E-03	0.0E+00	8.5E-09	0.0E+00	4.8E-04	0.0E+00	1.0E-09	0.0E+00	4.7E-04	0.0E+00	3.7E-10	0.0E+00
All Depths	09K220029	Pb-210	1.54E-02	3.6E-03	0.0E+00	8.5E-09	0.0E+00	4.8E-04	0.0E+00	1.0E-09	0.0E+00	4.7E-04	0.0E+00	3.7E-10	0.0E+00
All Depths	09K220029	TOTAL		3.6E-03	0.0E+00	8.5E-09	0.0E+00	4.8E-04	0.0E+00	1.0E-09	0.0E+00	4.7E-04	0.0E+00	3.7E-10	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 4 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	09K220030/VP-44	Pb-210	2.23E-02	5.3E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.5E-09	0.0E+00	6.8E-04	0.0E+00	5.4E-10	0.0E+00
Sub. (>0.5 ft)	09K220030/VP-44	TOTAL		5.3E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.5E-09	0.0E+00	6.8E-04	0.0E+00	5.4E-10	0.0E+00
All Depths	09K220030/VP-44	Pb-210	2.23E-02	5.3E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.5E-09	0.0E+00	6.8E-04	0.0E+00	5.4E-10	0.0E+00
All Depths	09K220030/VP-44	TOTAL		5.3E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.5E-09	0.0E+00	6.8E-04	0.0E+00	5.4E-10	0.0E+00
Sub. (>0.5 ft)	09K220041/VP-42	Pb-210	3.54E-02	8.4E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.5E-10	0.0E+00
Sub. (>0.5 ft)	09K220041/VP-42	Th-230	8.70E-01	2.4E-02	1.1E-01	3.6E-07	1.5E-06	4.6E-03	3.0E-02	7.8E-08	3.9E-07	2.9E-03	7.4E-03	2.1E-09	1.7E-08
Sub. (>0.5 ft)	09K220041/VP-42	TOTAL		3.2E-02	1.1E-01	3.8E-07	1.5E-06	5.7E-03	3.0E-02	8.0E-08	3.9E-07	4.0E-03	7.4E-03	2.9E-09	1.7E-08
All Depths	09K220041/VP-42	Pb-210	3.54E-02	8.4E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.5E-10	0.0E+00
All Depths	09K220041/VP-42	Th-230	8.70E-01	2.4E-02	1.1E-01	3.6E-07	1.5E-06	4.6E-03	3.0E-02	7.8E-08	3.9E-07	2.9E-03	7.4E-03	2.1E-09	1.7E-08
All Depths	09K220041/VP-42	TOTAL		3.2E-02	1.1E-01	3.8E-07	1.5E-06	5.7E-03	3.0E-02	8.0E-08	3.9E-07	4.0E-03	7.4E-03	2.9E-09	1.7E-08
Sub. (>0.5 ft)	09K220074/VP-46	Pb-210	4.06E-02	9.6E-03	0.0E+00	2.2E-08	0.0E+00	1.3E-03	0.0E+00	2.6E-09	0.0E+00	1.2E-03	0.0E+00	9.8E-10	0.0E+00
Sub. (>0.5 ft)	09K220074/VP-46	Th-230	1.24E+00	3.4E-02	1.5E-01	5.1E-07	2.1E-06	6.6E-03	4.3E-02	1.1E-07	5.5E-07	4.2E-03	1.0E-02	3.0E-09	2.5E-08
Sub. (>0.5 ft)	09K220074/VP-46	TOTAL		4.3E-02	1.5E-01	5.3E-07	2.1E-06	7.8E-03	4.3E-02	1.1E-07	5.5E-07	5.4E-03	1.0E-02	3.9E-09	2.5E-08
All Depths	09K220074/VP-46	Pb-210	4.06E-02	9.6E-03	0.0E+00	2.2E-08	0.0E+00	1.3E-03	0.0E+00	2.6E-09	0.0E+00	1.2E-03	0.0E+00	9.8E-10	0.0E+00
All Depths	09K220074/VP-46	Th-230	1.24E+00	3.4E-02	1.5E-01	5.1E-07	2.1E-06	6.6E-03	4.3E-02	1.1E-07	5.5E-07	4.2E-03	1.0E-02	3.0E-09	2.5E-08
All Depths	09K220074/VP-46	TOTAL		4.3E-02	1.5E-01	5.3E-07	2.1E-06	7.8E-03	4.3E-02	1.1E-07	5.5E-07	5.4E-03	1.0E-02	3.9E-09	2.5E-08
Sub. (>0.5 ft)	09K220085/VP-47	Pb-210	2.66E-02	6.3E-03	0.0E+00	1.5E-08	0.0E+00	8.3E-04	0.0E+00	1.7E-09	0.0E+00	8.1E-04	0.0E+00	6.4E-10	0.0E+00
Sub. (>0.5 ft)	09K220085/VP-47	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
Sub. (>0.5 ft)	09K220085/VP-47	TOTAL		1.3E-02	3.0E-02	1.1E-07	4.1E-07	2.1E-03	8.4E-03	2.3E-08	1.1E-07	1.6E-03	2.0E-03	1.2E-09	4.7E-09
All Depths	09K220085/VP-47	Pb-210	2.66E-02	6.3E-03	0.0E+00	1.5E-08	0.0E+00	8.3E-04	0.0E+00	1.7E-09	0.0E+00	8.1E-04	0.0E+00	6.4E-10	0.0E+00
All Depths	09K220085/VP-47	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
All Depths	09K220085/VP-47	TOTAL		1.3E-02	3.0E-02	1.1E-07	4.1E-07	2.1E-03	8.4E-03	2.3E-08	1.1E-07	1.6E-03	2.0E-03	1.2E-09	4.7E-09
Sub. (>0.5 ft)	09K220140/VP-40	Pb-210	4.55E-02	1.1E-02	0.0E+00	2.5E-08	0.0E+00	1.4E-03	0.0E+00	3.0E-09	0.0E+00	1.4E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	09K220140/VP-40	Th-230	1.59E+00	4.3E-02	2.0E-01	6.6E-07	2.7E-06	8.4E-03	5.6E-02	1.4E-07	7.1E-07	5.3E-03	1.3E-02	3.8E-09	3.1E-08
Sub. (>0.5 ft)	09K220140/VP-40	TOTAL		5.4E-02	2.0E-01	6.8E-07	2.7E-06	9.9E-03	5.6E-02	1.4E-07	7.1E-07	6.7E-03	1.3E-02	4.9E-09	3.1E-08
All Depths	09K220140/VP-40	Pb-210	4.55E-02	1.1E-02	0.0E+00	2.5E-08	0.0E+00	1.4E-03	0.0E+00	3.0E-09	0.0E+00	1.4E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	09K220140/VP-40	Th-230	1.59E+00	4.3E-02	2.0E-01	6.6E-07	2.7E-06	8.4E-03	5.6E-02	1.4E-07	7.1E-07	5.3E-03	1.3E-02	3.8E-09	3.1E-08
All Depths	09K220140/VP-40	TOTAL		5.4E-02	2.0E-01	6.8E-07	2.7E-06	9.9E-03	5.6E-02	1.4E-07	7.1E-07	6.7E-03	1.3E-02	4.9E-09	3.1E-08
Sub. (>0.5 ft)	09K220162/VP-53	Pb-210	2.80E-02	6.6E-03	0.0E+00	1.5E-08	0.0E+00	8.7E-04	0.0E+00	1.8E-09	0.0E+00	8.5E-04	0.0E+00	6.8E-10	0.0E+00
Sub. (>0.5 ft)	09K220162/VP-53	Th-230	3.40E-01	9.2E-03	4.2E-02	1.4E-07	5.9E-07	1.8E-03	1.2E-02	3.0E-08	1.5E-07	1.1E-03	2.9E-03	8.1E-10	6.7E-09
Sub. (>0.5 ft)	09K220162/VP-53	TOTAL		1.6E-02	4.2E-02	1.6E-07	5.9E-07	2.7E-03	1.2E-02	3.2E-08	1.5E-07	2.0E-03	2.9E-03	1.5E-09	6.7E-09
All Depths	09K220162/VP-53	Pb-210	2.80E-02	6.6E-03	0.0E+00	1.5E-08	0.0E+00	8.7E-04	0.0E+00	1.8E-09	0.0E+00	8.5E-04	0.0E+00	6.8E-10	0.0E+00
All Depths	09K220162/VP-53	Th-230	3.40E-01	9.2E-03	4.2E-02	1.4E-07	5.9E-07	1.8E-03	1.2E-02	3.0E-08	1.5E-07	1.1E-03	2.9E-03	8.1E-10	6.7E-09
All Depths	09K220162/VP-53	TOTAL		1.6E-02	4.2E-02	1.6E-07	5.9E-07	2.7E-03	1.2E-02	3.2E-08	1.5E-07	2.0E-03	2.9E-03	1.5E-09	6.7E-09
Sub. (>0.5 ft)	09K220173/VP-48(A)	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
Sub. (>0.5 ft)	09K220173/VP-48(A)	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09
Sub. (>0.5 ft)	09K220173/VP-48(A)	TOTAL		1.9E-02	5.4E-02	2.0E-07	7.6E-07	3.3E-03	1.5E-02	4.1E-08	2.0E-07	2.4E-03	3.7E-03	1.8E-09	8.7E-09
Surf. (<0.5 ft)	09K220173/VP-48(A)	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
Surf. (<0.5 ft)	09K220173/VP-48(A)	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09

Attachment 12. Radiological Doses and Risks for each Property (page 5 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	09K220173/VP-48(A)	Th-232	7.90E-01	1.1E-01	3.6E+00	4.5E-05	6.2E-05	2.1E-02	1.1E+00	1.1E-05	1.6E-05	1.3E-02	1.9E-01	1.6E-07	6.7E-07
Surf. (<0.5 ft)	09K220173/VP-48(A)	TOTAL		1.2E-01	3.7E+00	4.5E-05	6.2E-05	2.4E-02	1.1E+00	1.1E-05	1.6E-05	1.6E-02	1.9E-01	1.6E-07	6.8E-07
All Depths	09K220173/VP-48(A)	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
All Depths	09K220173/VP-48(A)	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09
All Depths	09K220173/VP-48(A)	Th-232	7.90E-01	1.1E-01	3.6E+00	4.5E-05	6.2E-05	2.1E-02	1.1E+00	1.1E-05	1.6E-05	1.3E-02	1.9E-01	1.6E-07	6.7E-07
All Depths	09K220173/VP-48(A)	TOTAL		1.2E-01	3.7E+00	4.5E-05	6.2E-05	2.4E-02	1.1E+00	1.1E-05	1.6E-05	1.6E-02	1.9E-01	1.6E-07	6.8E-07
Sub. (>0.5 ft)	09K220184/VP-48	Pb-210	1.13E-01	2.7E-02	0.0E+00	6.2E-08	0.0E+00	3.5E-03	0.0E+00	7.4E-09	0.0E+00	3.5E-03	0.0E+00	2.7E-09	0.0E+00
Sub. (>0.5 ft)	09K220184/VP-48	Th-230	6.44E+00	1.7E-01	8.0E-01	2.7E-06	1.1E-05	3.4E-02	2.3E-01	5.7E-07	2.9E-06	2.2E-02	5.4E-02	1.5E-08	1.3E-07
Sub. (>0.5 ft)	09K220184/VP-48	TOTAL		2.0E-01	8.0E-01	2.7E-06	1.1E-05	3.8E-02	2.3E-01	5.8E-07	2.9E-06	2.5E-02	5.4E-02	1.8E-08	1.3E-07
Surf. (<0.5 ft)	09K220184/VP-48	Pb-210	1.32E-02	3.1E-03	0.0E+00	7.2E-09	0.0E+00	4.1E-04	0.0E+00	8.6E-10	0.0E+00	4.0E-04	0.0E+00	3.2E-10	0.0E+00
Surf. (<0.5 ft)	09K220184/VP-48	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
Surf. (<0.5 ft)	09K220184/VP-48	Th-232	4.90E-01	6.6E-02	2.3E+00	2.8E-05	3.8E-05	1.3E-02	7.0E-01	6.8E-06	1.0E-05	8.2E-03	1.2E-01	1.0E-07	4.1E-07
Surf. (<0.5 ft)	09K220184/VP-48	U-238	5.72E+00	3.2E-01	0.0E+00	3.0E-06	0.0E+00	9.3E-02	0.0E+00	7.9E-07	0.0E+00	2.1E-02	0.0E+00	4.7E-08	0.0E+00
Surf. (<0.5 ft)	09K220184/VP-48	TOTAL		3.1E+00	2.3E+00	7.0E-05	3.8E-05	9.7E-01	7.0E-01	1.8E-05	1.0E-05	1.7E-01	1.2E-01	6.5E-07	4.1E-07
All Depths	09K220184/VP-48	Pb-210	1.08E-01	2.6E-02	0.0E+00	5.9E-08	0.0E+00	3.4E-03	0.0E+00	7.0E-09	0.0E+00	3.3E-03	0.0E+00	2.6E-09	0.0E+00
All Depths	09K220184/VP-48	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
All Depths	09K220184/VP-48	Th-230	6.05E+00	1.6E-01	7.5E-01	2.5E-06	1.0E-05	3.2E-02	2.1E-01	5.4E-07	2.7E-06	2.0E-02	5.1E-02	1.4E-08	1.2E-07
All Depths	09K220184/VP-48	Th-232	4.90E-01	6.6E-02	2.3E+00	2.8E-05	3.8E-05	1.3E-02	7.0E-01	6.8E-06	1.0E-05	8.2E-03	1.2E-01	1.0E-07	4.1E-07
All Depths	09K220184/VP-48	U-238	5.72E+00	3.2E-01	0.0E+00	3.0E-06	0.0E+00	9.3E-02	0.0E+00	7.9E-07	0.0E+00	2.1E-02	0.0E+00	4.7E-08	0.0E+00
All Depths	09K220184/VP-48	TOTAL		3.3E+00	3.0E+00	7.2E-05	4.9E-05	1.0E+00	9.1E-01	1.9E-05	1.3E-05	1.9E-01	1.7E-01	6.7E-07	5.3E-07
Sub. (>0.5 ft)	09K220195/VP-49	Pb-210	3.67E-02	8.7E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	8.8E-10	0.0E+00
Sub. (>0.5 ft)	09K220195/VP-49	Th-230	9.60E-01	2.6E-02	1.2E-01	4.0E-07	1.7E-06	5.1E-03	3.4E-02	8.6E-08	4.3E-07	3.2E-03	8.1E-03	2.3E-09	1.9E-08
Sub. (>0.5 ft)	09K220195/VP-49	TOTAL		3.5E-02	1.2E-01	4.2E-07	1.7E-06	6.2E-03	3.4E-02	8.8E-08	4.3E-07	4.3E-03	8.1E-03	3.2E-09	1.9E-08
All Depths	09K220195/VP-49	Pb-210	3.67E-02	8.7E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	8.8E-10	0.0E+00
All Depths	09K220195/VP-49	Th-230	9.60E-01	2.6E-02	1.2E-01	4.0E-07	1.7E-06	5.1E-03	3.4E-02	8.6E-08	4.3E-07	3.2E-03	8.1E-03	2.3E-09	1.9E-08
All Depths	09K220195/VP-49	TOTAL		3.5E-02	1.2E-01	4.2E-07	1.7E-06	6.2E-03	3.4E-02	8.8E-08	4.3E-07	4.3E-03	8.1E-03	3.2E-09	1.9E-08
Sub. (>0.5 ft)	09K310197/VP-50,51	Pb-210	2.38E-02	5.6E-03	0.0E+00	1.3E-08	0.0E+00	7.4E-04	0.0E+00	1.6E-09	0.0E+00	7.3E-04	0.0E+00	5.7E-10	0.0E+00
Sub. (>0.5 ft)	09K310197/VP-50,51	Th-230	4.00E-02	1.1E-03	5.0E-03	1.7E-08	6.9E-08	2.1E-04	1.4E-03	3.6E-09	1.8E-08	1.3E-04	3.4E-04	9.5E-11	7.9E-10
Sub. (>0.5 ft)	09K310197/VP-50,51	TOTAL		6.7E-03	5.0E-03	3.0E-08	6.9E-08	9.5E-04	1.4E-03	5.1E-09	1.8E-08	8.6E-04	3.4E-04	6.7E-10	7.9E-10
All Depths	09K310197/VP-50,51	Pb-210	2.38E-02	5.6E-03	0.0E+00	1.3E-08	0.0E+00	7.4E-04	0.0E+00	1.6E-09	0.0E+00	7.3E-04	0.0E+00	5.7E-10	0.0E+00
All Depths	09K310197/VP-50,51	Th-230	4.00E-02	1.1E-03	5.0E-03	1.7E-08	6.9E-08	2.1E-04	1.4E-03	3.6E-09	1.8E-08	1.3E-04	3.4E-04	9.5E-11	7.9E-10
All Depths	09K310197/VP-50,51	TOTAL		6.7E-03	5.0E-03	3.0E-08	6.9E-08	9.5E-04	1.4E-03	5.1E-09	1.8E-08	8.6E-04	3.4E-04	6.7E-10	7.9E-10
Sub. (>0.5 ft)	10K110021	Pb-210	2.10E-02	5.0E-03	0.0E+00	1.2E-08	0.0E+00	6.5E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.1E-10	0.0E+00
Sub. (>0.5 ft)	10K110021	TOTAL		5.0E-03	0.0E+00	1.2E-08	0.0E+00	6.5E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.1E-10	0.0E+00
Surf. (<0.5 ft)	10K110021	Pb-210	2.06E-02	4.9E-03	0.0E+00	1.1E-08	0.0E+00	6.4E-04	0.0E+00	1.3E-09	0.0E+00	6.3E-04	0.0E+00	5.0E-10	0.0E+00
Surf. (<0.5 ft)	10K110021	Ra-226	5.50E-01	2.0E+00	0.0E+00	2.8E-05	0.0E+00	6.3E-01	0.0E+00	7.8E-06	0.0E+00	1.0E-01	0.0E+00	3.7E-07	0.0E+00
Surf. (<0.5 ft)	10K110021	Th-232	9.50E-01	1.3E-01	4.4E+00	5.4E-05	7.4E-05	2.5E-02	1.4E+00	1.3E-05	2.0E-05	1.6E-02	2.3E-01	2.0E-07	8.0E-07
Surf. (<0.5 ft)	10K110021	U-238	6.22E+00	3.5E-01	0.0E+00	3.2E-06	0.0E+00	1.0E-01	0.0E+00	8.6E-07	0.0E+00	2.3E-02	0.0E+00	5.1E-08	0.0E+00
Surf. (<0.5 ft)	10K110021	TOTAL		2.5E+00	4.4E+00	8.6E-05	7.4E-05	7.6E-01	1.4E+00	2.2E-05	2.0E-05	1.4E-01	2.3E-01	6.1E-07	8.0E-07
All Depths	10K110021	Pb-210	2.04E-02	4.8E-03	0.0E+00	1.1E-08	0.0E+00	6.4E-04	0.0E+00	1.3E-09	0.0E+00	6.2E-04	0.0E+00	4.9E-10	0.0E+00
All Depths	10K110021	Ra-226	5.50E-01	2.0E+00	0.0E+00	2.8E-05	0.0E+00	6.3E-01	0.0E+00	7.8E-06	0.0E+00	1.0E-01	0.0E+00	3.7E-07	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 6 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K110021	Th-232	9.50E-01	1.3E-01	4.4E+00	5.4E-05	7.4E-05	2.5E-02	1.4E+00	1.3E-05	2.0E-05	1.6E-02	2.3E-01	2.0E-07	8.0E-07
All Depths	10K110021	U-238	6.22E+00	3.5E-01	0.0E+00	3.2E-06	0.0E+00	1.0E-01	0.0E+00	8.6E-07	0.0E+00	2.3E-02	0.0E+00	5.1E-08	0.0E+00
All Depths	10K110021	TOTAL		2.5E+00	4.4E+00	8.6E-05	7.4E-05	7.6E-01	1.4E+00	2.2E-05	2.0E-05	1.4E-01	2.3E-01	6.1E-07	8.0E-07
Surf. (<0.5 ft)	10K130014	Pb-210	3.22E-02	7.6E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	9.8E-04	0.0E+00	7.8E-10	0.0E+00
Surf. (<0.5 ft)	10K130014	Ra-226	5.00E-02	1.8E-01	0.0E+00	2.6E-06	0.0E+00	5.7E-02	0.0E+00	7.1E-07	0.0E+00	9.1E-03	0.0E+00	3.3E-08	0.0E+00
Surf. (<0.5 ft)	10K130014	Th-230	6.40E-01	1.7E-02	7.9E-02	2.6E-07	1.1E-06	3.4E-03	2.2E-02	5.7E-08	2.9E-07	2.1E-03	5.4E-03	1.5E-09	1.3E-08
Surf. (<0.5 ft)	10K130014	Th-232	2.55E+00	3.4E-01	1.2E+01	1.5E-04	2.0E-04	6.6E-02	3.7E+00	3.6E-05	5.2E-05	4.2E-02	6.1E-01	5.2E-07	2.2E-06
Surf. (<0.5 ft)	10K130014	U-238	2.07E+01	1.2E+00	0.0E+00	1.1E-05	0.0E+00	3.4E-01	0.0E+00	2.8E-06	0.0E+00	7.6E-02	0.0E+00	1.7E-07	0.0E+00
Surf. (<0.5 ft)	10K130014	TOTAL		1.7E+00	1.2E+01	1.6E-04	2.0E-04	4.7E-01	3.7E+00	3.9E-05	5.3E-05	1.3E-01	6.2E-01	7.3E-07	2.2E-06
All Depths	10K130014	Pb-210	3.22E-02	7.6E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	9.8E-04	0.0E+00	7.8E-10	0.0E+00
All Depths	10K130014	Ra-226	5.00E-02	1.8E-01	0.0E+00	2.6E-06	0.0E+00	5.7E-02	0.0E+00	7.1E-07	0.0E+00	9.1E-03	0.0E+00	3.3E-08	0.0E+00
All Depths	10K130014	Th-230	6.40E-01	1.7E-02	7.9E-02	2.6E-07	1.1E-06	3.4E-03	2.2E-02	5.7E-08	2.9E-07	2.1E-03	5.4E-03	1.5E-09	1.3E-08
All Depths	10K130014	Th-232	2.55E+00	3.4E-01	1.2E+01	1.5E-04	2.0E-04	6.6E-02	3.7E+00	3.6E-05	5.2E-05	4.2E-02	6.1E-01	5.2E-07	2.2E-06
All Depths	10K130014	U-238	2.07E+01	1.2E+00	0.0E+00	1.1E-05	0.0E+00	3.4E-01	0.0E+00	2.8E-06	0.0E+00	7.6E-02	0.0E+00	1.7E-07	0.0E+00
All Depths	10K130014	TOTAL		1.7E+00	1.2E+01	1.6E-04	2.0E-04	4.7E-01	3.7E+00	3.9E-05	5.3E-05	1.3E-01	6.2E-01	7.3E-07	2.2E-06
Surf. (<0.5 ft)	10K140024/VP-10(C)	Pb-210	7.98E-02	1.9E-02	0.0E+00	4.4E-08	0.0E+00	2.5E-03	0.0E+00	5.2E-09	0.0E+00	2.4E-03	0.0E+00	1.9E-09	0.0E+00
Surf. (<0.5 ft)	10K140024/VP-10(C)	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
Surf. (<0.5 ft)	10K140024/VP-10(C)	Th-230	4.04E+00	1.1E-01	5.0E-01	1.7E-06	7.0E-06	2.1E-02	1.4E-01	3.6E-07	1.8E-06	1.4E-02	3.4E-02	9.6E-09	8.0E-08
Surf. (<0.5 ft)	10K140024/VP-10(C)	Th-232	1.89E+00	2.5E-01	8.7E+00	1.1E-04	1.5E-04	4.9E-02	2.7E+00	2.6E-05	3.9E-05	3.1E-02	4.5E-01	3.9E-07	1.6E-06
Surf. (<0.5 ft)	10K140024/VP-10(C)	U-238	1.10E+01	6.2E-01	0.0E+00	5.7E-06	0.0E+00	1.8E-01	0.0E+00	1.5E-06	0.0E+00	4.0E-02	0.0E+00	9.1E-08	0.0E+00
Surf. (<0.5 ft)	10K140024/VP-10(C)	TOTAL		3.7E+00	9.2E+00	1.5E-04	1.5E-04	1.1E+00	2.8E+00	3.9E-05	4.1E-05	2.2E-01	4.9E-01	9.9E-07	1.7E-06
All Depths	10K140024/VP-10(C)	Pb-210	7.98E-02	1.9E-02	0.0E+00	4.4E-08	0.0E+00	2.5E-03	0.0E+00	5.2E-09	0.0E+00	2.4E-03	0.0E+00	1.9E-09	0.0E+00
All Depths	10K140024/VP-10(C)	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
All Depths	10K140024/VP-10(C)	Th-230	4.04E+00	1.1E-01	5.0E-01	1.7E-06	7.0E-06	2.1E-02	1.4E-01	3.6E-07	1.8E-06	1.4E-02	3.4E-02	9.6E-09	8.0E-08
All Depths	10K140024/VP-10(C)	Th-232	1.89E+00	2.5E-01	8.7E+00	1.1E-04	1.5E-04	4.9E-02	2.7E+00	2.6E-05	3.9E-05	3.1E-02	4.5E-01	3.9E-07	1.6E-06
All Depths	10K140024/VP-10(C)	U-238	1.10E+01	6.2E-01	0.0E+00	5.7E-06	0.0E+00	1.8E-01	0.0E+00	1.5E-06	0.0E+00	4.0E-02	0.0E+00	9.1E-08	0.0E+00
All Depths	10K140024/VP-10(C)	TOTAL		3.7E+00	9.2E+00	1.5E-04	1.5E-04	1.1E+00	2.8E+00	3.9E-05	4.1E-05	2.2E-01	4.9E-01	9.9E-07	1.7E-06
Sub. (>0.5 ft)	10K210053/VP-17	Pb-210	3.51E-02	8.3E-03	0.0E+00	1.9E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.5E-10	0.0E+00
Sub. (>0.5 ft)	10K210053/VP-17	Th-230	8.50E-01	2.3E-02	1.1E-01	3.5E-07	1.5E-06	4.5E-03	3.0E-02	7.6E-08	3.8E-07	2.8E-03	7.2E-03	2.0E-09	1.7E-08
Sub. (>0.5 ft)	10K210053/VP-17	TOTAL		3.1E-02	1.1E-01	3.7E-07	1.5E-06	5.6E-03	3.0E-02	7.8E-08	3.8E-07	3.9E-03	7.2E-03	2.9E-09	1.7E-08
All Depths	10K210053/VP-17	Pb-210	3.51E-02	8.3E-03	0.0E+00	1.9E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.5E-10	0.0E+00
All Depths	10K210053/VP-17	Th-230	8.50E-01	2.3E-02	1.1E-01	3.5E-07	1.5E-06	4.5E-03	3.0E-02	7.6E-08	3.8E-07	2.8E-03	7.2E-03	2.0E-09	1.7E-08
All Depths	10K210053/VP-17	TOTAL		3.1E-02	1.1E-01	3.7E-07	1.5E-06	5.6E-03	3.0E-02	7.8E-08	3.8E-07	3.9E-03	7.2E-03	2.9E-09	1.7E-08
Sub. (>0.5 ft)	10K210064	Pb-210	6.93E-02	1.6E-02	0.0E+00	3.8E-08	0.0E+00	2.2E-03	0.0E+00	4.5E-09	0.0E+00	2.1E-03	0.0E+00	1.7E-09	0.0E+00
Sub. (>0.5 ft)	10K210064	Th-230	3.29E+00	8.9E-02	4.1E-01	1.4E-06	5.7E-06	1.7E-02	1.2E-01	2.9E-07	1.5E-06	1.1E-02	2.8E-02	7.8E-09	6.5E-08
Sub. (>0.5 ft)	10K210064	TOTAL		1.1E-01	4.1E-01	1.4E-06	5.7E-06	2.0E-02	1.2E-01	3.0E-07	1.5E-06	1.3E-02	2.8E-02	9.5E-09	6.5E-08
All Depths	10K210064	Pb-210	6.93E-02	1.6E-02	0.0E+00	3.8E-08	0.0E+00	2.2E-03	0.0E+00	4.5E-09	0.0E+00	2.1E-03	0.0E+00	1.7E-09	0.0E+00
All Depths	10K210064	Th-230	3.29E+00	8.9E-02	4.1E-01	1.4E-06	5.7E-06	1.7E-02	1.2E-01	2.9E-07	1.5E-06	1.1E-02	2.8E-02	7.8E-09	6.5E-08
All Depths	10K210064	TOTAL		1.1E-01	4.1E-01	1.4E-06	5.7E-06	2.0E-02	1.2E-01	3.0E-07	1.5E-06	1.3E-02	2.8E-02	9.5E-09	6.5E-08
Sub. (>0.5 ft)	10K230031/VP-19	Pb-210	1.07E-01	2.5E-02	0.0E+00	5.9E-08	0.0E+00	3.3E-03	0.0E+00	7.0E-09	0.0E+00	3.3E-03	0.0E+00	2.6E-09	0.0E+00
Sub. (>0.5 ft)	10K230031/VP-19	Th-230	5.99E+00	1.6E-01	7.4E-01	2.5E-06	1.0E-05	3.2E-02	2.1E-01	5.3E-07	2.7E-06	2.0E-02	5.1E-02	1.4E-08	1.2E-07
Sub. (>0.5 ft)	10K230031/VP-19	TOTAL		1.9E-01	7.4E-01	2.5E-06	1.0E-05	3.5E-02	2.1E-01	5.4E-07	2.7E-06	2.3E-02	5.1E-02	1.7E-08	1.2E-07

Attachment 12. Radiological Doses and Risks for each Property (page 7 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K230031/VP-19	Pb-210	1.07E-01	2.5E-02	0.0E+00	5.9E-08	0.0E+00	3.3E-03	0.0E+00	7.0E-09	0.0E+00	3.3E-03	0.0E+00	2.6E-09	0.0E+00
All Depths	10K230031/VP-19	Th-230	5.99E+00	1.6E-01	7.4E-01	2.5E-06	1.0E-05	3.2E-02	2.1E-01	5.3E-07	2.7E-06	2.0E-02	5.1E-02	1.4E-08	1.2E-07
All Depths	10K230031/VP-19	TOTAL		1.9E-01	7.4E-01	2.5E-06	1.0E-05	3.5E-02	2.1E-01	5.4E-07	2.7E-06	2.3E-02	5.1E-02	1.7E-08	1.2E-07
Sub. (>0.5 ft)	10K230040/VP-20	Pb-210	6.57E-02	1.6E-02	0.0E+00	3.6E-08	0.0E+00	2.0E-03	0.0E+00	4.3E-09	0.0E+00	2.0E-03	0.0E+00	1.6E-09	0.0E+00
Sub. (>0.5 ft)	10K230040/VP-20	Th-230	3.03E+00	8.2E-02	3.8E-01	1.3E-06	5.2E-06	1.6E-02	1.1E-01	2.7E-07	1.4E-06	1.0E-02	2.6E-02	7.2E-09	6.0E-08
Sub. (>0.5 ft)	10K230040/VP-20	TOTAL		9.8E-02	3.8E-01	1.3E-06	5.2E-06	1.8E-02	1.1E-01	2.7E-07	1.4E-06	1.2E-02	2.6E-02	8.8E-09	6.0E-08
All Depths	10K230040/VP-20	Pb-210	6.57E-02	1.6E-02	0.0E+00	3.6E-08	0.0E+00	2.0E-03	0.0E+00	4.3E-09	0.0E+00	2.0E-03	0.0E+00	1.6E-09	0.0E+00
All Depths	10K230040/VP-20	Th-230	3.03E+00	8.2E-02	3.8E-01	1.3E-06	5.2E-06	1.6E-02	1.1E-01	2.7E-07	1.4E-06	1.0E-02	2.6E-02	7.2E-09	6.0E-08
All Depths	10K230040/VP-20	TOTAL		9.8E-02	3.8E-01	1.3E-06	5.2E-06	1.8E-02	1.1E-01	2.7E-07	1.4E-06	1.2E-02	2.6E-02	8.8E-09	6.0E-08
Sub. (>0.5 ft)	10K230051/VP-18	Pb-210	3.82E-02	9.0E-03	0.0E+00	2.1E-08	0.0E+00	1.2E-03	0.0E+00	2.5E-09	0.0E+00	1.2E-03	0.0E+00	9.2E-10	0.0E+00
Sub. (>0.5 ft)	10K230051/VP-18	Th-230	1.07E+00	2.9E-02	1.3E-01	4.4E-07	1.8E-06	5.7E-03	3.7E-02	9.6E-08	4.8E-07	3.6E-03	9.1E-03	2.5E-09	2.1E-08
Sub. (>0.5 ft)	10K230051/VP-18	TOTAL		3.8E-02	1.3E-01	4.6E-07	1.8E-06	6.9E-03	3.7E-02	9.8E-08	4.8E-07	4.8E-03	9.1E-03	3.5E-09	2.1E-08
All Depths	10K230051/VP-18	Pb-210	3.82E-02	9.0E-03	0.0E+00	2.1E-08	0.0E+00	1.2E-03	0.0E+00	2.5E-09	0.0E+00	1.2E-03	0.0E+00	9.2E-10	0.0E+00
All Depths	10K230051/VP-18	Th-230	1.07E+00	2.9E-02	1.3E-01	4.4E-07	1.8E-06	5.7E-03	3.7E-02	9.6E-08	4.8E-07	3.6E-03	9.1E-03	2.5E-09	2.1E-08
All Depths	10K230051/VP-18	TOTAL		3.8E-02	1.3E-01	4.6E-07	1.8E-06	6.9E-03	3.7E-02	9.8E-08	4.8E-07	4.8E-03	9.1E-03	3.5E-09	2.1E-08
Sub. (>0.5 ft)	10K230073/VP-21	Pb-210	1.51E-02	3.6E-03	0.0E+00	8.3E-09	0.0E+00	4.7E-04	0.0E+00	9.9E-10	0.0E+00	4.6E-04	0.0E+00	3.6E-10	0.0E+00
Sub. (>0.5 ft)	10K230073/VP-21	TOTAL		3.6E-03	0.0E+00	8.3E-09	0.0E+00	4.7E-04	0.0E+00	9.9E-10	0.0E+00	4.6E-04	0.0E+00	3.6E-10	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	Pb-210	2.80E-02	6.6E-03	0.0E+00	1.5E-08	0.0E+00	8.7E-04	0.0E+00	1.8E-09	0.0E+00	8.5E-04	0.0E+00	6.8E-10	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	Ra-226	9.50E-01	3.5E+00	0.0E+00	4.9E-05	0.0E+00	1.1E+00	0.0E+00	1.3E-05	0.0E+00	1.7E-01	0.0E+00	6.3E-07	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	Th-230	3.40E-01	9.2E-03	4.2E-02	1.4E-07	5.9E-07	1.8E-03	1.2E-02	3.0E-08	1.5E-07	1.1E-03	2.9E-03	8.1E-10	6.7E-09
Surf. (<0.5 ft)	10K230073/VP-21	Th-232	8.90E-01	1.2E-01	4.1E+00	5.1E-05	6.9E-05	2.3E-02	1.3E+00	1.2E-05	1.8E-05	1.5E-02	2.1E-01	1.8E-07	7.5E-07
Surf. (<0.5 ft)	10K230073/VP-21	U-238	7.98E+00	4.5E-01	0.0E+00	4.2E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	2.9E-02	0.0E+00	6.6E-08	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	TOTAL		4.0E+00	4.1E+00	1.0E-04	7.0E-05	1.2E+00	1.3E+00	2.7E-05	1.8E-05	2.2E-01	2.2E-01	8.8E-07	7.6E-07
All Depths	10K230073/VP-21	Pb-210	2.11E-02	5.0E-03	0.0E+00	1.2E-08	0.0E+00	6.6E-04	0.0E+00	1.4E-09	0.0E+00	6.4E-04	0.0E+00	5.1E-10	0.0E+00
All Depths	10K230073/VP-21	Ra-226	9.50E-01	3.5E+00	0.0E+00	4.9E-05	0.0E+00	1.1E+00	0.0E+00	1.3E-05	0.0E+00	1.7E-01	0.0E+00	6.3E-07	0.0E+00
All Depths	10K230073/VP-21	Th-232	8.90E-01	1.2E-01	4.1E+00	5.1E-05	6.9E-05	2.3E-02	1.3E+00	1.2E-05	1.8E-05	1.5E-02	2.1E-01	1.8E-07	7.5E-07
All Depths	10K230073/VP-21	U-238	7.98E+00	4.5E-01	0.0E+00	4.2E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	2.9E-02	0.0E+00	6.6E-08	0.0E+00
All Depths	10K230073/VP-21	TOTAL		4.0E+00	4.1E+00	1.0E-04	6.9E-05	1.2E+00	1.3E+00	2.7E-05	1.8E-05	2.2E-01	2.1E-01	8.8E-07	7.5E-07
Sub. (>0.5 ft)	10K240094/VP-23	Pb-210	2.20E-02	5.2E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.4E-09	0.0E+00	6.7E-04	0.0E+00	5.3E-10	0.0E+00
Sub. (>0.5 ft)	10K240094/VP-23	TOTAL		5.2E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.4E-09	0.0E+00	6.7E-04	0.0E+00	5.3E-10	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	Pb-210	2.21E-02	5.2E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.4E-09	0.0E+00	6.7E-04	0.0E+00	5.3E-10	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	Th-232	7.90E-01	1.1E-01	3.6E+00	4.5E-05	6.2E-05	2.1E-02	1.1E+00	1.1E-05	1.6E-05	1.3E-02	1.9E-01	1.6E-07	6.7E-07
Surf. (<0.5 ft)	10K240094/VP-23	U-238	2.83E+00	1.6E-01	0.0E+00	1.5E-06	0.0E+00	4.6E-02	0.0E+00	3.9E-07	0.0E+00	1.0E-02	0.0E+00	2.3E-08	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	TOTAL		3.0E+00	3.6E+00	8.5E-05	6.2E-05	9.3E-01	1.1E+00	2.2E-05	1.6E-05	1.6E-01	1.9E-01	6.9E-07	6.7E-07
All Depths	10K240094/VP-23	Pb-210	2.27E-02	5.4E-03	0.0E+00	1.2E-08	0.0E+00	7.1E-04	0.0E+00	1.5E-09	0.0E+00	6.9E-04	0.0E+00	5.5E-10	0.0E+00
All Depths	10K240094/VP-23	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
All Depths	10K240094/VP-23	Th-232	7.90E-01	1.1E-01	3.6E+00	4.5E-05	6.2E-05	2.1E-02	1.1E+00	1.1E-05	1.6E-05	1.3E-02	1.9E-01	1.6E-07	6.7E-07
All Depths	10K240094/VP-23	U-238	2.83E+00	1.6E-01	0.0E+00	1.5E-06	0.0E+00	4.6E-02	0.0E+00	3.9E-07	0.0E+00	1.0E-02	0.0E+00	2.3E-08	0.0E+00
All Depths	10K240094/VP-23	TOTAL		3.0E+00	3.6E+00	8.5E-05	6.2E-05	9.3E-01	1.1E+00	2.2E-05	1.6E-05	1.6E-01	1.9E-01	6.9E-07	6.7E-07
Sub. (>0.5 ft)	10K240106/VP-22	Pb-210	1.53E-02	3.6E-03	0.0E+00	8.4E-09	0.0E+00	4.8E-04	0.0E+00	1.0E-09	0.0E+00	4.7E-04	0.0E+00	3.7E-10	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 8 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	10K240106/VP-22	TOTAL		3.6E-03	0.0E+00	8.4E-09	0.0E+00	4.8E-04	0.0E+00	1.0E-09	0.0E+00	4.7E-04	0.0E+00	3.7E-10	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	Pb-210	3.22E-02	7.6E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	9.8E-04	0.0E+00	7.8E-10	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	Ra-226	3.50E-01	1.3E+00	0.0E+00	1.8E-05	0.0E+00	4.0E-01	0.0E+00	4.9E-06	0.0E+00	6.3E-02	0.0E+00	2.3E-07	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	Th-230	6.40E-01	1.7E-02	7.9E-02	2.6E-07	1.1E-06	3.4E-03	2.2E-02	5.7E-08	2.9E-07	2.1E-03	5.4E-03	1.5E-09	1.3E-08
Surf. (<0.5 ft)	10K240106/VP-22	Th-232	5.90E-01	7.9E-02	2.7E+00	3.4E-05	4.6E-05	1.5E-02	8.4E-01	8.2E-06	1.2E-05	9.8E-03	1.4E-01	1.2E-07	5.0E-07
Surf. (<0.5 ft)	10K240106/VP-22	U-238	3.82E+00	2.2E-01	0.0E+00	2.0E-06	0.0E+00	6.2E-02	0.0E+00	5.3E-07	0.0E+00	1.4E-02	0.0E+00	3.1E-08	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	TOTAL		1.6E+00	2.8E+00	5.4E-05	4.7E-05	4.8E-01	8.7E-01	1.4E-05	1.2E-05	9.0E-02	1.5E-01	3.9E-07	5.1E-07
All Depths	10K240106/VP-22	Pb-210	2.20E-02	5.2E-03	0.0E+00	1.2E-08	0.0E+00	6.9E-04	0.0E+00	1.4E-09	0.0E+00	6.7E-04	0.0E+00	5.3E-10	0.0E+00
All Depths	10K240106/VP-22	Ra-226	3.50E-01	1.3E+00	0.0E+00	1.8E-05	0.0E+00	4.0E-01	0.0E+00	4.9E-06	0.0E+00	6.3E-02	0.0E+00	2.3E-07	0.0E+00
All Depths	10K240106/VP-22	Th-232	5.90E-01	7.9E-02	2.7E+00	3.4E-05	4.6E-05	1.5E-02	8.4E-01	8.2E-06	1.2E-05	9.8E-03	1.4E-01	1.2E-07	5.0E-07
All Depths	10K240106/VP-22	U-238	3.82E+00	2.2E-01	0.0E+00	2.0E-06	0.0E+00	6.2E-02	0.0E+00	5.3E-07	0.0E+00	1.4E-02	0.0E+00	3.1E-08	0.0E+00
All Depths	10K240106/VP-22	TOTAL		1.6E+00	2.7E+00	5.4E-05	4.6E-05	4.8E-01	8.4E-01	1.4E-05	1.2E-05	8.8E-02	1.4E-01	3.9E-07	5.0E-07
Surf. (<0.5 ft)	10K240182	Pb-210	2.27E-02	5.4E-03	0.0E+00	1.2E-08	0.0E+00	7.1E-04	0.0E+00	1.5E-09	0.0E+00	6.9E-04	0.0E+00	5.5E-10	0.0E+00
Surf. (<0.5 ft)	10K240182	TOTAL		5.4E-03	0.0E+00	1.2E-08	0.0E+00	7.1E-04	0.0E+00	1.5E-09	0.0E+00	6.9E-04	0.0E+00	5.5E-10	0.0E+00
All Depths	10K240182	Pb-210	2.27E-02	5.4E-03	0.0E+00	1.2E-08	0.0E+00	7.1E-04	0.0E+00	1.5E-09	0.0E+00	6.9E-04	0.0E+00	5.5E-10	0.0E+00
All Depths	10K240182	TOTAL		5.4E-03	0.0E+00	1.2E-08	0.0E+00	7.1E-04	0.0E+00	1.5E-09	0.0E+00	6.9E-04	0.0E+00	5.5E-10	0.0E+00
Sub. (>0.5 ft)	10K240207	Pb-210	5.95E-02	1.4E-02	0.0E+00	3.3E-08	0.0E+00	1.9E-03	0.0E+00	3.9E-09	0.0E+00	1.8E-03	0.0E+00	1.4E-09	0.0E+00
Sub. (>0.5 ft)	10K240207	Th-230	2.59E+00	7.0E-02	3.2E-01	1.1E-06	4.5E-06	1.4E-02	9.1E-02	2.3E-07	1.2E-06	8.7E-03	2.2E-02	6.2E-09	5.1E-08
Sub. (>0.5 ft)	10K240207	TOTAL		8.4E-02	3.2E-01	1.1E-06	4.5E-06	1.6E-02	9.1E-02	2.4E-07	1.2E-06	1.0E-02	2.2E-02	7.6E-09	5.1E-08
Surf. (<0.5 ft)	10K240207	Pb-210	4.90E-02	1.2E-02	0.0E+00	2.7E-08	0.0E+00	1.5E-03	0.0E+00	3.2E-09	0.0E+00	1.5E-03	0.0E+00	1.2E-09	0.0E+00
Surf. (<0.5 ft)	10K240207	Th-230	1.84E+00	5.0E-02	2.3E-01	7.6E-07	3.2E-06	9.8E-03	6.4E-02	1.6E-07	8.2E-07	6.2E-03	1.6E-02	4.4E-09	3.6E-08
Surf. (<0.5 ft)	10K240207	TOTAL		6.2E-02	2.3E-01	7.9E-07	3.2E-06	1.1E-02	6.4E-02	1.7E-07	8.2E-07	7.7E-03	1.6E-02	5.6E-09	3.6E-08
All Depths	10K240207	Pb-210	5.66E-02	1.3E-02	0.0E+00	3.1E-08	0.0E+00	1.8E-03	0.0E+00	3.7E-09	0.0E+00	1.7E-03	0.0E+00	1.4E-09	0.0E+00
All Depths	10K240207	Th-230	2.38E+00	6.5E-02	2.9E-01	9.8E-07	4.1E-06	1.3E-02	8.3E-02	2.1E-07	1.1E-06	8.0E-03	2.0E-02	5.7E-09	4.7E-08
All Depths	10K240207	TOTAL		7.8E-02	2.9E-01	1.0E-06	4.1E-06	1.4E-02	8.3E-02	2.2E-07	1.1E-06	9.7E-03	2.0E-02	7.0E-09	4.7E-08
Sub. (>0.5 ft)	10K330030/VP-27	Pb-210	8.27E-02	2.0E-02	0.0E+00	4.6E-08	0.0E+00	2.6E-03	0.0E+00	5.4E-09	0.0E+00	2.5E-03	0.0E+00	2.0E-09	0.0E+00
Sub. (>0.5 ft)	10K330030/VP-27	Th-230	4.25E+00	1.2E-01	5.3E-01	1.8E-06	7.3E-06	2.3E-02	1.5E-01	3.8E-07	1.9E-06	1.4E-02	3.6E-02	1.0E-08	8.4E-08
Sub. (>0.5 ft)	10K330030/VP-27	TOTAL		1.4E-01	5.3E-01	1.8E-06	7.3E-06	2.5E-02	1.5E-01	3.8E-07	1.9E-06	1.7E-02	3.6E-02	1.2E-08	8.4E-08
Surf. (<0.5 ft)	10K330030/VP-27	Pb-210	5.60E-02	1.3E-02	0.0E+00	3.1E-08	0.0E+00	1.7E-03	0.0E+00	3.7E-09	0.0E+00	1.7E-03	0.0E+00	1.4E-09	0.0E+00
Surf. (<0.5 ft)	10K330030/VP-27	Th-230	2.34E+00	6.4E-02	2.9E-01	9.7E-07	4.0E-06	1.2E-02	8.2E-02	2.1E-07	1.0E-06	7.8E-03	2.0E-02	5.6E-09	4.6E-08
Surf. (<0.5 ft)	10K330030/VP-27	TOTAL		7.7E-02	2.9E-01	1.0E-06	4.0E-06	1.4E-02	8.2E-02	2.1E-07	1.0E-06	9.6E-03	2.0E-02	6.9E-09	4.6E-08
All Depths	10K330030/VP-27	Pb-210	8.67E-02	2.1E-02	0.0E+00	4.8E-08	0.0E+00	2.7E-03	0.0E+00	5.7E-09	0.0E+00	2.6E-03	0.0E+00	2.1E-09	0.0E+00
All Depths	10K330030/VP-27	Th-230	4.53E+00	1.2E-01	5.6E-01	1.9E-06	7.8E-06	2.4E-02	1.6E-01	4.0E-07	2.0E-06	1.5E-02	3.8E-02	1.1E-08	9.0E-08
All Depths	10K330030/VP-27	TOTAL		1.4E-01	5.6E-01	1.9E-06	7.8E-06	2.7E-02	1.6E-01	4.1E-07	2.0E-06	1.8E-02	3.8E-02	1.3E-08	9.0E-08
Sub. (>0.5 ft)	10K330140/VP-24	Pb-210	1.93E-02	4.6E-03	0.0E+00	1.1E-08	0.0E+00	6.0E-04	0.0E+00	1.3E-09	0.0E+00	5.9E-04	0.0E+00	4.7E-10	0.0E+00
Sub. (>0.5 ft)	10K330140/VP-24	TOTAL		4.6E-03	0.0E+00	1.1E-08	0.0E+00	6.0E-04	0.0E+00	1.3E-09	0.0E+00	5.9E-04	0.0E+00	4.7E-10	0.0E+00
Surf. (<0.5 ft)	10K330140/VP-24	Pb-210	1.86E-02	4.4E-03	0.0E+00	1.0E-08	0.0E+00	5.8E-04	0.0E+00	1.2E-09	0.0E+00	5.7E-04	0.0E+00	4.5E-10	0.0E+00
Surf. (<0.5 ft)	10K330140/VP-24	Ra-226	5.40E-01	2.0E+00	0.0E+00	2.8E-05	0.0E+00	6.2E-01	0.0E+00	7.6E-06	0.0E+00	9.8E-02	0.0E+00	3.6E-07	0.0E+00
Surf. (<0.5 ft)	10K330140/VP-24	Th-232	5.90E-01	7.9E-02	2.7E+00	3.4E-05	4.6E-05	1.5E-02	8.4E-01	8.2E-06	1.2E-05	9.8E-03	1.4E-01	1.2E-07	5.0E-07
Surf. (<0.5 ft)	10K330140/VP-24	U-238	3.62E+00	2.0E-01	0.0E+00	1.9E-06	0.0E+00	5.9E-02	0.0E+00	5.0E-07	0.0E+00	1.3E-02	0.0E+00	3.0E-08	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 9 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K330140/VP-24	TOTAL		2.3E+00	2.7E+00	6.4E-05	4.6E-05	7.0E-01	8.4E-01	1.6E-05	1.2E-05	1.2E-01	1.4E-01	5.1E-07	5.0E-07
All Depths	10K330140/VP-24	Pb-210	1.89E-02	4.5E-03	0.0E+00	1.0E-08	0.0E+00	5.9E-04	0.0E+00	1.2E-09	0.0E+00	5.8E-04	0.0E+00	4.6E-10	0.0E+00
All Depths	10K330140/VP-24	Ra-226	5.40E-01	2.0E+00	0.0E+00	2.8E-05	0.0E+00	6.2E-01	0.0E+00	7.6E-06	0.0E+00	9.8E-02	0.0E+00	3.6E-07	0.0E+00
All Depths	10K330140/VP-24	Th-232	5.90E-01	7.9E-02	2.7E+00	3.4E-05	4.6E-05	1.5E-02	8.4E-01	8.2E-06	1.2E-05	9.8E-03	1.4E-01	1.2E-07	5.0E-07
All Depths	10K330140/VP-24	U-238	3.62E+00	2.0E-01	0.0E+00	1.9E-06	0.0E+00	5.9E-02	0.0E+00	5.0E-07	0.0E+00	1.3E-02	0.0E+00	3.0E-08	0.0E+00
All Depths	10K330140/VP-24	TOTAL		2.3E+00	2.7E+00	6.4E-05	4.6E-05	7.0E-01	8.4E-01	1.6E-05	1.2E-05	1.2E-01	1.4E-01	5.1E-07	5.0E-07
Sub. (>0.5 ft)	10K330223/VP-29	Pb-210	4.48E-02	1.1E-02	0.0E+00	2.5E-08	0.0E+00	1.4E-03	0.0E+00	2.9E-09	0.0E+00	1.4E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	10K330223/VP-29	Th-230	1.54E+00	4.2E-02	1.9E-01	6.4E-07	2.7E-06	8.2E-03	5.4E-02	1.4E-07	6.9E-07	5.2E-03	1.3E-02	3.7E-09	3.0E-08
Sub. (>0.5 ft)	10K330223/VP-29	TOTAL		5.2E-02	1.9E-01	6.6E-07	2.7E-06	9.6E-03	5.4E-02	1.4E-07	6.9E-07	6.5E-03	1.3E-02	4.7E-09	3.0E-08
All Depths	10K330223/VP-29	Pb-210	4.48E-02	1.1E-02	0.0E+00	2.5E-08	0.0E+00	1.4E-03	0.0E+00	2.9E-09	0.0E+00	1.4E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	10K330223/VP-29	Th-230	1.54E+00	4.2E-02	1.9E-01	6.4E-07	2.7E-06	8.2E-03	5.4E-02	1.4E-07	6.9E-07	5.2E-03	1.3E-02	3.7E-09	3.0E-08
All Depths	10K330223/VP-29	TOTAL		5.2E-02	1.9E-01	6.6E-07	2.7E-06	9.6E-03	5.4E-02	1.4E-07	6.9E-07	6.5E-03	1.3E-02	4.7E-09	3.0E-08
Sub. (>0.5 ft)	10K330232/VP-30	Pb-210	2.66E-02	6.3E-03	0.0E+00	1.5E-08	0.0E+00	8.3E-04	0.0E+00	1.7E-09	0.0E+00	8.1E-04	0.0E+00	6.4E-10	0.0E+00
Sub. (>0.5 ft)	10K330232/VP-30	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
Sub. (>0.5 ft)	10K330232/VP-30	TOTAL		1.3E-02	3.0E-02	1.1E-07	4.1E-07	2.1E-03	8.4E-03	2.3E-08	1.1E-07	1.6E-03	2.0E-03	1.2E-09	4.7E-09
All Depths	10K330232/VP-30	Pb-210	2.66E-02	6.3E-03	0.0E+00	1.5E-08	0.0E+00	8.3E-04	0.0E+00	1.7E-09	0.0E+00	8.1E-04	0.0E+00	6.4E-10	0.0E+00
All Depths	10K330232/VP-30	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
All Depths	10K330232/VP-30	TOTAL		1.3E-02	3.0E-02	1.1E-07	4.1E-07	2.1E-03	8.4E-03	2.3E-08	1.1E-07	1.6E-03	2.0E-03	1.2E-09	4.7E-09
Sub. (>0.5 ft)	10K330241/VP-32	Pb-210	1.68E-01	4.0E-02	0.0E+00	9.3E-08	0.0E+00	5.2E-03	0.0E+00	1.1E-08	0.0E+00	5.1E-03	0.0E+00	4.1E-09	0.0E+00
Sub. (>0.5 ft)	10K330241/VP-32	Th-230	1.03E+01	2.8E-01	1.3E+00	4.3E-06	1.8E-05	5.5E-02	3.6E-01	9.2E-07	4.6E-06	3.5E-02	8.7E-02	2.5E-08	2.0E-07
Sub. (>0.5 ft)	10K330241/VP-32	TOTAL		3.2E-01	1.3E+00	4.4E-06	1.8E-05	6.0E-02	3.6E-01	9.3E-07	4.6E-06	4.0E-02	8.7E-02	2.9E-08	2.0E-07
Surf. (<0.5 ft)	10K330241/VP-32	Pb-210	5.08E-02	1.2E-02	0.0E+00	2.8E-08	0.0E+00	1.6E-03	0.0E+00	3.3E-09	0.0E+00	1.5E-03	0.0E+00	1.2E-09	0.0E+00
Surf. (<0.5 ft)	10K330241/VP-32	Th-230	1.97E+00	5.4E-02	2.4E-01	8.1E-07	3.4E-06	1.0E-02	6.9E-02	1.8E-07	8.8E-07	6.6E-03	1.7E-02	4.7E-09	3.9E-08
Surf. (<0.5 ft)	10K330241/VP-32	TOTAL		6.6E-02	2.4E-01	8.4E-07	3.4E-06	1.2E-02	6.9E-02	1.8E-07	8.8E-07	8.2E-03	1.7E-02	5.9E-09	3.9E-08
All Depths	10K330241/VP-32	Pb-210	9.13E-02	2.2E-02	0.0E+00	5.0E-08	0.0E+00	2.8E-03	0.0E+00	6.0E-09	0.0E+00	2.8E-03	0.0E+00	2.2E-09	0.0E+00
All Depths	10K330241/VP-32	Th-230	4.86E+00	1.3E-01	6.0E-01	2.0E-06	8.4E-06	2.6E-02	1.7E-01	4.3E-07	2.2E-06	1.6E-02	4.1E-02	1.2E-08	9.6E-08
All Depths	10K330241/VP-32	TOTAL		1.5E-01	6.0E-01	2.1E-06	8.4E-06	2.9E-02	1.7E-01	4.4E-07	2.2E-06	1.9E-02	4.1E-02	1.4E-08	9.6E-08
Sub. (>0.5 ft)	10K330250/VP-31A	Pb-210	1.76E-01	4.2E-02	0.0E+00	9.7E-08	0.0E+00	5.5E-03	0.0E+00	1.2E-08	0.0E+00	5.4E-03	0.0E+00	4.3E-09	0.0E+00
Sub. (>0.5 ft)	10K330250/VP-31A	Th-230	1.09E+01	3.0E-01	1.4E+00	4.5E-06	1.9E-05	5.8E-02	3.8E-01	9.8E-07	4.9E-06	3.7E-02	9.3E-02	2.6E-08	2.2E-07
Sub. (>0.5 ft)	10K330250/VP-31A	TOTAL		3.4E-01	1.4E+00	4.6E-06	1.9E-05	6.4E-02	3.8E-01	9.9E-07	4.9E-06	4.2E-02	9.3E-02	3.0E-08	2.2E-07
Surf. (<0.5 ft)	10K330250/VP-31A	Pb-210	1.96E-01	4.6E-02	0.0E+00	1.1E-07	0.0E+00	6.1E-03	0.0E+00	1.3E-08	0.0E+00	6.0E-03	0.0E+00	4.7E-09	0.0E+00
Surf. (<0.5 ft)	10K330250/VP-31A	Ra-226	3.50E-01	1.3E+00	0.0E+00	1.8E-05	0.0E+00	4.0E-01	0.0E+00	4.9E-06	0.0E+00	6.3E-02	0.0E+00	2.3E-07	0.0E+00
Surf. (<0.5 ft)	10K330250/VP-31A	Th-230	1.23E+01	3.4E-01	1.5E+00	5.1E-06	2.1E-05	6.6E-02	4.3E-01	1.1E-06	5.5E-06	4.1E-02	1.0E-01	2.9E-08	2.4E-07
Surf. (<0.5 ft)	10K330250/VP-31A	Th-232	8.90E-01	1.2E-01	4.1E+00	5.1E-05	6.9E-05	2.3E-02	1.3E+00	1.2E-05	1.8E-05	1.5E-02	2.1E-01	1.8E-07	7.5E-07
Surf. (<0.5 ft)	10K330250/VP-31A	TOTAL		1.8E+00	5.6E+00	7.4E-05	9.1E-05	5.0E-01	1.7E+00	1.8E-05	2.4E-05	1.3E-01	3.2E-01	4.5E-07	1.0E-06
All Depths	10K330250/VP-31A	Pb-210	1.55E-01	3.7E-02	0.0E+00	8.6E-08	0.0E+00	4.8E-03	0.0E+00	1.0E-08	0.0E+00	4.7E-03	0.0E+00	3.7E-09	0.0E+00
All Depths	10K330250/VP-31A	Ra-226	3.50E-01	1.3E+00	0.0E+00	1.8E-05	0.0E+00	4.0E-01	0.0E+00	4.9E-06	0.0E+00	6.3E-02	0.0E+00	2.3E-07	0.0E+00
All Depths	10K330250/VP-31A	Th-230	9.44E+00	2.6E-01	1.2E+00	3.9E-06	1.6E-05	5.0E-02	3.3E-01	8.4E-07	4.2E-06	3.2E-02	8.0E-02	2.2E-08	1.9E-07
All Depths	10K330250/VP-31A	Th-232	8.90E-01	1.2E-01	4.1E+00	5.1E-05	6.9E-05	2.3E-02	1.3E+00	1.2E-05	1.8E-05	1.5E-02	2.1E-01	1.8E-07	7.5E-07
All Depths	10K330250/VP-31A	TOTAL		1.7E+00	5.3E+00	7.3E-05	8.6E-05	4.8E-01	1.6E+00	1.8E-05	2.2E-05	1.1E-01	2.9E-01	4.4E-07	9.4E-07

Attachment 12. Radiological Doses and Risks for each Property (page 10 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	10K330324/VP-34	Pb-210	4.20E-02	9.9E-03	0.0E+00	2.3E-08	0.0E+00	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.3E-03	0.0E+00	1.0E-09	0.0E+00
Sub. (>0.5 ft)	10K330324/VP-34	Th-230	1.34E+00	3.6E-02	1.7E-01	5.5E-07	2.3E-06	7.1E-03	4.7E-02	1.2E-07	6.0E-07	4.5E-03	1.1E-02	3.2E-09	2.6E-08
Sub. (>0.5 ft)	10K330324/VP-34	TOTAL		4.6E-02	1.7E-01	5.8E-07	2.3E-06	8.4E-03	4.7E-02	1.2E-07	6.0E-07	5.8E-03	1.1E-02	4.2E-09	2.6E-08
All Depths	10K330324/VP-34	Pb-210	4.20E-02	9.9E-03	0.0E+00	2.3E-08	0.0E+00	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.3E-03	0.0E+00	1.0E-09	0.0E+00
All Depths	10K330324/VP-34	Th-230	1.34E+00	3.6E-02	1.7E-01	5.5E-07	2.3E-06	7.1E-03	4.7E-02	1.2E-07	6.0E-07	4.5E-03	1.1E-02	3.2E-09	2.6E-08
All Depths	10K330324/VP-34	TOTAL		4.6E-02	1.7E-01	5.8E-07	2.3E-06	8.4E-03	4.7E-02	1.2E-07	6.0E-07	5.8E-03	1.1E-02	4.2E-09	2.6E-08
Sub. (>0.5 ft)	10K330333/VP-33	Pb-210	4.19E-02	9.9E-03	0.0E+00	2.3E-08	0.0E+00	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.3E-03	0.0E+00	1.0E-09	0.0E+00
Sub. (>0.5 ft)	10K330333/VP-33	Th-230	1.33E+00	3.6E-02	1.6E-01	5.5E-07	2.3E-06	7.1E-03	4.7E-02	1.2E-07	5.9E-07	4.5E-03	1.1E-02	3.2E-09	2.6E-08
Sub. (>0.5 ft)	10K330333/VP-33	TOTAL		4.6E-02	1.6E-01	5.7E-07	2.3E-06	8.4E-03	4.7E-02	1.2E-07	5.9E-07	5.7E-03	1.1E-02	4.2E-09	2.6E-08
All Depths	10K330333/VP-33	Pb-210	4.19E-02	9.9E-03	0.0E+00	2.3E-08	0.0E+00	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.3E-03	0.0E+00	1.0E-09	0.0E+00
All Depths	10K330333/VP-33	Th-230	1.33E+00	3.6E-02	1.6E-01	5.5E-07	2.3E-06	7.1E-03	4.7E-02	1.2E-07	5.9E-07	4.5E-03	1.1E-02	3.2E-09	2.6E-08
All Depths	10K330333/VP-33	TOTAL		4.6E-02	1.6E-01	5.7E-07	2.3E-06	8.4E-03	4.7E-02	1.2E-07	5.9E-07	5.7E-03	1.1E-02	4.2E-09	2.6E-08
Sub. (>0.5 ft)	10K330342/VP-33	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
Sub. (>0.5 ft)	10K330342/VP-33	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09
Sub. (>0.5 ft)	10K330342/VP-33	TOTAL		1.9E-02	5.4E-02	2.0E-07	7.6E-07	3.3E-03	1.5E-02	4.1E-08	2.0E-07	2.4E-03	3.7E-03	1.8E-09	8.7E-09
All Depths	10K330342/VP-33	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
All Depths	10K330342/VP-33	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09
All Depths	10K330342/VP-33	TOTAL		1.9E-02	5.4E-02	2.0E-07	7.6E-07	3.3E-03	1.5E-02	4.1E-08	2.0E-07	2.4E-03	3.7E-03	1.8E-09	8.7E-09
Sub. (>0.5 ft)	10K330351/VP-28	Pb-210	5.46E-02	1.3E-02	0.0E+00	3.0E-08	0.0E+00	1.7E-03	0.0E+00	3.6E-09	0.0E+00	1.7E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	10K330351/VP-28	Th-230	2.24E+00	6.1E-02	2.8E-01	9.3E-07	3.9E-06	1.2E-02	7.8E-02	2.0E-07	1.0E-06	7.5E-03	1.9E-02	5.3E-09	4.4E-08
Sub. (>0.5 ft)	10K330351/VP-28	TOTAL		7.4E-02	2.8E-01	9.6E-07	3.9E-06	1.4E-02	7.8E-02	2.0E-07	1.0E-06	9.2E-03	1.9E-02	6.6E-09	4.4E-08
All Depths	10K330351/VP-28	Pb-210	5.46E-02	1.3E-02	0.0E+00	3.0E-08	0.0E+00	1.7E-03	0.0E+00	3.6E-09	0.0E+00	1.7E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10K330351/VP-28	Th-230	2.24E+00	6.1E-02	2.8E-01	9.3E-07	3.9E-06	1.2E-02	7.8E-02	2.0E-07	1.0E-06	7.5E-03	1.9E-02	5.3E-09	4.4E-08
All Depths	10K330351/VP-28	TOTAL		7.4E-02	2.8E-01	9.6E-07	3.9E-06	1.4E-02	7.8E-02	2.0E-07	1.0E-06	9.2E-03	1.9E-02	6.6E-09	4.4E-08
Surf. (<0.5 ft)	10K420010/VP-9(C)	Pb-210	8.19E-02	1.9E-02	0.0E+00	4.5E-08	0.0E+00	2.6E-03	0.0E+00	5.3E-09	0.0E+00	2.5E-03	0.0E+00	2.0E-09	0.0E+00
Surf. (<0.5 ft)	10K420010/VP-9(C)	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
Surf. (<0.5 ft)	10K420010/VP-9(C)	Th-230	4.19E+00	1.1E-01	5.2E-01	1.7E-06	7.2E-06	2.2E-02	1.5E-01	3.7E-07	1.9E-06	1.4E-02	3.5E-02	1.0E-08	8.3E-08
Surf. (<0.5 ft)	10K420010/VP-9(C)	Th-232	1.40E-01	1.9E-02	6.4E-01	8.0E-06	1.1E-05	3.6E-03	2.0E-01	2.0E-06	2.9E-06	2.3E-03	3.4E-02	2.9E-08	1.2E-07
Surf. (<0.5 ft)	10K420010/VP-9(C)	U-238	9.12E+00	5.1E-01	0.0E+00	4.7E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.3E-02	0.0E+00	7.5E-08	0.0E+00
Surf. (<0.5 ft)	10K420010/VP-9(C)	TOTAL		3.4E+00	1.2E+00	5.3E-05	1.8E-05	1.0E+00	3.5E-01	1.4E-05	4.7E-06	1.9E-01	6.9E-02	6.2E-07	2.0E-07
All Depths	10K420010/VP-9(C)	Pb-210	8.19E-02	1.9E-02	0.0E+00	4.5E-08	0.0E+00	2.6E-03	0.0E+00	5.3E-09	0.0E+00	2.5E-03	0.0E+00	2.0E-09	0.0E+00
All Depths	10K420010/VP-9(C)	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
All Depths	10K420010/VP-9(C)	Th-230	4.19E+00	1.1E-01	5.2E-01	1.7E-06	7.2E-06	2.2E-02	1.5E-01	3.7E-07	1.9E-06	1.4E-02	3.5E-02	1.0E-08	8.3E-08
All Depths	10K420010/VP-9(C)	Th-232	1.40E-01	1.9E-02	6.4E-01	8.0E-06	1.1E-05	3.6E-03	2.0E-01	2.0E-06	2.9E-06	2.3E-03	3.4E-02	2.9E-08	1.2E-07
All Depths	10K420010/VP-9(C)	U-238	9.12E+00	5.1E-01	0.0E+00	4.7E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.3E-02	0.0E+00	7.5E-08	0.0E+00
All Depths	10K420010/VP-9(C)	TOTAL		3.4E+00	1.2E+00	5.3E-05	1.8E-05	1.0E+00	3.5E-01	1.4E-05	4.7E-06	1.9E-01	6.9E-02	6.2E-07	2.0E-07
Surf. (<0.5 ft)	10K430042/VP-63	Pb-210	3.64E-02	8.6E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	8.8E-10	0.0E+00
Surf. (<0.5 ft)	10K430042/VP-63	Th-230	9.40E-01	2.6E-02	1.2E-01	3.9E-07	1.6E-06	5.0E-03	3.3E-02	8.4E-08	4.2E-07	3.2E-03	8.0E-03	2.2E-09	1.9E-08
Surf. (<0.5 ft)	10K430042/VP-63	TOTAL		3.4E-02	1.2E-01	4.1E-07	1.6E-06	6.1E-03	3.3E-02	8.6E-08	4.2E-07	4.3E-03	8.0E-03	3.1E-09	1.9E-08
All Depths	10K430042/VP-63	Pb-210	3.64E-02	8.6E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	8.8E-10	0.0E+00
All Depths	10K430042/VP-63	Th-230	9.40E-01	2.6E-02	1.2E-01	3.9E-07	1.6E-06	5.0E-03	3.3E-02	8.4E-08	4.2E-07	3.2E-03	8.0E-03	2.2E-09	1.9E-08

Attachment 12. Radiological Doses and Risks for each Property (page 11 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K430042/VP-63	TOTAL		3.4E-02	1.2E-01	4.1E-07	1.6E-06	6.1E-03	3.3E-02	8.6E-08	4.2E-07	4.3E-03	8.0E-03	3.1E-09	1.9E-08
Sub. (>0.5 ft)	10K440074/VP-8(C)	Pb-210	3.25E-01	7.7E-02	0.0E+00	1.8E-07	0.0E+00	1.0E-02	0.0E+00	2.1E-08	0.0E+00	9.9E-03	0.0E+00	7.8E-09	0.0E+00
Sub. (>0.5 ft)	10K440074/VP-8(C)	Ra-226	8.80E-01	3.2E+00	0.0E+00	4.5E-05	0.0E+00	1.0E+00	0.0E+00	1.2E-05	0.0E+00	1.6E-01	0.0E+00	5.9E-07	0.0E+00
Sub. (>0.5 ft)	10K440074/VP-8(C)	Th-230	2.15E+01	5.9E-01	2.7E+00	8.9E-06	3.7E-05	1.1E-01	7.5E-01	1.9E-06	9.6E-06	7.2E-02	1.8E-01	5.1E-08	4.3E-07
Sub. (>0.5 ft)	10K440074/VP-8(C)	Th-232	6.10E-01	8.2E-02	2.8E+00	3.5E-05	4.8E-05	1.6E-02	8.7E-01	8.5E-06	1.3E-05	1.0E-02	1.5E-01	1.3E-07	5.2E-07
Sub. (>0.5 ft)	10K440074/VP-8(C)	U-238	6.29E+00	3.5E-01	0.0E+00	3.3E-06	0.0E+00	1.0E-01	0.0E+00	8.6E-07	0.0E+00	2.3E-02	0.0E+00	5.2E-08	0.0E+00
Sub. (>0.5 ft)	10K440074/VP-8(C)	TOTAL		4.3E+00	5.5E+00	9.3E-05	8.5E-05	1.3E+00	1.6E+00	2.4E-05	2.2E-05	2.7E-01	3.3E-01	8.2E-07	9.4E-07
Surf. (<0.5 ft)	10K440074/VP-8(C)	Pb-210	1.74E-01	4.1E-02	0.0E+00	9.6E-08	0.0E+00	5.4E-03	0.0E+00	1.1E-08	0.0E+00	5.3E-03	0.0E+00	4.2E-09	0.0E+00
Surf. (<0.5 ft)	10K440074/VP-8(C)	Ra-226	8.50E-01	3.1E+00	0.0E+00	4.4E-05	0.0E+00	9.8E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.7E-07	0.0E+00
Surf. (<0.5 ft)	10K440074/VP-8(C)	Th-230	1.07E+01	2.9E-01	1.3E+00	4.4E-06	1.8E-05	5.7E-02	3.8E-01	9.6E-07	4.8E-06	3.6E-02	9.1E-02	2.6E-08	2.1E-07
Surf. (<0.5 ft)	10K440074/VP-8(C)	Th-232	1.55E+00	2.1E-01	7.1E+00	8.9E-05	1.2E-04	4.0E-02	2.2E+00	2.2E-05	3.2E-05	2.6E-02	3.7E-01	3.2E-07	1.3E-06
Surf. (<0.5 ft)	10K440074/VP-8(C)	U-238	3.02E+00	1.7E-01	0.0E+00	1.6E-06	0.0E+00	4.9E-02	0.0E+00	4.2E-07	0.0E+00	1.1E-02	0.0E+00	2.5E-08	0.0E+00
Surf. (<0.5 ft)	10K440074/VP-8(C)	TOTAL		3.8E+00	8.5E+00	1.4E-04	1.4E-04	1.1E+00	2.6E+00	3.5E-05	3.7E-05	2.3E-01	4.6E-01	9.4E-07	1.5E-06
All Depths	10K440074/VP-8(C)	Pb-210	1.61E-01	3.8E-02	0.0E+00	8.9E-08	0.0E+00	5.0E-03	0.0E+00	1.0E-08	0.0E+00	4.9E-03	0.0E+00	3.9E-09	0.0E+00
All Depths	10K440074/VP-8(C)	Ra-226	6.80E-01	2.5E+00	0.0E+00	3.5E-05	0.0E+00	7.8E-01	0.0E+00	9.6E-06	0.0E+00	1.2E-01	0.0E+00	4.5E-07	0.0E+00
All Depths	10K440074/VP-8(C)	Th-230	9.84E+00	2.7E-01	1.2E+00	4.1E-06	1.7E-05	5.2E-02	3.4E-01	8.8E-07	4.4E-06	3.3E-02	8.3E-02	2.3E-08	1.9E-07
All Depths	10K440074/VP-8(C)	Th-232	1.09E+00	1.5E-01	5.0E+00	6.2E-05	8.5E-05	2.8E-02	1.6E+00	1.5E-05	2.2E-05	1.8E-02	2.6E-01	2.2E-07	9.2E-07
All Depths	10K440074/VP-8(C)	U-238	3.02E+00	1.7E-01	0.0E+00	1.6E-06	0.0E+00	4.9E-02	0.0E+00	4.2E-07	0.0E+00	1.1E-02	0.0E+00	2.5E-08	0.0E+00
All Depths	10K440074/VP-8(C)	TOTAL		3.1E+00	6.2E+00	1.0E-04	1.0E-04	9.2E-01	1.9E+00	2.6E-05	2.7E-05	1.9E-01	3.4E-01	7.3E-07	1.1E-06
Sub. (>0.5 ft)	10K440096	Ac-227	1.54E-01	2.0E-01	0.0E+00	5.4E-07	0.0E+00	5.1E-02	0.0E+00	1.6E-07	0.0E+00	1.8E-02	0.0E+00	1.4E-08	0.0E+00
Sub. (>0.5 ft)	10K440096	Pa-231	2.16E-01	9.5E-02	0.0E+00	4.6E-07	0.0E+00	1.6E-02	0.0E+00	1.1E-07	0.0E+00	1.1E-02	0.0E+00	3.6E-09	0.0E+00
Sub. (>0.5 ft)	10K440096	Pb-210	7.28E-01	1.7E-01	0.0E+00	4.0E-07	0.0E+00	2.3E-02	0.0E+00	4.7E-08	0.0E+00	2.2E-02	0.0E+00	1.8E-08	0.0E+00
Sub. (>0.5 ft)	10K440096	Ra-226	8.40E-01	3.1E+00	0.0E+00	4.3E-05	0.0E+00	9.7E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.6E-07	0.0E+00
Sub. (>0.5 ft)	10K440096	Th-230	5.03E+01	1.4E+00	6.2E+00	2.1E-05	8.7E-05	2.7E-01	1.8E+00	4.5E-06	2.2E-05	1.7E-01	4.3E-01	1.2E-07	1.0E-06
Sub. (>0.5 ft)	10K440096	Th-232	3.30E-01	4.4E-02	1.5E+00	1.9E-05	2.6E-05	8.6E-03	4.7E-01	4.6E-06	6.8E-06	5.5E-03	7.9E-02	6.8E-08	2.8E-07
Sub. (>0.5 ft)	10K440096	U-238	5.41E+00	3.1E-01	0.0E+00	2.8E-06	0.0E+00	8.8E-02	0.0E+00	7.4E-07	0.0E+00	2.0E-02	0.0E+00	4.5E-08	0.0E+00
Sub. (>0.5 ft)	10K440096	TOTAL		5.3E+00	7.8E+00	8.7E-05	1.1E-04	1.4E+00	2.2E+00	2.2E-05	2.9E-05	4.0E-01	5.1E-01	8.3E-07	1.3E-06
Surf. (<0.5 ft)	10K440096	Pb-210	1.02E-01	2.4E-02	0.0E+00	5.6E-08	0.0E+00	3.2E-03	0.0E+00	6.7E-09	0.0E+00	3.1E-03	0.0E+00	2.5E-09	0.0E+00
Surf. (<0.5 ft)	10K440096	Ra-226	5.20E-01	1.9E+00	0.0E+00	2.7E-05	0.0E+00	6.0E-01	0.0E+00	7.3E-06	0.0E+00	9.4E-02	0.0E+00	3.5E-07	0.0E+00
Surf. (<0.5 ft)	10K440096	Th-230	5.65E+00	1.5E-01	7.0E-01	2.3E-06	9.7E-06	3.0E-02	2.0E-01	5.0E-07	2.5E-06	1.9E-02	4.8E-02	1.3E-08	1.1E-07
Surf. (<0.5 ft)	10K440096	Th-232	8.70E-01	1.2E-01	4.0E+00	5.0E-05	6.8E-05	2.3E-02	1.2E+00	1.2E-05	1.8E-05	1.4E-02	2.1E-01	1.8E-07	7.3E-07
Surf. (<0.5 ft)	10K440096	U-238	3.62E+00	2.0E-01	0.0E+00	1.9E-06	0.0E+00	5.9E-02	0.0E+00	5.0E-07	0.0E+00	1.3E-02	0.0E+00	3.0E-08	0.0E+00
Surf. (<0.5 ft)	10K440096	TOTAL		2.4E+00	4.7E+00	8.1E-05	7.7E-05	7.1E-01	1.4E+00	2.0E-05	2.0E-05	1.4E-01	2.6E-01	5.7E-07	8.5E-07
All Depths	10K440096	Pb-210	1.27E-01	3.0E-02	0.0E+00	7.0E-08	0.0E+00	4.0E-03	0.0E+00	8.3E-09	0.0E+00	3.9E-03	0.0E+00	3.1E-09	0.0E+00
All Depths	10K440096	Ra-226	4.80E-01	1.7E+00	0.0E+00	2.5E-05	0.0E+00	5.5E-01	0.0E+00	6.8E-06	0.0E+00	8.7E-02	0.0E+00	3.2E-07	0.0E+00
All Depths	10K440096	Th-230	7.41E+00	2.0E-01	9.2E-01	3.1E-06	1.3E-05	3.9E-02	2.6E-01	6.6E-07	3.3E-06	2.5E-02	6.3E-02	1.8E-08	1.5E-07
All Depths	10K440096	Th-232	6.90E-01	9.2E-02	3.2E+00	3.9E-05	5.4E-05	1.8E-02	9.9E-01	9.6E-06	1.4E-05	1.1E-02	1.7E-01	1.4E-07	5.8E-07
All Depths	10K440096	U-238	3.62E+00	2.0E-01	0.0E+00	1.9E-06	0.0E+00	5.9E-02	0.0E+00	5.0E-07	0.0E+00	1.3E-02	0.0E+00	3.0E-08	0.0E+00
All Depths	10K440096	TOTAL		2.3E+00	4.1E+00	6.9E-05	6.6E-05	6.7E-01	1.2E+00	1.8E-05	1.7E-05	1.4E-01	2.3E-01	5.1E-07	7.3E-07
Surf. (<0.5 ft)	10K440104/VP-6(C)	Pb-210	2.66E-02	6.3E-03	0.0E+00	1.5E-08	0.0E+00	8.3E-04	0.0E+00	1.7E-09	0.0E+00	8.1E-04	0.0E+00	6.4E-10	0.0E+00
Surf. (<0.5 ft)	10K440104/VP-6(C)	Ra-226	4.50E-01	1.6E+00	0.0E+00	2.3E-05	0.0E+00	5.2E-01	0.0E+00	6.3E-06	0.0E+00	8.1E-02	0.0E+00	3.0E-07	0.0E+00
Surf. (<0.5 ft)	10K440104/VP-6(C)	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
Surf. (<0.5 ft)	10K440104/VP-6(C)	Th-232	6.90E-01	9.2E-02	3.2E+00	3.9E-05	5.4E-05	1.8E-02	9.9E-01	9.6E-06	1.4E-05	1.1E-02	1.7E-01	1.4E-07	5.8E-07
Surf. (<0.5 ft)	10K440104/VP-6(C)	U-238	5.62E+00	3.2E-01	0.0E+00	2.9E-06	0.0E+00	9.1E-02	0.0E+00	7.7E-07	0.0E+00	2.1E-02	0.0E+00	4.6E-08	0.0E+00
Surf. (<0.5 ft)	10K440104/VP-6(C)	TOTAL		2.1E+00	3.2E+00	6.6E-05	5.4E-05	6.3E-01	1.0E+00	1.7E-05	1.4E-05	1.2E-01	1.7E-01	4.9E-07	5.9E-07

Attachment 12. Radiological Doses and Risks for each Property (page 12 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K440104/VP-6(C)	Pb-210	2.66E-02	6.3E-03	0.0E+00	1.5E-08	0.0E+00	8.3E-04	0.0E+00	1.7E-09	0.0E+00	8.1E-04	0.0E+00	6.4E-10	0.0E+00
All Depths	10K440104/VP-6(C)	Ra-226	4.50E-01	1.6E+00	0.0E+00	2.3E-05	0.0E+00	5.2E-01	0.0E+00	6.3E-06	0.0E+00	8.1E-02	0.0E+00	3.0E-07	0.0E+00
All Depths	10K440104/VP-6(C)	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
All Depths	10K440104/VP-6(C)	Th-232	6.90E-01	9.2E-02	3.2E+00	3.9E-05	5.4E-05	1.8E-02	9.9E-01	9.6E-06	1.4E-05	1.1E-02	1.7E-01	1.4E-07	5.8E-07
All Depths	10K440104/VP-6(C)	U-238	5.62E+00	3.2E-01	0.0E+00	2.9E-06	0.0E+00	9.1E-02	0.0E+00	7.7E-07	0.0E+00	2.1E-02	0.0E+00	4.6E-08	0.0E+00
All Depths	10K440104/VP-6(C)	TOTAL		2.1E+00	3.2E+00	6.6E-05	5.4E-05	6.3E-01	1.0E+00	1.7E-05	1.4E-05	1.2E-01	1.7E-01	4.9E-07	5.9E-07
Surf. (<0.5 ft)	10K440113/VP-7(C)	Pb-210	7.28E-02	1.7E-02	0.0E+00	4.0E-08	0.0E+00	2.3E-03	0.0E+00	4.7E-09	0.0E+00	2.2E-03	0.0E+00	1.8E-09	0.0E+00
Surf. (<0.5 ft)	10K440113/VP-7(C)	Ra-226	6.50E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.5E-01	0.0E+00	9.2E-06	0.0E+00	1.2E-01	0.0E+00	4.3E-07	0.0E+00
Surf. (<0.5 ft)	10K440113/VP-7(C)	Th-230	3.54E+00	9.6E-02	4.4E-01	1.5E-06	6.1E-06	1.9E-02	1.2E-01	3.2E-07	1.6E-06	1.2E-02	3.0E-02	8.4E-09	7.0E-08
Surf. (<0.5 ft)	10K440113/VP-7(C)	Th-232	1.89E+00	2.5E-01	8.7E+00	1.1E-04	1.5E-04	4.9E-02	2.7E+00	2.6E-05	3.9E-05	3.1E-02	4.5E-01	3.9E-07	1.6E-06
Surf. (<0.5 ft)	10K440113/VP-7(C)	U-238	3.04E+01	1.7E+00	0.0E+00	1.6E-05	0.0E+00	4.9E-01	0.0E+00	4.2E-06	0.0E+00	1.1E-01	0.0E+00	2.5E-07	0.0E+00
Surf. (<0.5 ft)	10K440113/VP-7(C)	TOTAL		4.5E+00	9.1E+00	1.6E-04	1.5E-04	1.3E+00	2.8E+00	4.0E-05	4.0E-05	2.7E-01	4.8E-01	1.1E-06	1.7E-06
All Depths	10K440113/VP-7(C)	Pb-210	7.28E-02	1.7E-02	0.0E+00	4.0E-08	0.0E+00	2.3E-03	0.0E+00	4.7E-09	0.0E+00	2.2E-03	0.0E+00	1.8E-09	0.0E+00
All Depths	10K440113/VP-7(C)	Ra-226	6.50E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.5E-01	0.0E+00	9.2E-06	0.0E+00	1.2E-01	0.0E+00	4.3E-07	0.0E+00
All Depths	10K440113/VP-7(C)	Th-230	3.54E+00	9.6E-02	4.4E-01	1.5E-06	6.1E-06	1.9E-02	1.2E-01	3.2E-07	1.6E-06	1.2E-02	3.0E-02	8.4E-09	7.0E-08
All Depths	10K440113/VP-7(C)	Th-232	1.89E+00	2.5E-01	8.7E+00	1.1E-04	1.5E-04	4.9E-02	2.7E+00	2.6E-05	3.9E-05	3.1E-02	4.5E-01	3.9E-07	1.6E-06
All Depths	10K440113/VP-7(C)	U-238	3.04E+01	1.7E+00	0.0E+00	1.6E-05	0.0E+00	4.9E-01	0.0E+00	4.2E-06	0.0E+00	1.1E-01	0.0E+00	2.5E-07	0.0E+00
All Depths	10K440113/VP-7(C)	TOTAL		4.5E+00	9.1E+00	1.6E-04	1.5E-04	1.3E+00	2.8E+00	4.0E-05	4.0E-05	2.7E-01	4.8E-01	1.1E-06	1.7E-06
Sub. (>0.5 ft)	10K510067/VP-6(L)	Pb-210	9.17E-02	2.2E-02	0.0E+00	5.0E-08	0.0E+00	2.9E-03	0.0E+00	6.0E-09	0.0E+00	2.8E-03	0.0E+00	2.2E-09	0.0E+00
Sub. (>0.5 ft)	10K510067/VP-6(L)	Ra-226	7.60E-01	2.8E+00	0.0E+00	3.9E-05	0.0E+00	8.7E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.1E-07	0.0E+00
Sub. (>0.5 ft)	10K510067/VP-6(L)	Th-230	4.89E+00	1.3E-01	6.1E-01	2.0E-06	8.4E-06	2.6E-02	1.7E-01	4.4E-07	2.2E-06	1.6E-02	4.1E-02	1.2E-08	9.7E-08
Sub. (>0.5 ft)	10K510067/VP-6(L)	Th-232	2.06E+00	2.8E-01	9.5E+00	1.2E-04	1.6E-04	5.4E-02	2.9E+00	2.9E-05	4.2E-05	3.4E-02	4.9E-01	4.2E-07	1.7E-06
Sub. (>0.5 ft)	10K510067/VP-6(L)	U-238	8.12E+00	4.6E-01	0.0E+00	4.2E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	3.0E-02	0.0E+00	6.7E-08	0.0E+00
Sub. (>0.5 ft)	10K510067/VP-6(L)	TOTAL		3.7E+00	1.0E+01	1.6E-04	1.7E-04	1.1E+00	3.1E+00	4.1E-05	4.4E-05	2.2E-01	5.4E-01	1.0E-06	1.8E-06
Surf. (<0.5 ft)	10K510067/VP-6(L)	Pb-210	8.78E-02	2.1E-02	0.0E+00	4.8E-08	0.0E+00	2.7E-03	0.0E+00	5.7E-09	0.0E+00	2.7E-03	0.0E+00	2.1E-09	0.0E+00
Surf. (<0.5 ft)	10K510067/VP-6(L)	Ra-226	5.30E-01	1.9E+00	0.0E+00	2.7E-05	0.0E+00	6.1E-01	0.0E+00	7.5E-06	0.0E+00	9.6E-02	0.0E+00	3.5E-07	0.0E+00
Surf. (<0.5 ft)	10K510067/VP-6(L)	Th-230	4.61E+00	1.3E-01	5.7E-01	1.9E-06	7.9E-06	2.4E-02	1.6E-01	4.1E-07	2.1E-06	1.5E-02	3.9E-02	1.1E-08	9.1E-08
Surf. (<0.5 ft)	10K510067/VP-6(L)	Th-232	8.90E-01	1.2E-01	4.1E+00	5.1E-05	6.9E-05	2.3E-02	1.3E+00	1.2E-05	1.8E-05	1.5E-02	2.1E-01	1.8E-07	7.5E-07
Surf. (<0.5 ft)	10K510067/VP-6(L)	U-238	7.73E+00	4.4E-01	0.0E+00	4.0E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	2.8E-02	0.0E+00	6.4E-08	0.0E+00
Surf. (<0.5 ft)	10K510067/VP-6(L)	TOTAL		2.6E+00	4.7E+00	8.4E-05	7.7E-05	7.9E-01	1.4E+00	2.1E-05	2.0E-05	1.6E-01	2.5E-01	6.1E-07	8.4E-07
All Depths	10K510067/VP-6(L)	Pb-210	8.23E-02	1.9E-02	0.0E+00	4.5E-08	0.0E+00	2.6E-03	0.0E+00	5.4E-09	0.0E+00	2.5E-03	0.0E+00	2.0E-09	0.0E+00
All Depths	10K510067/VP-6(L)	Ra-226	5.30E-01	1.9E+00	0.0E+00	2.7E-05	0.0E+00	6.1E-01	0.0E+00	7.5E-06	0.0E+00	9.6E-02	0.0E+00	3.5E-07	0.0E+00
All Depths	10K510067/VP-6(L)	Th-230	4.22E+00	1.1E-01	5.2E-01	1.7E-06	7.3E-06	2.2E-02	1.5E-01	3.8E-07	1.9E-06	1.4E-02	3.6E-02	1.0E-08	8.3E-08
All Depths	10K510067/VP-6(L)	Th-232	1.00E+00	1.3E-01	4.6E+00	5.7E-05	7.8E-05	2.6E-02	1.4E+00	1.4E-05	2.1E-05	1.7E-02	2.4E-01	2.1E-07	8.4E-07
All Depths	10K510067/VP-6(L)	U-238	7.63E+00	4.3E-01	0.0E+00	4.0E-06	0.0E+00	1.2E-01	0.0E+00	1.0E-06	0.0E+00	2.8E-02	0.0E+00	6.3E-08	0.0E+00
All Depths	10K510067/VP-6(L)	TOTAL		2.6E+00	5.1E+00	9.0E-05	8.5E-05	7.8E-01	1.6E+00	2.3E-05	2.2E-05	1.6E-01	2.8E-01	6.3E-07	9.3E-07
Sub. (>0.5 ft)	10K520022/VP-3(L)	Ac-227	7.63E-02	1.0E-01	0.0E+00	2.7E-07	0.0E+00	2.5E-02	0.0E+00	7.8E-08	0.0E+00	8.8E-03	0.0E+00	6.8E-09	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Pa-231	1.27E-01	5.6E-02	0.0E+00	2.7E-07	0.0E+00	9.6E-03	0.0E+00	6.5E-08	0.0E+00	6.5E-03	0.0E+00	2.1E-09	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Pb-210	5.73E-01	1.4E-01	0.0E+00	3.2E-07	0.0E+00	1.8E-02	0.0E+00	3.7E-08	0.0E+00	1.7E-02	0.0E+00	1.4E-08	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Ra-226	1.01E+00	3.7E+00	0.0E+00	5.2E-05	0.0E+00	1.2E+00	0.0E+00	1.4E-05	0.0E+00	1.8E-01	0.0E+00	6.7E-07	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Th-230	3.92E+01	1.1E+00	4.9E+00	1.6E-05	6.8E-05	2.1E-01	1.4E+00	3.5E-06	1.7E-05	1.3E-01	3.3E-01	9.3E-08	7.8E-07
Sub. (>0.5 ft)	10K520022/VP-3(L)	Th-232	1.08E+00	1.4E-01	5.0E+00	6.2E-05	8.4E-05	2.8E-02	1.5E+00	1.5E-05	2.2E-05	1.8E-02	2.6E-01	2.2E-07	9.1E-07
Sub. (>0.5 ft)	10K520022/VP-3(L)	U-238	1.02E+01	5.8E-01	0.0E+00	5.3E-06	0.0E+00	1.7E-01	0.0E+00	1.4E-06	0.0E+00	3.7E-02	0.0E+00	8.4E-08	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	TOTAL		5.8E+00	9.8E+00	1.4E-04	1.5E-04	1.6E+00	2.9E+00	3.4E-05	4.0E-05	4.0E-01	5.9E-01	1.1E-06	1.7E-06

Attachment 12. Radiological Doses and Risks for each Property (page 13 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K520022/VP-3(L)	Ac-227	2.35E-01	3.1E-01	0.0E+00	8.2E-07	0.0E+00	7.8E-02	0.0E+00	2.4E-07	0.0E+00	2.7E-02	0.0E+00	2.1E-08	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Pa-231	3.08E-01	1.4E-01	0.0E+00	6.6E-07	0.0E+00	2.3E-02	0.0E+00	1.6E-07	0.0E+00	1.6E-02	0.0E+00	5.1E-09	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Pb-210	8.89E-01	2.1E-01	0.0E+00	4.9E-07	0.0E+00	2.8E-02	0.0E+00	5.8E-08	0.0E+00	2.7E-02	0.0E+00	2.1E-08	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Ra-226	1.14E+00	4.2E+00	0.0E+00	5.9E-05	0.0E+00	1.3E+00	0.0E+00	1.6E-05	0.0E+00	2.1E-01	0.0E+00	7.6E-07	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Th-230	6.18E+01	1.7E+00	7.7E+00	2.6E-05	1.1E-04	3.3E-01	2.2E+00	5.5E-06	2.8E-05	2.1E-01	5.2E-01	1.5E-07	1.2E-06
Surf. (<0.5 ft)	10K520022/VP-3(L)	Th-232	1.09E+00	1.5E-01	5.0E+00	6.2E-05	8.5E-05	2.8E-02	1.6E+00	1.5E-05	2.2E-05	1.8E-02	2.6E-01	2.2E-07	9.2E-07
Surf. (<0.5 ft)	10K520022/VP-3(L)	U-238	8.78E+00	5.0E-01	0.0E+00	4.6E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.2E-02	0.0E+00	7.2E-08	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	TOTAL		7.1E+00	1.3E+01	1.5E-04	1.9E-04	1.9E+00	3.7E+00	3.8E-05	5.0E-05	5.3E-01	7.8E-01	1.3E-06	2.1E-06
All Depths	10K520022/VP-3(L)	Ac-227	5.74E-02	7.6E-02	0.0E+00	2.0E-07	0.0E+00	1.9E-02	0.0E+00	5.9E-08	0.0E+00	6.6E-03	0.0E+00	5.1E-09	0.0E+00
All Depths	10K520022/VP-3(L)	Pa-231	1.06E-01	4.6E-02	0.0E+00	2.2E-07	0.0E+00	8.0E-03	0.0E+00	5.4E-08	0.0E+00	5.4E-03	0.0E+00	1.8E-09	0.0E+00
All Depths	10K520022/VP-3(L)	Pb-210	5.35E-01	1.3E-01	0.0E+00	2.9E-07	0.0E+00	1.7E-02	0.0E+00	3.5E-08	0.0E+00	1.6E-02	0.0E+00	1.3E-08	0.0E+00
All Depths	10K520022/VP-3(L)	Ra-226	9.80E-01	3.6E+00	0.0E+00	5.1E-05	0.0E+00	1.1E+00	0.0E+00	1.4E-05	0.0E+00	1.8E-01	0.0E+00	6.5E-07	0.0E+00
All Depths	10K520022/VP-3(L)	Th-230	3.65E+01	9.9E-01	4.5E+00	1.5E-05	6.3E-05	1.9E-01	1.3E+00	3.3E-06	1.6E-05	1.2E-01	3.1E-01	8.7E-08	7.2E-07
All Depths	10K520022/VP-3(L)	Th-232	1.03E+00	1.4E-01	4.7E+00	5.9E-05	8.0E-05	2.7E-02	1.5E+00	1.4E-05	2.1E-05	1.7E-02	2.5E-01	2.1E-07	8.7E-07
All Depths	10K520022/VP-3(L)	U-238	9.72E+00	5.5E-01	0.0E+00	5.1E-06	0.0E+00	1.6E-01	0.0E+00	1.3E-06	0.0E+00	3.6E-02	0.0E+00	8.0E-08	0.0E+00
All Depths	10K520022/VP-3(L)	TOTAL		5.5E+00	9.3E+00	1.3E-04	1.4E-04	1.5E+00	2.8E+00	3.3E-05	3.7E-05	3.8E-01	5.6E-01	1.1E-06	1.6E-06
Sub. (>0.5 ft)	10K520033/VP-5(L)	Pb-210	2.58E-02	6.1E-03	0.0E+00	1.4E-08	0.0E+00	8.0E-04	0.0E+00	1.7E-09	0.0E+00	7.9E-04	0.0E+00	6.2E-10	0.0E+00
Sub. (>0.5 ft)	10K520033/VP-5(L)	Ra-226	8.50E-01	3.1E+00	0.0E+00	4.4E-05	0.0E+00	9.8E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.7E-07	0.0E+00
Sub. (>0.5 ft)	10K520033/VP-5(L)	Th-230	1.80E-01	4.9E-03	2.2E-02	7.4E-08	3.1E-07	9.6E-04	6.3E-03	1.6E-08	8.0E-08	6.0E-04	1.5E-03	4.3E-10	3.6E-09
Sub. (>0.5 ft)	10K520033/VP-5(L)	Th-232	1.48E+00	2.0E-01	6.8E+00	8.5E-05	1.2E-04	3.8E-02	2.1E+00	2.1E-05	3.0E-05	2.5E-02	3.5E-01	3.0E-07	1.2E-06
Sub. (>0.5 ft)	10K520033/VP-5(L)	U-238	1.04E+01	5.9E-01	0.0E+00	5.4E-06	0.0E+00	1.7E-01	0.0E+00	1.4E-06	0.0E+00	3.8E-02	0.0E+00	8.6E-08	0.0E+00
Sub. (>0.5 ft)	10K520033/VP-5(L)	TOTAL		3.9E+00	6.8E+00	1.3E-04	1.2E-04	1.2E+00	2.1E+00	3.4E-05	3.0E-05	2.2E-01	3.6E-01	9.6E-07	1.3E-06
Surf. (<0.5 ft)	10K520033/VP-5(L)	Pb-210	1.10E-01	2.6E-02	0.0E+00	6.0E-08	0.0E+00	3.4E-03	0.0E+00	7.1E-09	0.0E+00	3.3E-03	0.0E+00	2.6E-09	0.0E+00
Surf. (<0.5 ft)	10K520033/VP-5(L)	Ra-226	6.70E-01	2.4E+00	0.0E+00	3.5E-05	0.0E+00	7.7E-01	0.0E+00	9.4E-06	0.0E+00	1.2E-01	0.0E+00	4.5E-07	0.0E+00
Surf. (<0.5 ft)	10K520033/VP-5(L)	Th-230	6.17E+00	1.7E-01	7.6E-01	2.6E-06	1.1E-05	3.3E-02	2.2E-01	5.5E-07	2.7E-06	2.1E-02	5.2E-02	1.5E-08	1.2E-07
Surf. (<0.5 ft)	10K520033/VP-5(L)	Th-232	8.50E-01	1.1E-01	3.9E+00	4.9E-05	6.6E-05	2.2E-02	1.2E+00	1.2E-05	1.7E-05	1.4E-02	2.0E-01	1.7E-07	7.2E-07
Surf. (<0.5 ft)	10K520033/VP-5(L)	U-238	8.18E+00	4.6E-01	0.0E+00	4.3E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	3.0E-02	0.0E+00	6.7E-08	0.0E+00
Surf. (<0.5 ft)	10K520033/VP-5(L)	TOTAL		3.2E+00	4.7E+00	9.0E-05	7.7E-05	9.6E-01	1.4E+00	2.3E-05	2.0E-05	1.9E-01	2.6E-01	7.1E-07	8.4E-07
All Depths	10K520033/VP-5(L)	Pb-210	3.29E-02	7.8E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	1.0E-03	0.0E+00	7.9E-10	0.0E+00
All Depths	10K520033/VP-5(L)	Ra-226	7.70E-01	2.8E+00	0.0E+00	4.0E-05	0.0E+00	8.8E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.1E-07	0.0E+00
All Depths	10K520033/VP-5(L)	Th-230	6.90E-01	1.9E-02	8.5E-02	2.9E-07	1.2E-06	3.7E-03	2.4E-02	6.2E-08	3.1E-07	2.3E-03	5.8E-03	1.6E-09	1.4E-08
All Depths	10K520033/VP-5(L)	Th-232	1.33E+00	1.8E-01	6.1E+00	7.6E-05	1.0E-04	3.5E-02	1.9E+00	1.9E-05	2.7E-05	2.2E-02	3.2E-01	2.7E-07	1.1E-06
All Depths	10K520033/VP-5(L)	U-238	9.92E+00	5.6E-01	0.0E+00	5.2E-06	0.0E+00	1.6E-01	0.0E+00	1.4E-06	0.0E+00	3.6E-02	0.0E+00	8.2E-08	0.0E+00
All Depths	10K520033/VP-5(L)	TOTAL		3.6E+00	6.2E+00	1.2E-04	1.0E-04	1.1E+00	1.9E+00	3.1E-05	2.8E-05	2.0E-01	3.2E-01	8.7E-07	1.1E-06
Sub. (>0.5 ft)	10K520044/VP-4(L)	Pb-210	1.82E-01	4.3E-02	0.0E+00	1.0E-07	0.0E+00	5.7E-03	0.0E+00	1.2E-08	0.0E+00	5.5E-03	0.0E+00	4.4E-09	0.0E+00
Sub. (>0.5 ft)	10K520044/VP-4(L)	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
Sub. (>0.5 ft)	10K520044/VP-4(L)	Th-230	1.13E+01	3.1E-01	1.4E+00	4.7E-06	2.0E-05	6.0E-02	4.0E-01	1.0E-06	5.1E-06	3.8E-02	9.6E-02	2.7E-08	2.2E-07
Sub. (>0.5 ft)	10K520044/VP-4(L)	Th-232	9.90E-01	1.3E-01	4.6E+00	5.7E-05	7.7E-05	2.6E-02	1.4E+00	1.4E-05	2.0E-05	1.6E-02	2.4E-01	2.0E-07	8.4E-07
Sub. (>0.5 ft)	10K520044/VP-4(L)	U-238	8.36E+00	4.7E-01	0.0E+00	4.4E-06	0.0E+00	1.4E-01	0.0E+00	1.1E-06	0.0E+00	3.1E-02	0.0E+00	6.9E-08	0.0E+00
Sub. (>0.5 ft)	10K520044/VP-4(L)	TOTAL		3.7E+00	6.0E+00	1.0E-04	9.7E-05	1.1E+00	1.8E+00	2.7E-05	2.5E-05	2.3E-01	3.3E-01	8.0E-07	1.1E-06
Surf. (<0.5 ft)	10K520044/VP-4(L)	Ac-227	3.76E-01	5.0E-01	0.0E+00	1.3E-06	0.0E+00	1.2E-01	0.0E+00	3.8E-07	0.0E+00	4.3E-02	0.0E+00	3.4E-08	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Pa-231	4.70E-01	2.1E-01	0.0E+00	1.0E-06	0.0E+00	3.5E-02	0.0E+00	2.4E-07	0.0E+00	2.4E-02	0.0E+00	7.8E-09	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Pb-210	1.17E+00	2.8E-01	0.0E+00	6.5E-07	0.0E+00	3.7E-02	0.0E+00	7.6E-08	0.0E+00	3.6E-02	0.0E+00	2.8E-08	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Ra-226	2.13E+00	7.8E+00	0.0E+00	1.1E-04	0.0E+00	2.4E+00	0.0E+00	3.0E-05	0.0E+00	3.9E-01	0.0E+00	1.4E-06	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Th-230	8.20E+01	2.2E+00	1.0E+01	3.4E-05	1.4E-04	4.4E-01	2.9E+00	7.3E-06	3.7E-05	2.7E-01	6.9E-01	2.0E-07	1.6E-06
Surf. (<0.5 ft)	10K520044/VP-4(L)	Th-232	7.00E-01	9.4E-02	3.2E+00	4.0E-05	5.5E-05	1.8E-02	1.0E+00	9.8E-06	1.4E-05	1.2E-02	1.7E-01	1.4E-07	5.9E-07

Attachment 12. Radiological Doses and Risks for each Property (page 14 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K520044/VP-4(L)	U-238	8.51E+00	4.8E-01	0.0E+00	4.4E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.1E-02	0.0E+00	7.0E-08	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	TOTAL		1.2E+01	1.3E+01	1.9E-04	2.0E-04	3.2E+00	3.9E+00	4.9E-05	5.1E-05	8.1E-01	8.6E-01	1.9E-06	2.2E-06
All Depths	10K520044/VP-4(L)	Pb-210	2.98E-01	7.1E-02	0.0E+00	1.6E-07	0.0E+00	9.3E-03	0.0E+00	1.9E-08	0.0E+00	9.1E-03	0.0E+00	7.2E-09	0.0E+00
All Depths	10K520044/VP-4(L)	Ra-226	9.20E-01	3.4E+00	0.0E+00	4.8E-05	0.0E+00	1.1E+00	0.0E+00	1.3E-05	0.0E+00	1.7E-01	0.0E+00	6.1E-07	0.0E+00
All Depths	10K520044/VP-4(L)	Th-230	1.96E+01	5.3E-01	2.4E+00	8.1E-06	3.4E-05	1.0E-01	6.9E-01	1.8E-06	8.8E-06	6.6E-02	1.7E-01	4.7E-08	3.9E-07
All Depths	10K520044/VP-4(L)	Th-232	8.60E-01	1.2E-01	4.0E+00	4.9E-05	6.7E-05	2.2E-02	1.2E+00	1.2E-05	1.8E-05	1.4E-02	2.1E-01	1.8E-07	7.3E-07
All Depths	10K520044/VP-4(L)	U-238	8.20E+00	4.6E-01	0.0E+00	4.3E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	3.0E-02	0.0E+00	6.7E-08	0.0E+00
All Depths	10K520044/VP-4(L)	TOTAL		4.5E+00	6.4E+00	1.1E-04	1.0E-04	1.3E+00	1.9E+00	2.8E-05	2.6E-05	2.9E-01	3.7E-01	9.1E-07	1.1E-06
Sub. (>0.5 ft)	10K520066/VP-37	Pb-210	8.83E-02	2.1E-02	0.0E+00	4.9E-08	0.0E+00	2.8E-03	0.0E+00	5.8E-09	0.0E+00	2.7E-03	0.0E+00	2.1E-09	0.0E+00
Sub. (>0.5 ft)	10K520066/VP-37	Ra-226	6.10E-01	2.2E+00	0.0E+00	3.2E-05	0.0E+00	7.0E-01	0.0E+00	8.6E-06	0.0E+00	1.1E-01	0.0E+00	4.1E-07	0.0E+00
Sub. (>0.5 ft)	10K520066/VP-37	Th-230	4.65E+00	1.3E-01	5.8E-01	1.9E-06	8.0E-06	2.5E-02	1.6E-01	4.2E-07	2.1E-06	1.6E-02	3.9E-02	1.1E-08	9.2E-08
Sub. (>0.5 ft)	10K520066/VP-37	Th-232	1.06E+00	1.4E-01	4.9E+00	6.1E-05	8.3E-05	2.8E-02	1.5E+00	1.5E-05	2.2E-05	1.8E-02	2.5E-01	2.2E-07	9.0E-07
Sub. (>0.5 ft)	10K520066/VP-37	U-238	7.85E+00	4.4E-01	0.0E+00	4.1E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	2.9E-02	0.0E+00	6.5E-08	0.0E+00
Sub. (>0.5 ft)	10K520066/VP-37	TOTAL		3.0E+00	5.5E+00	9.8E-05	9.1E-05	8.8E-01	1.7E+00	2.5E-05	2.4E-05	1.8E-01	2.9E-01	7.0E-07	9.9E-07
Surf. (<0.5 ft)	10K520066/VP-37	Ac-227	7.07E-01	9.4E-01	0.0E+00	2.5E-06	0.0E+00	2.3E-01	0.0E+00	7.2E-07	0.0E+00	8.2E-02	0.0E+00	6.3E-08	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Pa-231	8.48E-01	3.7E-01	0.0E+00	1.8E-06	0.0E+00	6.4E-02	0.0E+00	4.4E-07	0.0E+00	4.4E-02	0.0E+00	1.4E-08	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Pb-210	1.83E+00	4.3E-01	0.0E+00	1.0E-06	0.0E+00	5.7E-02	0.0E+00	1.2E-07	0.0E+00	5.6E-02	0.0E+00	4.4E-08	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Ra-226	8.90E-01	3.2E+00	0.0E+00	4.6E-05	0.0E+00	1.0E+00	0.0E+00	1.3E-05	0.0E+00	1.6E-01	0.0E+00	5.9E-07	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Th-230	1.29E+02	3.5E+00	1.6E+01	5.3E-05	2.2E-04	6.9E-01	4.5E+00	1.2E-05	5.8E-05	4.3E-01	1.1E+00	3.1E-07	2.6E-06
Surf. (<0.5 ft)	10K520066/VP-37	Th-232	1.51E+00	2.0E-01	6.9E+00	8.6E-05	1.2E-04	3.9E-02	2.2E+00	2.1E-05	3.1E-05	2.5E-02	3.6E-01	3.1E-07	1.3E-06
Surf. (<0.5 ft)	10K520066/VP-37	U-234	4.42E-01	5.7E-03	0.0E+00	1.8E-08	0.0E+00	1.1E-03	0.0E+00	2.6E-09	0.0E+00	7.1E-04	0.0E+00	6.2E-10	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	U-235	8.12E-03	2.1E-03	0.0E+00	1.6E-08	0.0E+00	6.6E-04	0.0E+00	4.4E-09	0.0E+00	1.1E-04	0.0E+00	2.3E-10	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	U-238	1.02E+01	5.8E-01	0.0E+00	5.3E-06	0.0E+00	1.7E-01	0.0E+00	1.4E-06	0.0E+00	3.7E-02	0.0E+00	8.4E-08	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	TOTAL		9.3E+00	2.3E+01	2.0E-04	3.4E-04	2.3E+00	6.7E+00	4.8E-05	8.9E-05	8.4E-01	1.5E+00	1.4E-06	3.8E-06
All Depths	10K520066/VP-37	Pb-210	3.43E-01	8.1E-02	0.0E+00	1.9E-07	0.0E+00	1.1E-02	0.0E+00	2.2E-08	0.0E+00	1.0E-02	0.0E+00	8.3E-09	0.0E+00
All Depths	10K520066/VP-37	Ra-226	5.90E-01	2.2E+00	0.0E+00	3.0E-05	0.0E+00	6.8E-01	0.0E+00	8.3E-06	0.0E+00	1.1E-01	0.0E+00	3.9E-07	0.0E+00
All Depths	10K520066/VP-37	Th-230	2.28E+01	6.2E-01	2.8E+00	9.4E-06	3.9E-05	1.2E-01	8.0E-01	2.0E-06	1.0E-05	7.7E-02	1.9E-01	5.4E-08	4.5E-07
All Depths	10K520066/VP-37	Th-232	1.04E+00	1.4E-01	4.8E+00	6.0E-05	8.1E-05	2.7E-02	1.5E+00	1.4E-05	2.1E-05	1.7E-02	2.5E-01	2.1E-07	8.8E-07
All Depths	10K520066/VP-37	U-238	7.88E+00	4.4E-01	0.0E+00	4.1E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	2.9E-02	0.0E+00	6.5E-08	0.0E+00
All Depths	10K520066/VP-37	TOTAL		3.4E+00	7.6E+00	1.0E-04	1.2E-04	9.7E-01	2.3E+00	2.6E-05	3.2E-05	2.4E-01	4.4E-01	7.3E-07	1.3E-06
Surf. (<0.5 ft)	10K520165	Pb-210	1.54E-01	3.6E-02	0.0E+00	8.5E-08	0.0E+00	4.8E-03	0.0E+00	1.0E-08	0.0E+00	4.7E-03	0.0E+00	3.7E-09	0.0E+00
Surf. (<0.5 ft)	10K520165	Ra-226	1.45E+00	5.3E+00	0.0E+00	7.5E-05	0.0E+00	1.7E+00	0.0E+00	2.0E-05	0.0E+00	2.6E-01	0.0E+00	9.7E-07	0.0E+00
Surf. (<0.5 ft)	10K520165	Th-230	9.34E+00	2.5E-01	1.2E+00	3.9E-06	1.6E-05	5.0E-02	3.3E-01	8.3E-07	4.2E-06	3.1E-02	7.9E-02	2.2E-08	1.8E-07
Surf. (<0.5 ft)	10K520165	Th-232	2.59E+00	3.5E-01	1.2E+01	1.5E-04	2.0E-04	6.7E-02	3.7E+00	3.6E-05	5.3E-05	4.3E-02	6.2E-01	5.3E-07	2.2E-06
Surf. (<0.5 ft)	10K520165	U-238	1.06E+01	6.0E-01	0.0E+00	5.5E-06	0.0E+00	1.7E-01	0.0E+00	1.5E-06	0.0E+00	3.9E-02	0.0E+00	8.7E-08	0.0E+00
Surf. (<0.5 ft)	10K520165	TOTAL		6.5E+00	1.3E+01	2.3E-04	2.2E-04	2.0E+00	4.0E+00	5.9E-05	5.7E-05	3.8E-01	7.0E-01	1.6E-06	2.4E-06
All Depths	10K520165	Pb-210	1.54E-01	3.6E-02	0.0E+00	8.5E-08	0.0E+00	4.8E-03	0.0E+00	1.0E-08	0.0E+00	4.7E-03	0.0E+00	3.7E-09	0.0E+00
All Depths	10K520165	Ra-226	1.45E+00	5.3E+00	0.0E+00	7.5E-05	0.0E+00	1.7E+00	0.0E+00	2.0E-05	0.0E+00	2.6E-01	0.0E+00	9.7E-07	0.0E+00
All Depths	10K520165	Th-230	9.34E+00	2.5E-01	1.2E+00	3.9E-06	1.6E-05	5.0E-02	3.3E-01	8.3E-07	4.2E-06	3.1E-02	7.9E-02	2.2E-08	1.8E-07
All Depths	10K520165	Th-232	2.59E+00	3.5E-01	1.2E+01	1.5E-04	2.0E-04	6.7E-02	3.7E+00	3.6E-05	5.3E-05	4.3E-02	6.2E-01	5.3E-07	2.2E-06
All Depths	10K520165	U-238	1.06E+01	6.0E-01	0.0E+00	5.5E-06	0.0E+00	1.7E-01	0.0E+00	1.5E-06	0.0E+00	3.9E-02	0.0E+00	8.7E-08	0.0E+00
All Depths	10K520165	TOTAL		6.5E+00	1.3E+01	2.3E-04	2.2E-04	2.0E+00	4.0E+00	5.9E-05	5.7E-05	3.8E-01	7.0E-01	1.6E-06	2.4E-06
Surf. (<0.5 ft)	10K530076	Pb-210	8.82E-02	2.1E-02	0.0E+00	4.9E-08	0.0E+00	2.7E-03	0.0E+00	5.8E-09	0.0E+00	2.7E-03	0.0E+00	2.1E-09	0.0E+00
Surf. (<0.5 ft)	10K530076	Th-230	4.64E+00	1.3E-01	5.7E-01	1.9E-06	8.0E-06	2.5E-02	1.6E-01	4.1E-07	2.1E-06	1.6E-02	3.9E-02	1.1E-08	9.2E-08
Surf. (<0.5 ft)	10K530076	TOTAL		1.5E-01	5.7E-01	2.0E-06	8.0E-06	2.7E-02	1.6E-01	4.2E-07	2.1E-06	1.8E-02	3.9E-02	1.3E-08	9.2E-08

Attachment 12. Radiological Doses and Risks for each Property (page 15 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K530076	Pb-210	8.82E-02	2.1E-02	0.0E+00	4.9E-08	0.0E+00	2.7E-03	0.0E+00	5.8E-09	0.0E+00	2.7E-03	0.0E+00	2.1E-09	0.0E+00
All Depths	10K530076	Th-230	4.64E+00	1.3E-01	5.7E-01	1.9E-06	8.0E-06	2.5E-02	1.6E-01	4.1E-07	2.1E-06	1.6E-02	3.9E-02	1.1E-08	9.2E-08
All Depths	10K530076	TOTAL		1.5E-01	5.7E-01	2.0E-06	8.0E-06	2.7E-02	1.6E-01	4.2E-07	2.1E-06	1.8E-02	3.9E-02	1.3E-08	9.2E-08
Sub. (>0.5 ft)	10K530087	Pb-210	8.29E-02	2.0E-02	0.0E+00	4.6E-08	0.0E+00	2.6E-03	0.0E+00	5.4E-09	0.0E+00	2.5E-03	0.0E+00	2.0E-09	0.0E+00
Sub. (>0.5 ft)	10K530087	Ra-226	5.00E-01	1.8E+00	0.0E+00	2.6E-05	0.0E+00	5.7E-01	0.0E+00	7.1E-06	0.0E+00	9.1E-02	0.0E+00	3.3E-07	0.0E+00
Sub. (>0.5 ft)	10K530087	Th-230	4.26E+00	1.2E-01	5.3E-01	1.8E-06	7.3E-06	2.3E-02	1.5E-01	3.8E-07	1.9E-06	1.4E-02	3.6E-02	1.0E-08	8.4E-08
Sub. (>0.5 ft)	10K530087	Th-232	6.50E-01	8.7E-02	3.0E+00	3.7E-05	5.1E-05	1.7E-02	9.3E-01	9.1E-06	1.3E-05	1.1E-02	1.6E-01	1.3E-07	5.5E-07
Sub. (>0.5 ft)	10K530087	U-238	7.71E+00	4.3E-01	0.0E+00	4.0E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	2.8E-02	0.0E+00	6.3E-08	0.0E+00
Sub. (>0.5 ft)	10K530087	TOTAL		2.5E+00	3.5E+00	6.9E-05	5.8E-05	7.4E-01	1.1E+00	1.8E-05	1.5E-05	1.5E-01	1.9E-01	5.4E-07	6.3E-07
Surf. (<0.5 ft)	10K530087	Ac-227	2.30E+00	3.0E+00	0.0E+00	8.0E-06	0.0E+00	7.6E-01	0.0E+00	2.3E-06	0.0E+00	2.6E-01	0.0E+00	2.0E-07	0.0E+00
Surf. (<0.5 ft)	10K530087	Pa-231	2.66E+00	1.2E+00	0.0E+00	5.7E-06	0.0E+00	2.0E-01	0.0E+00	1.4E-06	0.0E+00	1.4E-01	0.0E+00	4.5E-08	0.0E+00
Surf. (<0.5 ft)	10K530087	Pb-210	5.01E+00	1.2E+00	0.0E+00	2.8E-06	0.0E+00	1.6E-01	0.0E+00	3.3E-07	0.0E+00	1.5E-01	0.0E+00	1.2E-07	0.0E+00
Surf. (<0.5 ft)	10K530087	Ra-226	2.47E+00	9.0E+00	0.0E+00	1.3E-04	0.0E+00	2.8E+00	0.0E+00	3.5E-05	0.0E+00	4.5E-01	0.0E+00	1.6E-06	0.0E+00
Surf. (<0.5 ft)	10K530087	Th-230	3.56E+02	9.7E+00	4.4E+01	1.5E-04	6.1E-04	1.9E+00	1.2E+01	3.2E-05	1.6E-04	1.2E+00	3.0E+00	8.5E-07	7.0E-06
Surf. (<0.5 ft)	10K530087	Th-232	1.50E+00	2.0E-01	6.9E+00	8.6E-05	1.2E-04	3.9E-02	2.1E+00	2.1E-05	3.1E-05	2.5E-02	3.6E-01	3.1E-07	1.3E-06
Surf. (<0.5 ft)	10K530087	U-234	3.17E+00	4.1E-02	0.0E+00	1.3E-07	0.0E+00	7.6E-03	0.0E+00	1.9E-08	0.0E+00	5.1E-03	0.0E+00	4.4E-09	0.0E+00
Surf. (<0.5 ft)	10K530087	U-235	1.26E-01	3.3E-02	0.0E+00	2.5E-07	0.0E+00	1.0E-02	0.0E+00	6.9E-08	0.0E+00	1.7E-03	0.0E+00	3.5E-09	0.0E+00
Surf. (<0.5 ft)	10K530087	U-238	1.10E+01	6.2E-01	0.0E+00	5.7E-06	0.0E+00	1.8E-01	0.0E+00	1.5E-06	0.0E+00	4.0E-02	0.0E+00	9.1E-08	0.0E+00
Surf. (<0.5 ft)	10K530087	TOTAL		2.5E+01	5.1E+01	3.8E-04	7.3E-04	6.1E+00	1.5E+01	9.3E-05	1.9E-04	2.3E+00	3.4E+00	3.3E-06	8.3E-06
All Depths	10K530087	Ac-227	1.80E-01	2.4E-01	0.0E+00	6.3E-07	0.0E+00	5.9E-02	0.0E+00	1.8E-07	0.0E+00	2.1E-02	0.0E+00	1.6E-08	0.0E+00
All Depths	10K530087	Pa-231	2.46E-01	1.1E-01	0.0E+00	5.2E-07	0.0E+00	1.9E-02	0.0E+00	1.3E-07	0.0E+00	1.3E-02	0.0E+00	4.1E-09	0.0E+00
All Depths	10K530087	Pb-210	7.80E-01	1.8E-01	0.0E+00	4.3E-07	0.0E+00	2.4E-02	0.0E+00	5.1E-08	0.0E+00	2.4E-02	0.0E+00	1.9E-08	0.0E+00
All Depths	10K530087	Ra-226	1.15E+00	4.2E+00	0.0E+00	5.9E-05	0.0E+00	1.3E+00	0.0E+00	1.6E-05	0.0E+00	2.1E-01	0.0E+00	7.7E-07	0.0E+00
All Depths	10K530087	Th-230	5.40E+01	1.5E+00	6.7E+00	2.2E-05	9.3E-05	2.9E-01	1.9E+00	4.8E-06	2.4E-05	1.8E-01	4.6E-01	1.3E-07	1.1E-06
All Depths	10K530087	Th-232	9.30E-01	1.2E-01	4.3E+00	5.3E-05	7.2E-05	2.4E-02	1.3E+00	1.3E-05	1.9E-05	1.5E-02	2.2E-01	1.9E-07	7.9E-07
All Depths	10K530087	U-238	8.65E+00	4.9E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.2E-02	0.0E+00	7.1E-08	0.0E+00
All Depths	10K530087	TOTAL		6.8E+00	1.1E+01	1.4E-04	1.7E-04	1.9E+00	3.2E+00	3.6E-05	4.3E-05	4.9E-01	6.8E-01	1.2E-06	1.9E-06
Sub. (>0.5 ft)	10K530098/VP-1(L)	Pb-210	9.91E-02	2.3E-02	0.0E+00	5.5E-08	0.0E+00	3.1E-03	0.0E+00	6.5E-09	0.0E+00	3.0E-03	0.0E+00	2.4E-09	0.0E+00
Sub. (>0.5 ft)	10K530098/VP-1(L)	Ra-226	6.60E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.6E-01	0.0E+00	9.3E-06	0.0E+00	1.2E-01	0.0E+00	4.4E-07	0.0E+00
Sub. (>0.5 ft)	10K530098/VP-1(L)	Th-230	5.42E+00	1.5E-01	6.7E-01	2.2E-06	9.3E-06	2.9E-02	1.9E-01	4.8E-07	2.4E-06	1.8E-02	4.6E-02	1.3E-08	1.1E-07
Sub. (>0.5 ft)	10K530098/VP-1(L)	Th-232	8.40E-01	1.1E-01	3.9E+00	4.8E-05	6.5E-05	2.2E-02	1.2E+00	1.2E-05	1.7E-05	1.4E-02	2.0E-01	1.7E-07	7.1E-07
Sub. (>0.5 ft)	10K530098/VP-1(L)	U-238	4.62E+00	2.6E-01	0.0E+00	2.4E-06	0.0E+00	7.5E-02	0.0E+00	6.4E-07	0.0E+00	1.7E-02	0.0E+00	3.8E-08	0.0E+00
Sub. (>0.5 ft)	10K530098/VP-1(L)	TOTAL		2.9E+00	4.5E+00	8.7E-05	7.5E-05	8.9E-01	1.4E+00	2.2E-05	2.0E-05	1.7E-01	2.5E-01	6.7E-07	8.2E-07
Surf. (<0.5 ft)	10K530098/VP-1(L)	Ac-227	1.03E+00	1.4E+00	0.0E+00	3.6E-06	0.0E+00	3.4E-01	0.0E+00	1.1E-06	0.0E+00	1.2E-01	0.0E+00	9.2E-08	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Pa-231	1.22E+00	5.3E-01	0.0E+00	2.6E-06	0.0E+00	9.2E-02	0.0E+00	6.2E-07	0.0E+00	6.2E-02	0.0E+00	2.0E-08	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Pb-210	2.48E+00	5.9E-01	0.0E+00	1.4E-06	0.0E+00	7.7E-02	0.0E+00	1.6E-07	0.0E+00	7.6E-02	0.0E+00	6.0E-08	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Ra-226	1.49E+00	5.4E+00	0.0E+00	7.7E-05	0.0E+00	1.7E+00	0.0E+00	2.1E-05	0.0E+00	2.7E-01	0.0E+00	9.9E-07	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Th-230	1.75E+02	4.8E+00	2.2E+01	7.2E-05	3.0E-04	9.3E-01	6.1E+00	1.6E-05	7.8E-05	5.9E-01	1.5E+00	4.2E-07	3.5E-06
Surf. (<0.5 ft)	10K530098/VP-1(L)	Th-232	3.08E+00	4.1E-01	1.4E+01	1.8E-04	2.4E-04	8.0E-02	4.4E+00	4.3E-05	6.3E-05	5.1E-02	7.4E-01	6.3E-07	2.6E-06
Surf. (<0.5 ft)	10K530098/VP-1(L)	U-234	9.94E-01	1.3E-02	0.0E+00	4.0E-08	0.0E+00	2.4E-03	0.0E+00	5.9E-09	0.0E+00	1.6E-03	0.0E+00	1.4E-09	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	U-235	3.20E-02	8.4E-03	0.0E+00	6.4E-08	0.0E+00	2.6E-03	0.0E+00	1.8E-08	0.0E+00	4.4E-04	0.0E+00	9.0E-10	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	U-238	1.11E+01	6.3E-01	0.0E+00	5.8E-06	0.0E+00	1.8E-01	0.0E+00	1.5E-06	0.0E+00	4.1E-02	0.0E+00	9.2E-08	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	TOTAL		1.4E+01	3.6E+01	3.4E-04	5.4E-04	3.4E+00	1.1E+01	8.3E-05	1.4E-04	1.2E+00	2.2E+00	2.3E-06	6.1E-06
All Depths	10K530098/VP-1(L)	Ac-227	2.74E-01	3.6E-01	0.0E+00	9.6E-07	0.0E+00	9.1E-02	0.0E+00	2.8E-07	0.0E+00	3.2E-02	0.0E+00	2.4E-08	0.0E+00
All Depths	10K530098/VP-1(L)	Pa-231	3.54E-01	1.6E-01	0.0E+00	7.5E-07	0.0E+00	2.7E-02	0.0E+00	1.8E-07	0.0E+00	1.8E-02	0.0E+00	5.9E-09	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 16 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K530098/VP-1(L)	Pb-210	9.69E-01	2.3E-01	0.0E+00	5.3E-07	0.0E+00	3.0E-02	0.0E+00	6.3E-08	0.0E+00	3.0E-02	0.0E+00	2.3E-08	0.0E+00
All Depths	10K530098/VP-1(L)	Ra-226	9.20E-01	3.4E+00	0.0E+00	4.8E-05	0.0E+00	1.1E+00	0.0E+00	1.3E-05	0.0E+00	1.7E-01	0.0E+00	6.1E-07	0.0E+00
All Depths	10K530098/VP-1(L)	Th-230	6.75E+01	1.8E+00	8.4E+00	2.8E-05	1.2E-04	3.6E-01	2.4E+00	6.0E-06	3.0E-05	2.3E-01	5.7E-01	1.6E-07	1.3E-06
All Depths	10K530098/VP-1(L)	Th-232	9.70E-01	1.3E-01	4.5E+00	5.6E-05	7.6E-05	2.5E-02	1.4E+00	1.4E-05	2.0E-05	1.6E-02	2.3E-01	2.0E-07	8.2E-07
All Depths	10K530098/VP-1(L)	U-238	4.62E+00	2.6E-01	0.0E+00	2.4E-06	0.0E+00	7.5E-02	0.0E+00	6.4E-07	0.0E+00	1.7E-02	0.0E+00	3.8E-08	0.0E+00
All Depths	10K530098/VP-1(L)	TOTAL		6.3E+00	1.3E+01	1.4E-04	1.9E-04	1.7E+00	3.8E+00	3.4E-05	5.0E-05	5.1E-01	8.0E-01	1.1E-06	2.2E-06
Sub. (>0.5 ft)	10K540031/VP-41	Pb-210	3.30E-02	7.8E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.2E-09	0.0E+00	1.0E-03	0.0E+00	8.0E-10	0.0E+00
Sub. (>0.5 ft)	10K540031/VP-41	Th-230	7.00E-01	1.9E-02	8.7E-02	2.9E-07	1.2E-06	3.7E-03	2.5E-02	6.2E-08	3.1E-07	2.3E-03	5.9E-03	1.7E-09	1.4E-08
Sub. (>0.5 ft)	10K540031/VP-41	TOTAL		2.7E-02	8.7E-02	3.1E-07	1.2E-06	4.7E-03	2.5E-02	6.5E-08	3.1E-07	3.4E-03	5.9E-03	2.5E-09	1.4E-08
All Depths	10K540031/VP-41	Pb-210	3.30E-02	7.8E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.2E-09	0.0E+00	1.0E-03	0.0E+00	8.0E-10	0.0E+00
All Depths	10K540031/VP-41	Th-230	7.00E-01	1.9E-02	8.7E-02	2.9E-07	1.2E-06	3.7E-03	2.5E-02	6.2E-08	3.1E-07	2.3E-03	5.9E-03	1.7E-09	1.4E-08
All Depths	10K540031/VP-41	TOTAL		2.7E-02	8.7E-02	3.1E-07	1.2E-06	4.7E-03	2.5E-02	6.5E-08	3.1E-07	3.4E-03	5.9E-03	2.5E-09	1.4E-08
Sub. (>0.5 ft)	10K540075/VP-43	Pb-210	2.14E-02	5.1E-03	0.0E+00	1.2E-08	0.0E+00	6.7E-04	0.0E+00	1.4E-09	0.0E+00	6.5E-04	0.0E+00	5.2E-10	0.0E+00
Sub. (>0.5 ft)	10K540075/VP-43	TOTAL		5.1E-03	0.0E+00	1.2E-08	0.0E+00	6.7E-04	0.0E+00	1.4E-09	0.0E+00	6.5E-04	0.0E+00	5.2E-10	0.0E+00
All Depths	10K540075/VP-43	Pb-210	2.14E-02	5.1E-03	0.0E+00	1.2E-08	0.0E+00	6.7E-04	0.0E+00	1.4E-09	0.0E+00	6.5E-04	0.0E+00	5.2E-10	0.0E+00
All Depths	10K540075/VP-43	TOTAL		5.1E-03	0.0E+00	1.2E-08	0.0E+00	6.7E-04	0.0E+00	1.4E-09	0.0E+00	6.5E-04	0.0E+00	5.2E-10	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	Pb-210	4.96E-02	1.2E-02	0.0E+00	2.7E-08	0.0E+00	1.5E-03	0.0E+00	3.2E-09	0.0E+00	1.5E-03	0.0E+00	1.2E-09	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	Ra-226	5.50E-01	2.0E+00	0.0E+00	2.8E-05	0.0E+00	6.3E-01	0.0E+00	7.8E-06	0.0E+00	1.0E-01	0.0E+00	3.7E-07	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	Th-230	1.88E+00	5.1E-02	2.3E-01	7.8E-07	3.2E-06	1.0E-02	6.6E-02	1.7E-07	8.4E-07	6.3E-03	1.6E-02	4.5E-09	3.7E-08
Sub. (>0.5 ft)	10K540097/VP-38	Th-232	1.10E+00	1.5E-01	5.1E+00	6.3E-05	8.6E-05	2.9E-02	1.6E+00	1.5E-05	2.3E-05	1.8E-02	2.6E-01	2.3E-07	9.3E-07
Sub. (>0.5 ft)	10K540097/VP-38	U-238	9.02E+00	5.1E-01	0.0E+00	4.7E-06	0.0E+00	1.5E-01	0.0E+00	1.2E-06	0.0E+00	3.3E-02	0.0E+00	7.4E-08	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	TOTAL		2.7E+00	5.3E+00	9.7E-05	8.9E-05	8.2E-01	1.6E+00	2.4E-05	2.3E-05	1.6E-01	2.8E-01	6.7E-07	9.7E-07
Surf. (<0.5 ft)	10K540097/VP-38	Pb-210	1.89E-01	4.5E-02	0.0E+00	1.0E-07	0.0E+00	5.9E-03	0.0E+00	1.2E-08	0.0E+00	5.8E-03	0.0E+00	4.6E-09	0.0E+00
Surf. (<0.5 ft)	10K540097/VP-38	Ra-226	1.10E+00	4.0E+00	0.0E+00	5.7E-05	0.0E+00	1.3E+00	0.0E+00	1.6E-05	0.0E+00	2.0E-01	0.0E+00	7.3E-07	0.0E+00
Surf. (<0.5 ft)	10K540097/VP-38	Th-230	1.18E+01	3.2E-01	1.5E+00	4.9E-06	2.0E-05	6.3E-02	4.1E-01	1.1E-06	5.3E-06	4.0E-02	1.0E-01	2.8E-08	2.3E-07
Surf. (<0.5 ft)	10K540097/VP-38	Th-232	1.05E+00	1.4E-01	4.8E+00	6.0E-05	8.2E-05	2.7E-02	1.5E+00	1.5E-05	2.2E-05	1.7E-02	2.5E-01	2.2E-07	8.9E-07
Surf. (<0.5 ft)	10K540097/VP-38	U-238	9.42E+00	5.3E-01	0.0E+00	4.9E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.5E-02	0.0E+00	7.8E-08	0.0E+00
Surf. (<0.5 ft)	10K540097/VP-38	TOTAL		5.0E+00	6.3E+00	1.3E-04	1.0E-04	1.5E+00	1.9E+00	3.3E-05	2.7E-05	3.0E-01	3.5E-01	1.1E-06	1.1E-06
All Depths	10K540097/VP-38	Pb-210	6.43E-02	1.5E-02	0.0E+00	3.5E-08	0.0E+00	2.0E-03	0.0E+00	4.2E-09	0.0E+00	2.0E-03	0.0E+00	1.5E-09	0.0E+00
All Depths	10K540097/VP-38	Ra-226	6.20E-01	2.3E+00	0.0E+00	3.2E-05	0.0E+00	7.1E-01	0.0E+00	8.7E-06	0.0E+00	1.1E-01	0.0E+00	4.1E-07	0.0E+00
All Depths	10K540097/VP-38	Th-230	2.93E+00	8.0E-02	3.6E-01	1.2E-06	5.0E-06	1.6E-02	1.0E-01	2.6E-07	1.3E-06	9.8E-03	2.5E-02	7.0E-09	5.8E-08
All Depths	10K540097/VP-38	Th-232	1.06E+00	1.4E-01	4.9E+00	6.1E-05	8.3E-05	2.8E-02	1.5E+00	1.5E-05	2.2E-05	1.8E-02	2.5E-01	2.2E-07	9.0E-07
All Depths	10K540097/VP-38	U-238	8.92E+00	5.0E-01	0.0E+00	4.6E-06	0.0E+00	1.5E-01	0.0E+00	1.2E-06	0.0E+00	3.3E-02	0.0E+00	7.3E-08	0.0E+00
All Depths	10K540097/VP-38	TOTAL		3.0E+00	5.2E+00	9.9E-05	8.8E-05	9.0E-01	1.6E+00	2.5E-05	2.3E-05	1.7E-01	2.8E-01	7.1E-07	9.5E-07
Sub. (>0.5 ft)	10K610178/VP-35	Pb-210	3.09E-02	7.3E-03	0.0E+00	1.7E-08	0.0E+00	9.6E-04	0.0E+00	2.0E-09	0.0E+00	9.4E-04	0.0E+00	7.5E-10	0.0E+00
Sub. (>0.5 ft)	10K610178/VP-35	Ra-226	7.30E-01	2.7E+00	0.0E+00	3.8E-05	0.0E+00	8.4E-01	0.0E+00	1.0E-05	0.0E+00	1.3E-01	0.0E+00	4.9E-07	0.0E+00
Sub. (>0.5 ft)	10K610178/VP-35	Th-230	5.50E-01	1.5E-02	6.8E-02	2.3E-07	9.5E-07	2.9E-03	1.9E-02	4.9E-08	2.5E-07	1.8E-03	4.7E-03	1.3E-09	1.1E-08
Sub. (>0.5 ft)	10K610178/VP-35	Th-232	1.61E+00	2.2E-01	7.4E+00	9.2E-05	1.3E-04	4.2E-02	2.3E+00	2.2E-05	3.3E-05	2.7E-02	3.9E-01	3.3E-07	1.4E-06
Sub. (>0.5 ft)	10K610178/VP-35	U-238	1.00E+01	5.7E-01	0.0E+00	5.2E-06	0.0E+00	1.6E-01	0.0E+00	1.4E-06	0.0E+00	3.7E-02	0.0E+00	8.2E-08	0.0E+00
Sub. (>0.5 ft)	10K610178/VP-35	TOTAL		3.5E+00	7.5E+00	1.4E-04	1.3E-04	1.0E+00	2.3E+00	3.4E-05	3.3E-05	2.0E-01	3.9E-01	9.0E-07	1.4E-06
Surf. (<0.5 ft)	10K610178/VP-35	Pb-210	3.25E-02	7.7E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	9.9E-04	0.0E+00	7.8E-10	0.0E+00
Surf. (<0.5 ft)	10K610178/VP-35	Ra-226	6.70E-01	2.4E+00	0.0E+00	3.5E-05	0.0E+00	7.7E-01	0.0E+00	9.4E-06	0.0E+00	1.2E-01	0.0E+00	4.5E-07	0.0E+00
Surf. (<0.5 ft)	10K610178/VP-35	Th-230	6.60E-01	1.8E-02	8.2E-02	2.7E-07	1.1E-06	3.5E-03	2.3E-02	5.9E-08	2.9E-07	2.2E-03	5.6E-03	1.6E-09	1.3E-08

Attachment 12. Radiological Doses and Risks for each Property (page 17 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K610178/VP-35	Th-232	9.90E-01	1.3E-01	4.6E+00	5.7E-05	7.7E-05	2.6E-02	1.4E+00	1.4E-05	2.0E-05	1.6E-02	2.4E-01	2.0E-07	8.4E-07
Surf. (<0.5 ft)	10K610178/VP-35	U-238	8.67E+00	4.9E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.2E-02	0.0E+00	7.1E-08	0.0E+00
Surf. (<0.5 ft)	10K610178/VP-35	TOTAL		3.1E+00	4.6E+00	9.6E-05	7.8E-05	9.4E-01	1.4E+00	2.4E-05	2.1E-05	1.7E-01	2.4E-01	7.2E-07	8.5E-07
All Depths	10K610178/VP-35	Pb-210	3.18E-02	7.5E-03	0.0E+00	1.7E-08	0.0E+00	9.9E-04	0.0E+00	2.1E-09	0.0E+00	9.7E-04	0.0E+00	7.7E-10	0.0E+00
All Depths	10K610178/VP-35	Ra-226	6.60E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.6E-01	0.0E+00	9.3E-06	0.0E+00	1.2E-01	0.0E+00	4.4E-07	0.0E+00
All Depths	10K610178/VP-35	Th-230	6.10E-01	1.7E-02	7.6E-02	2.5E-07	1.0E-06	3.2E-03	2.1E-02	5.4E-08	2.7E-07	2.0E-03	5.2E-03	1.5E-09	1.2E-08
All Depths	10K610178/VP-35	Th-232	1.01E+00	1.4E-01	4.6E+00	5.8E-05	7.9E-05	2.6E-02	1.4E+00	1.4E-05	2.1E-05	1.7E-02	2.4E-01	2.1E-07	8.5E-07
All Depths	10K610178/VP-35	U-238	8.72E+00	4.9E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.2E-02	0.0E+00	7.2E-08	0.0E+00
All Depths	10K610178/VP-35	TOTAL		3.1E+00	4.7E+00	9.7E-05	8.0E-05	9.3E-01	1.5E+00	2.5E-05	2.1E-05	1.7E-01	2.5E-01	7.2E-07	8.7E-07
Sub. (>0.5 ft)	10K610189/VP-36	Pb-210	3.23E-02	7.7E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	9.9E-04	0.0E+00	7.8E-10	0.0E+00
Sub. (>0.5 ft)	10K610189/VP-36	Th-230	6.50E-01	1.8E-02	8.0E-02	2.7E-07	1.1E-06	3.5E-03	2.3E-02	5.8E-08	2.9E-07	2.2E-03	5.5E-03	1.5E-09	1.3E-08
Sub. (>0.5 ft)	10K610189/VP-36	TOTAL		2.5E-02	8.0E-02	2.9E-07	1.1E-06	4.5E-03	2.3E-02	6.0E-08	2.9E-07	3.2E-03	5.5E-03	2.3E-09	1.3E-08
All Depths	10K610189/VP-36	Pb-210	3.23E-02	7.7E-03	0.0E+00	1.8E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00	9.9E-04	0.0E+00	7.8E-10	0.0E+00
All Depths	10K610189/VP-36	Th-230	6.50E-01	1.8E-02	8.0E-02	2.7E-07	1.1E-06	3.5E-03	2.3E-02	5.8E-08	2.9E-07	2.2E-03	5.5E-03	1.5E-09	1.3E-08
All Depths	10K610189/VP-36	TOTAL		2.5E-02	8.0E-02	2.9E-07	1.1E-06	4.5E-03	2.3E-02	6.0E-08	2.9E-07	3.2E-03	5.5E-03	2.3E-09	1.3E-08
Surf. (<0.5 ft)	10K620412	Pb-210	9.24E-02	2.2E-02	0.0E+00	5.1E-08	0.0E+00	2.9E-03	0.0E+00	6.0E-09	0.0E+00	2.8E-03	0.0E+00	2.2E-09	0.0E+00
Surf. (<0.5 ft)	10K620412	Ra-226	6.50E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.5E-01	0.0E+00	9.2E-06	0.0E+00	1.2E-01	0.0E+00	4.3E-07	0.0E+00
Surf. (<0.5 ft)	10K620412	Th-230	4.94E+00	1.3E-01	6.1E-01	2.0E-06	8.5E-06	2.6E-02	1.7E-01	4.4E-07	2.2E-06	1.7E-02	4.2E-02	1.2E-08	9.8E-08
Surf. (<0.5 ft)	10K620412	Th-232	1.90E-01	2.5E-02	8.7E-01	1.1E-05	1.5E-05	4.9E-03	2.7E-01	2.6E-06	3.9E-06	3.2E-03	4.6E-02	3.9E-08	1.6E-07
Surf. (<0.5 ft)	10K620412	U-238	1.32E+00	7.4E-02	0.0E+00	6.9E-07	0.0E+00	2.1E-02	0.0E+00	1.8E-07	0.0E+00	4.8E-03	0.0E+00	1.1E-08	0.0E+00
Surf. (<0.5 ft)	10K620412	TOTAL		2.6E+00	1.5E+00	4.7E-05	2.3E-05	8.0E-01	4.5E-01	1.2E-05	6.1E-06	1.5E-01	8.7E-02	5.0E-07	2.6E-07
All Depths	10K620412	Pb-210	9.24E-02	2.2E-02	0.0E+00	5.1E-08	0.0E+00	2.9E-03	0.0E+00	6.0E-09	0.0E+00	2.8E-03	0.0E+00	2.2E-09	0.0E+00
All Depths	10K620412	Ra-226	6.50E-01	2.4E+00	0.0E+00	3.4E-05	0.0E+00	7.5E-01	0.0E+00	9.2E-06	0.0E+00	1.2E-01	0.0E+00	4.3E-07	0.0E+00
All Depths	10K620412	Th-230	4.94E+00	1.3E-01	6.1E-01	2.0E-06	8.5E-06	2.6E-02	1.7E-01	4.4E-07	2.2E-06	1.7E-02	4.2E-02	1.2E-08	9.8E-08
All Depths	10K620412	Th-232	1.90E-01	2.5E-02	8.7E-01	1.1E-05	1.5E-05	4.9E-03	2.7E-01	2.6E-06	3.9E-06	3.2E-03	4.6E-02	3.9E-08	1.6E-07
All Depths	10K620412	U-238	1.32E+00	7.4E-02	0.0E+00	6.9E-07	0.0E+00	2.1E-02	0.0E+00	1.8E-07	0.0E+00	4.8E-03	0.0E+00	1.1E-08	0.0E+00
All Depths	10K620412	TOTAL		2.6E+00	1.5E+00	4.7E-05	2.3E-05	8.0E-01	4.5E-01	1.2E-05	6.1E-06	1.5E-01	8.7E-02	5.0E-07	2.6E-07
Surf. (<0.5 ft)	10K620452	Pb-210	1.12E-02	2.7E-03	0.0E+00	6.2E-09	0.0E+00	3.5E-04	0.0E+00	7.3E-10	0.0E+00	3.4E-04	0.0E+00	2.7E-10	0.0E+00
Surf. (<0.5 ft)	10K620452	TOTAL		2.7E-03	0.0E+00	6.2E-09	0.0E+00	3.5E-04	0.0E+00	7.3E-10	0.0E+00	3.4E-04	0.0E+00	2.7E-10	0.0E+00
All Depths	10K620452	Pb-210	1.12E-02	2.7E-03	0.0E+00	6.2E-09	0.0E+00	3.5E-04	0.0E+00	7.3E-10	0.0E+00	3.4E-04	0.0E+00	2.7E-10	0.0E+00
All Depths	10K620452	TOTAL		2.7E-03	0.0E+00	6.2E-09	0.0E+00	3.5E-04	0.0E+00	7.3E-10	0.0E+00	3.4E-04	0.0E+00	2.7E-10	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	Pb-210	3.50E-02	8.3E-03	0.0E+00	1.9E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.4E-10	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	Ra-226	5.80E-01	2.1E+00	0.0E+00	3.0E-05	0.0E+00	6.7E-01	0.0E+00	8.2E-06	0.0E+00	1.1E-01	0.0E+00	3.9E-07	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	Th-230	8.40E-01	2.3E-02	1.0E-01	3.5E-07	1.4E-06	4.5E-03	2.9E-02	7.5E-08	3.7E-07	2.8E-03	7.1E-03	2.0E-09	1.7E-08
Sub. (>0.5 ft)	10K630363/VP-39	Th-232	1.03E+00	1.4E-01	4.7E+00	5.9E-05	8.0E-05	2.7E-02	1.5E+00	1.4E-05	2.1E-05	1.7E-02	2.5E-01	2.1E-07	8.7E-07
Sub. (>0.5 ft)	10K630363/VP-39	U-238	9.12E+00	5.1E-01	0.0E+00	4.7E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.3E-02	0.0E+00	7.5E-08	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	TOTAL		2.8E+00	4.8E+00	9.4E-05	8.2E-05	8.5E-01	1.5E+00	2.4E-05	2.2E-05	1.6E-01	2.5E-01	6.8E-07	8.9E-07
Surf. (<0.5 ft)	10K630363/VP-39	Pb-210	1.72E-01	4.1E-02	0.0E+00	9.5E-08	0.0E+00	5.4E-03	0.0E+00	1.1E-08	0.0E+00	5.3E-03	0.0E+00	4.2E-09	0.0E+00
Surf. (<0.5 ft)	10K630363/VP-39	Ra-226	2.80E-01	1.0E+00	0.0E+00	1.4E-05	0.0E+00	3.2E-01	0.0E+00	3.9E-06	0.0E+00	5.1E-02	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	10K630363/VP-39	Th-230	1.06E+01	2.9E-01	1.3E+00	4.4E-06	1.8E-05	5.6E-02	3.7E-01	9.5E-07	4.7E-06	3.6E-02	9.0E-02	2.5E-08	2.1E-07
Surf. (<0.5 ft)	10K630363/VP-39	Th-232	6.60E-01	8.8E-02	3.0E+00	3.8E-05	5.1E-05	1.7E-02	9.5E-01	9.2E-06	1.4E-05	1.1E-02	1.6E-01	1.4E-07	5.6E-07
Surf. (<0.5 ft)	10K630363/VP-39	U-238	6.71E+00	3.8E-01	0.0E+00	3.5E-06	0.0E+00	1.1E-01	0.0E+00	9.2E-07	0.0E+00	2.5E-02	0.0E+00	5.5E-08	0.0E+00
Surf. (<0.5 ft)	10K630363/VP-39	TOTAL		1.8E+00	4.4E+00	6.0E-05	7.0E-05	5.1E-01	1.3E+00	1.5E-05	1.8E-05	1.3E-01	2.5E-01	4.1E-07	7.7E-07

Attachment 12. Radiological Doses and Risks for each Property (page 18 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RESIDENTIAL Dose Year=0.0	RESIDENTIAL Dose Year=1000	RESIDENTIAL Risk Year=0.0	RESIDENTIAL Risk Year=1000	INDUSTRIAL Dose Year=0.0	INDUSTRIAL Dose Year=1000	INDUSTRIAL Risk Year=0.0	INDUSTRIAL Risk Year=1000	MAINTENANCE Dose Year=0.0	MAINTENANCE Dose Year=1000	MAINTENANCE Risk Year=0.0	MAINTENANCE Risk Year=1000
All Depths	10K630363/VP-39	Pb-210	6.22E-02	1.5E-02	0.0E+00	3.4E-08	0.0E+00	1.9E-03	0.0E+00	4.1E-09	0.0E+00	1.9E-03	0.0E+00	1.5E-09	0.0E+00
All Depths	10K630363/VP-39	Ra-226	4.80E-01	1.7E+00	0.0E+00	2.5E-05	0.0E+00	5.5E-01	0.0E+00	6.8E-06	0.0E+00	8.7E-02	0.0E+00	3.2E-07	0.0E+00
All Depths	10K630363/VP-39	Th-230	2.78E+00	7.6E-02	3.4E-01	1.1E-06	4.8E-06	1.5E-02	9.7E-02	2.5E-07	1.2E-06	9.3E-03	2.4E-02	6.6E-09	5.5E-08
All Depths	10K630363/VP-39	Th-232	9.00E-01	1.2E-01	4.1E+00	5.2E-05	7.0E-05	2.3E-02	1.3E+00	1.3E-05	1.8E-05	1.5E-02	2.2E-01	1.8E-07	7.6E-07
All Depths	10K630363/VP-39	U-238	8.37E+00	4.7E-01	0.0E+00	4.4E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.1E-02	0.0E+00	6.9E-08	0.0E+00
All Depths	10K630363/VP-39	TOTAL		2.4E+00	4.5E+00	8.2E-05	7.5E-05	7.3E-01	1.4E+00	2.1E-05	2.0E-05	1.4E-01	2.4E-01	5.8E-07	8.2E-07
Sub. (>0.5 ft)	10L220893/VP-1	Pb-210	2.52E-02	6.0E-03	0.0E+00	1.4E-08	0.0E+00	7.9E-04	0.0E+00	1.6E-09	0.0E+00	7.7E-04	0.0E+00	6.1E-10	0.0E+00
Sub. (>0.5 ft)	10L220893/VP-1	Th-230	1.40E-01	3.8E-03	1.7E-02	5.8E-08	2.4E-07	7.4E-04	4.9E-03	1.2E-08	6.2E-08	4.7E-04	1.2E-03	3.3E-10	2.8E-09
Sub. (>0.5 ft)	10L220893/VP-1	TOTAL		9.8E-03	1.7E-02	7.2E-08	2.4E-07	1.5E-03	4.9E-03	1.4E-08	6.2E-08	1.2E-03	1.2E-03	9.4E-10	2.8E-09
All Depths	10L220893/VP-1	Pb-210	2.52E-02	6.0E-03	0.0E+00	1.4E-08	0.0E+00	7.9E-04	0.0E+00	1.6E-09	0.0E+00	7.7E-04	0.0E+00	6.1E-10	0.0E+00
All Depths	10L220893/VP-1	Th-230	1.40E-01	3.8E-03	1.7E-02	5.8E-08	2.4E-07	7.4E-04	4.9E-03	1.2E-08	6.2E-08	4.7E-04	1.2E-03	3.3E-10	2.8E-09
All Depths	10L220893/VP-1	TOTAL		9.8E-03	1.7E-02	7.2E-08	2.4E-07	1.5E-03	4.9E-03	1.4E-08	6.2E-08	1.2E-03	1.2E-03	9.4E-10	2.8E-09
Sub. (>0.5 ft)	10L240093/VP-2	Pb-210	2.86E-02	6.8E-03	0.0E+00	1.6E-08	0.0E+00	8.9E-04	0.0E+00	1.9E-09	0.0E+00	8.7E-04	0.0E+00	6.9E-10	0.0E+00
Sub. (>0.5 ft)	10L240093/VP-2	Th-230	3.80E-01	1.0E-02	4.7E-02	1.6E-07	6.5E-07	2.0E-03	1.3E-02	3.4E-08	1.7E-07	1.3E-03	3.2E-03	9.0E-10	7.5E-09
Sub. (>0.5 ft)	10L240093/VP-2	TOTAL		1.7E-02	4.7E-02	1.7E-07	6.5E-07	2.9E-03	1.3E-02	3.6E-08	1.7E-07	2.1E-03	3.2E-03	1.6E-09	7.5E-09
All Depths	10L240093/VP-2	Pb-210	2.86E-02	6.8E-03	0.0E+00	1.6E-08	0.0E+00	8.9E-04	0.0E+00	1.9E-09	0.0E+00	8.7E-04	0.0E+00	6.9E-10	0.0E+00
All Depths	10L240093/VP-2	Th-230	3.80E-01	1.0E-02	4.7E-02	1.6E-07	6.5E-07	2.0E-03	1.3E-02	3.4E-08	1.7E-07	1.3E-03	3.2E-03	9.0E-10	7.5E-09
All Depths	10L240093/VP-2	TOTAL		1.7E-02	4.7E-02	1.7E-07	6.5E-07	2.9E-03	1.3E-02	3.6E-08	1.7E-07	2.1E-03	3.2E-03	1.6E-09	7.5E-09
Sub. (>0.5 ft)	10L310011/VP-13	Ac-227	1.60E-01	2.1E-01	0.0E+00	5.6E-07	0.0E+00	5.3E-02	0.0E+00	1.6E-07	0.0E+00	1.8E-02	0.0E+00	1.4E-08	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Pa-231	2.23E-01	9.8E-02	0.0E+00	4.7E-07	0.0E+00	1.7E-02	0.0E+00	1.1E-07	0.0E+00	1.1E-02	0.0E+00	3.7E-09	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Pb-210	7.41E-01	1.8E-01	0.0E+00	4.1E-07	0.0E+00	2.3E-02	0.0E+00	4.8E-08	0.0E+00	2.3E-02	0.0E+00	1.8E-08	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Ra-226	1.45E+00	5.3E+00	0.0E+00	7.5E-05	0.0E+00	1.7E+00	0.0E+00	2.0E-05	0.0E+00	2.6E-01	0.0E+00	9.7E-07	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Th-230	5.12E+01	1.4E+00	6.3E+00	2.1E-05	8.8E-05	2.7E-01	1.8E+00	4.6E-06	2.3E-05	1.7E-01	4.3E-01	1.2E-07	1.0E-06
Sub. (>0.5 ft)	10L310011/VP-13	Th-232	1.29E+00	1.7E-01	5.9E+00	7.4E-05	1.0E-04	3.4E-02	1.8E+00	1.8E-05	2.6E-05	2.1E-02	3.1E-01	2.7E-07	1.1E-06
Sub. (>0.5 ft)	10L310011/VP-13	U-238	9.42E+00	5.3E-01	0.0E+00	4.9E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.5E-02	0.0E+00	7.8E-08	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	TOTAL		7.9E+00	1.2E+01	1.8E-04	1.9E-04	2.2E+00	3.6E+00	4.5E-05	4.9E-05	5.4E-01	7.4E-01	1.5E-06	2.1E-06
Surf. (<0.5 ft)	10L310011/VP-13	Pb-210	2.94E-01	7.0E-02	0.0E+00	1.6E-07	0.0E+00	9.2E-03	0.0E+00	1.9E-08	0.0E+00	9.0E-03	0.0E+00	7.1E-09	0.0E+00
Surf. (<0.5 ft)	10L310011/VP-13	Ra-226	7.50E-01	2.7E+00	0.0E+00	3.9E-05	0.0E+00	8.6E-01	0.0E+00	1.1E-05	0.0E+00	1.4E-01	0.0E+00	5.0E-07	0.0E+00
Surf. (<0.5 ft)	10L310011/VP-13	Th-230	1.93E+01	5.3E-01	2.4E+00	8.0E-06	3.3E-05	1.0E-01	6.8E-01	1.7E-06	8.6E-06	6.5E-02	1.6E-01	4.6E-08	3.8E-07
Surf. (<0.5 ft)	10L310011/VP-13	Th-232	1.90E-01	2.5E-02	8.7E-01	1.1E-05	1.5E-05	4.9E-03	2.7E-01	2.6E-06	3.9E-06	3.2E-03	4.6E-02	3.9E-08	1.6E-07
Surf. (<0.5 ft)	10L310011/VP-13	TOTAL		3.4E+00	3.3E+00	5.8E-05	4.8E-05	9.8E-01	9.5E-01	1.5E-05	1.3E-05	2.1E-01	2.1E-01	5.9E-07	5.4E-07
All Depths	10L310011/VP-13	Ac-227	1.54E-01	2.0E-01	0.0E+00	5.4E-07	0.0E+00	5.1E-02	0.0E+00	1.6E-07	0.0E+00	1.8E-02	0.0E+00	1.4E-08	0.0E+00
All Depths	10L310011/VP-13	Pa-231	2.16E-01	9.5E-02	0.0E+00	4.6E-07	0.0E+00	1.6E-02	0.0E+00	1.1E-07	0.0E+00	1.1E-02	0.0E+00	3.6E-09	0.0E+00
All Depths	10L310011/VP-13	Pb-210	7.28E-01	1.7E-01	0.0E+00	4.0E-07	0.0E+00	2.3E-02	0.0E+00	4.7E-08	0.0E+00	2.2E-02	0.0E+00	1.8E-08	0.0E+00
All Depths	10L310011/VP-13	Ra-226	1.36E+00	5.0E+00	0.0E+00	7.0E-05	0.0E+00	1.6E+00	0.0E+00	1.9E-05	0.0E+00	2.5E-01	0.0E+00	9.1E-07	0.0E+00
All Depths	10L310011/VP-13	Th-230	5.03E+01	1.4E+00	6.2E+00	2.1E-05	8.7E-05	2.7E-01	1.8E+00	4.5E-06	2.2E-05	1.7E-01	4.3E-01	1.2E-07	1.0E-06
All Depths	10L310011/VP-13	Th-232	1.20E+00	1.6E-01	5.5E+00	6.9E-05	9.3E-05	3.1E-02	1.7E+00	1.7E-05	2.5E-05	2.0E-02	2.9E-01	2.5E-07	1.0E-06
All Depths	10L310011/VP-13	U-238	9.82E+00	5.5E-01	0.0E+00	5.1E-06	0.0E+00	1.6E-01	0.0E+00	1.4E-06	0.0E+00	3.6E-02	0.0E+00	8.1E-08	0.0E+00
All Depths	10L310011/VP-13	TOTAL		7.5E+00	1.2E+01	1.7E-04	1.8E-04	2.1E+00	3.5E+00	4.2E-05	4.7E-05	5.2E-01	7.1E-01	1.4E-06	2.0E-06
Sub. (>0.5 ft)	10L330022/VP-8	Pb-210	1.61E-01	3.8E-02	0.0E+00	8.9E-08	0.0E+00	5.0E-03	0.0E+00	1.0E-08	0.0E+00	4.9E-03	0.0E+00	3.9E-09	0.0E+00
Sub. (>0.5 ft)	10L330022/VP-8	Th-230	9.84E+00	2.7E-01	1.2E+00	4.1E-06	1.7E-05	5.2E-02	3.4E-01	8.8E-07	4.4E-06	3.3E-02	8.3E-02	2.3E-08	1.9E-07
Sub. (>0.5 ft)	10L330022/VP-8	TOTAL		3.1E-01	1.2E+00	4.2E-06	1.7E-05	5.7E-02	3.4E-01	8.9E-07	4.4E-06	3.8E-02	8.3E-02	2.7E-08	1.9E-07

Attachment 12. Radiological Doses and Risks for each Property (page 19 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10L330022/VP-8	Pb-210	1.61E-01	3.8E-02	0.0E+00	8.9E-08	0.0E+00	5.0E-03	0.0E+00	1.0E-08	0.0E+00	4.9E-03	0.0E+00	3.9E-09	0.0E+00
All Depths	10L330022/VP-8	Th-230	9.84E+00	2.7E-01	1.2E+00	4.1E-06	1.7E-05	5.2E-02	3.4E-01	8.8E-07	4.4E-06	3.3E-02	8.3E-02	2.3E-08	1.9E-07
All Depths	10L330022/VP-8	TOTAL		3.1E-01	1.2E+00	4.2E-06	1.7E-05	5.7E-02	3.4E-01	8.9E-07	4.4E-06	3.8E-02	8.3E-02	2.7E-08	1.9E-07
Sub. (>0.5 ft)	10L330031/VP-7	Pb-210	1.60E-01	3.8E-02	0.0E+00	8.8E-08	0.0E+00	5.0E-03	0.0E+00	1.0E-08	0.0E+00	4.9E-03	0.0E+00	3.8E-09	0.0E+00
Sub. (>0.5 ft)	10L330031/VP-7	Th-230	9.74E+00	2.6E-01	1.2E+00	4.0E-06	1.7E-05	5.2E-02	3.4E-01	8.7E-07	4.3E-06	3.3E-02	8.2E-02	2.3E-08	1.9E-07
Sub. (>0.5 ft)	10L330031/VP-7	TOTAL		3.0E-01	1.2E+00	4.1E-06	1.7E-05	5.7E-02	3.4E-01	8.8E-07	4.3E-06	3.8E-02	8.2E-02	2.7E-08	1.9E-07
All Depths	10L330031/VP-7	Pb-210	1.60E-01	3.8E-02	0.0E+00	8.8E-08	0.0E+00	5.0E-03	0.0E+00	1.0E-08	0.0E+00	4.9E-03	0.0E+00	3.8E-09	0.0E+00
All Depths	10L330031/VP-7	Th-230	9.74E+00	2.6E-01	1.2E+00	4.0E-06	1.7E-05	5.2E-02	3.4E-01	8.7E-07	4.3E-06	3.3E-02	8.2E-02	2.3E-08	1.9E-07
All Depths	10L330031/VP-7	TOTAL		3.0E-01	1.2E+00	4.1E-06	1.7E-05	5.7E-02	3.4E-01	8.8E-07	4.3E-06	3.8E-02	8.2E-02	2.7E-08	1.9E-07
Sub. (>0.5 ft)	10L330040/VP-6	Pb-210	3.57E-02	8.5E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.6E-10	0.0E+00
Sub. (>0.5 ft)	10L330040/VP-6	Th-230	8.90E-01	2.4E-02	1.1E-01	3.7E-07	1.5E-06	4.7E-03	3.1E-02	7.9E-08	4.0E-07	3.0E-03	7.5E-03	2.1E-09	1.8E-08
Sub. (>0.5 ft)	10L330040/VP-6	TOTAL		3.3E-02	1.1E-01	3.9E-07	1.5E-06	5.8E-03	3.1E-02	8.2E-08	4.0E-07	4.1E-03	7.5E-03	3.0E-09	1.8E-08
All Depths	10L330040/VP-6	Pb-210	3.57E-02	8.5E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.6E-10	0.0E+00
All Depths	10L330040/VP-6	Th-230	8.90E-01	2.4E-02	1.1E-01	3.7E-07	1.5E-06	4.7E-03	3.1E-02	7.9E-08	4.0E-07	3.0E-03	7.5E-03	2.1E-09	1.8E-08
All Depths	10L330040/VP-6	TOTAL		3.3E-02	1.1E-01	3.9E-07	1.5E-06	5.8E-03	3.1E-02	8.2E-08	4.0E-07	4.1E-03	7.5E-03	3.0E-09	1.8E-08
Sub. (>0.5 ft)	10L330073/VP-9	Pb-210	1.68E-01	4.0E-02	0.0E+00	9.3E-08	0.0E+00	5.2E-03	0.0E+00	1.1E-08	0.0E+00	5.1E-03	0.0E+00	4.1E-09	0.0E+00
Sub. (>0.5 ft)	10L330073/VP-9	Th-230	1.03E+01	2.8E-01	1.3E+00	4.3E-06	1.8E-05	5.5E-02	3.6E-01	9.2E-07	4.6E-06	3.5E-02	8.7E-02	2.5E-08	2.0E-07
Sub. (>0.5 ft)	10L330073/VP-9	TOTAL		3.2E-01	1.3E+00	4.4E-06	1.8E-05	6.0E-02	3.6E-01	9.3E-07	4.6E-06	4.0E-02	8.7E-02	2.9E-08	2.0E-07
All Depths	10L330073/VP-9	Pb-210	1.68E-01	4.0E-02	0.0E+00	9.3E-08	0.0E+00	5.2E-03	0.0E+00	1.1E-08	0.0E+00	5.1E-03	0.0E+00	4.1E-09	0.0E+00
All Depths	10L330073/VP-9	Th-230	1.03E+01	2.8E-01	1.3E+00	4.3E-06	1.8E-05	5.5E-02	3.6E-01	9.2E-07	4.6E-06	3.5E-02	8.7E-02	2.5E-08	2.0E-07
All Depths	10L330073/VP-9	TOTAL		3.2E-01	1.3E+00	4.4E-06	1.8E-05	6.0E-02	3.6E-01	9.3E-07	4.6E-06	4.0E-02	8.7E-02	2.9E-08	2.0E-07
Sub. (>0.5 ft)	10L330114/VP-4,5	Pb-210	3.49E-02	8.3E-03	0.0E+00	1.9E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.4E-10	0.0E+00
Sub. (>0.5 ft)	10L330114/VP-4,5	Th-230	8.30E-01	2.3E-02	1.0E-01	3.4E-07	1.4E-06	4.4E-03	2.9E-02	7.4E-08	3.7E-07	2.8E-03	7.0E-03	2.0E-09	1.6E-08
Sub. (>0.5 ft)	10L330114/VP-4,5	TOTAL		3.1E-02	1.0E-01	3.6E-07	1.4E-06	5.5E-03	2.9E-02	7.6E-08	3.7E-07	3.8E-03	7.0E-03	2.8E-09	1.6E-08
All Depths	10L330114/VP-4,5	Pb-210	3.49E-02	8.3E-03	0.0E+00	1.9E-08	0.0E+00	1.1E-03	0.0E+00	2.3E-09	0.0E+00	1.1E-03	0.0E+00	8.4E-10	0.0E+00
All Depths	10L330114/VP-4,5	Th-230	8.30E-01	2.3E-02	1.0E-01	3.4E-07	1.4E-06	4.4E-03	2.9E-02	7.4E-08	3.7E-07	2.8E-03	7.0E-03	2.0E-09	1.6E-08
All Depths	10L330114/VP-4,5	TOTAL		3.1E-02	1.0E-01	3.6E-07	1.4E-06	5.5E-03	2.9E-02	7.6E-08	3.7E-07	3.8E-03	7.0E-03	2.8E-09	1.6E-08
Sub. (>0.5 ft)	10L330123/VP-3	Pb-210	5.46E-02	1.3E-02	0.0E+00	3.0E-08	0.0E+00	1.7E-03	0.0E+00	3.6E-09	0.0E+00	1.7E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	10L330123/VP-3	Th-230	2.24E+00	6.1E-02	2.8E-01	9.3E-07	3.9E-06	1.2E-02	7.8E-02	2.0E-07	1.0E-06	7.5E-03	1.9E-02	5.3E-09	4.4E-08
Sub. (>0.5 ft)	10L330123/VP-3	TOTAL		7.4E-02	2.8E-01	9.6E-07	3.9E-06	1.4E-02	7.8E-02	2.0E-07	1.0E-06	9.2E-03	1.9E-02	6.6E-09	4.4E-08
All Depths	10L330123/VP-3	Pb-210	5.46E-02	1.3E-02	0.0E+00	3.0E-08	0.0E+00	1.7E-03	0.0E+00	3.6E-09	0.0E+00	1.7E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10L330123/VP-3	Th-230	2.24E+00	6.1E-02	2.8E-01	9.3E-07	3.9E-06	1.2E-02	7.8E-02	2.0E-07	1.0E-06	7.5E-03	1.9E-02	5.3E-09	4.4E-08
All Depths	10L330123/VP-3	TOTAL		7.4E-02	2.8E-01	9.6E-07	3.9E-06	1.4E-02	7.8E-02	2.0E-07	1.0E-06	9.2E-03	1.9E-02	6.6E-09	4.4E-08
Sub. (>0.5 ft)	10L340041/VP-40A	Pb-210	3.23E-01	7.7E-02	0.0E+00	1.8E-07	0.0E+00	1.0E-02	0.0E+00	2.1E-08	0.0E+00	9.9E-03	0.0E+00	7.8E-09	0.0E+00
Sub. (>0.5 ft)	10L340041/VP-40A	Ra-226	2.13E+00	7.8E+00	0.0E+00	1.1E-04	0.0E+00	2.4E+00	0.0E+00	3.0E-05	0.0E+00	3.9E-01	0.0E+00	1.4E-06	0.0E+00
Sub. (>0.5 ft)	10L340041/VP-40A	Th-230	2.14E+01	5.8E-01	2.7E+00	8.9E-06	3.7E-05	1.1E-01	7.5E-01	1.9E-06	9.6E-06	7.2E-02	1.8E-01	5.1E-08	4.2E-07
Sub. (>0.5 ft)	10L340041/VP-40A	Th-232	7.90E-01	1.1E-01	3.6E+00	4.5E-05	6.2E-05	2.1E-02	1.1E+00	1.1E-05	1.6E-05	1.3E-02	1.9E-01	1.6E-07	6.7E-07
Sub. (>0.5 ft)	10L340041/VP-40A	U-238	8.10E+00	4.6E-01	0.0E+00	4.2E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	3.0E-02	0.0E+00	6.7E-08	0.0E+00
Sub. (>0.5 ft)	10L340041/VP-40A	TOTAL		9.0E+00	6.3E+00	1.7E-04	9.8E-05	2.7E+00	1.9E+00	4.4E-05	2.6E-05	5.1E-01	3.7E-01	1.7E-06	1.1E-06
Surf. (<0.5 ft)	10L340041/VP-40A	Ac-227	1.20E-01	1.6E-01	0.0E+00	4.2E-07	0.0E+00	4.0E-02	0.0E+00	1.2E-07	0.0E+00	1.4E-02	0.0E+00	1.1E-08	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 20 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10L340041/VP-40A	Pb-210	4.69E+00	1.1E+00	0.0E+00	2.6E-06	0.0E+00	1.5E-01	0.0E+00	3.1E-07	0.0E+00	1.4E-01	0.0E+00	1.1E-07	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	Ra-226	1.34E+01	4.9E+01	0.0E+00	6.9E-04	0.0E+00	1.5E+01	0.0E+00	1.9E-04	0.0E+00	2.4E+00	0.0E+00	8.9E-06	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	Th-230	3.33E+02	9.1E+00	4.1E+01	1.4E-04	5.7E-04	1.8E+00	1.2E+01	3.0E-05	1.5E-04	1.1E+00	2.8E+00	7.9E-07	6.6E-06
Surf. (<0.5 ft)	10L340041/VP-40A	Th-232	9.50E-01	1.3E-01	4.4E+00	5.4E-05	7.4E-05	2.5E-02	1.4E+00	1.3E-05	2.0E-05	1.6E-02	2.3E-01	2.0E-07	8.0E-07
Surf. (<0.5 ft)	10L340041/VP-40A	U-234	2.89E+00	3.7E-02	0.0E+00	1.2E-07	0.0E+00	6.9E-03	0.0E+00	1.7E-08	0.0E+00	4.7E-03	0.0E+00	4.1E-09	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	U-235	1.28E-01	3.4E-02	0.0E+00	2.6E-07	0.0E+00	1.0E-02	0.0E+00	7.0E-08	0.0E+00	1.8E-03	0.0E+00	3.6E-09	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	U-238	1.19E+01	6.7E-01	0.0E+00	6.2E-06	0.0E+00	1.9E-01	0.0E+00	1.6E-06	0.0E+00	4.4E-02	0.0E+00	9.8E-08	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	TOTAL		6.0E+01	4.6E+01	8.9E-04	6.5E-04	1.8E+01	1.3E+01	2.3E-04	1.7E-04	3.8E+00	3.0E+00	1.0E-05	7.4E-06
All Depths	10L340041/VP-40A	Ac-227	1.20E-01	1.6E-01	0.0E+00	4.2E-07	0.0E+00	4.0E-02	0.0E+00	1.2E-07	0.0E+00	1.4E-02	0.0E+00	1.1E-08	0.0E+00
All Depths	10L340041/VP-40A	Pb-210	2.53E+00	6.0E-01	0.0E+00	1.4E-06	0.0E+00	7.9E-02	0.0E+00	1.7E-07	0.0E+00	7.7E-02	0.0E+00	6.1E-08	0.0E+00
All Depths	10L340041/VP-40A	Ra-226	6.61E+00	2.4E+01	0.0E+00	3.4E-04	0.0E+00	7.6E+00	0.0E+00	9.3E-05	0.0E+00	1.2E+00	0.0E+00	4.4E-06	0.0E+00
All Depths	10L340041/VP-40A	Th-230	1.79E+02	4.9E+00	2.2E+01	7.4E-05	3.1E-04	9.5E-01	6.3E+00	1.6E-05	8.0E-05	6.0E-01	1.5E+00	4.3E-07	3.5E-06
All Depths	10L340041/VP-40A	Th-232	8.30E-01	1.1E-01	3.8E+00	4.8E-05	6.5E-05	2.2E-02	1.2E+00	1.2E-05	1.7E-05	1.4E-02	2.0E-01	1.7E-07	7.0E-07
All Depths	10L340041/VP-40A	U-234	1.04E+00	1.3E-02	0.0E+00	4.2E-08	0.0E+00	2.5E-03	0.0E+00	6.2E-09	0.0E+00	1.7E-03	0.0E+00	1.5E-09	0.0E+00
All Depths	10L340041/VP-40A	U-235	1.28E-01	3.4E-02	0.0E+00	2.6E-07	0.0E+00	1.0E-02	0.0E+00	7.0E-08	0.0E+00	1.8E-03	0.0E+00	3.6E-09	0.0E+00
All Depths	10L340041/VP-40A	U-238	9.42E+00	5.3E-01	0.0E+00	4.9E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.5E-02	0.0E+00	7.8E-08	0.0E+00
All Depths	10L340041/VP-40A	TOTAL		3.0E+01	2.6E+01	4.7E-04	3.7E-04	8.9E+00	7.5E+00	1.2E-04	9.7E-05	1.9E+00	1.7E+00	5.2E-06	4.2E-06
Sub. (>0.5 ft)	10L340142/VP-12	Pb-210	1.16E-01	2.7E-02	0.0E+00	6.4E-08	0.0E+00	3.6E-03	0.0E+00	7.6E-09	0.0E+00	3.5E-03	0.0E+00	2.8E-09	0.0E+00
Sub. (>0.5 ft)	10L340142/VP-12	Ra-226	8.40E-01	3.1E+00	0.0E+00	4.3E-05	0.0E+00	9.7E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.6E-07	0.0E+00
Sub. (>0.5 ft)	10L340142/VP-12	Th-230	6.61E+00	1.8E-01	8.2E-01	2.7E-06	1.1E-05	3.5E-02	2.3E-01	5.9E-07	2.9E-06	2.2E-02	5.6E-02	1.6E-08	1.3E-07
Sub. (>0.5 ft)	10L340142/VP-12	Th-232	8.00E-01	1.1E-01	3.7E+00	4.6E-05	6.2E-05	2.1E-02	1.1E+00	1.1E-05	1.6E-05	1.3E-02	1.9E-01	1.6E-07	6.8E-07
Sub. (>0.5 ft)	10L340142/VP-12	U-238	1.02E+01	5.8E-01	0.0E+00	5.3E-06	0.0E+00	1.7E-01	0.0E+00	1.4E-06	0.0E+00	3.7E-02	0.0E+00	8.4E-08	0.0E+00
Sub. (>0.5 ft)	10L340142/VP-12	TOTAL		4.0E+00	4.5E+00	9.7E-05	7.4E-05	1.2E+00	1.4E+00	2.5E-05	1.9E-05	2.3E-01	2.5E-01	8.3E-07	8.1E-07
Surf. (<0.5 ft)	10L340142/VP-12	Ac-227	1.75E+00	2.3E+00	0.0E+00	6.1E-06	0.0E+00	5.8E-01	0.0E+00	1.8E-06	0.0E+00	2.0E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Pa-231	2.04E+00	9.0E-01	0.0E+00	4.3E-06	0.0E+00	1.5E-01	0.0E+00	1.0E-06	0.0E+00	1.0E-01	0.0E+00	3.4E-08	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Pb-210	3.92E+00	9.3E-01	0.0E+00	2.2E-06	0.0E+00	1.2E-01	0.0E+00	2.6E-07	0.0E+00	1.2E-01	0.0E+00	9.5E-08	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Ra-226	2.45E+00	8.9E+00	0.0E+00	1.3E-04	0.0E+00	2.8E+00	0.0E+00	3.5E-05	0.0E+00	4.4E-01	0.0E+00	1.6E-06	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Th-230	2.78E+02	7.6E+00	3.4E+01	1.2E-04	4.8E-04	1.5E+00	9.7E+00	2.5E-05	1.2E-04	9.3E-01	2.4E+00	6.6E-07	5.5E-06
Surf. (<0.5 ft)	10L340142/VP-12	Th-232	8.10E-01	1.1E-01	3.7E+00	4.6E-05	6.3E-05	2.1E-02	1.2E+00	1.1E-05	1.7E-05	1.3E-02	1.9E-01	1.7E-07	6.8E-07
Surf. (<0.5 ft)	10L340142/VP-12	U-234	2.23E+00	2.9E-02	0.0E+00	8.9E-08	0.0E+00	5.3E-03	0.0E+00	1.3E-08	0.0E+00	3.6E-03	0.0E+00	3.1E-09	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	U-235	8.56E-02	2.2E-02	0.0E+00	1.7E-07	0.0E+00	7.0E-03	0.0E+00	4.7E-08	0.0E+00	1.2E-03	0.0E+00	2.4E-09	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	U-238	8.61E+00	4.9E-01	0.0E+00	4.5E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.2E-02	0.0E+00	7.1E-08	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	TOTAL		2.1E+01	3.8E+01	3.1E-04	5.4E-04	5.3E+00	1.1E+01	7.5E-05	1.4E-04	1.9E+00	2.5E+00	2.8E-06	6.2E-06
All Depths	10L340142/VP-12	Ac-227	9.10E-03	1.2E-02	0.0E+00	3.2E-08	0.0E+00	3.0E-03	0.0E+00	9.3E-09	0.0E+00	1.1E-03	0.0E+00	8.1E-10	0.0E+00
All Depths	10L340142/VP-12	Pa-231	5.04E-02	2.2E-02	0.0E+00	1.1E-07	0.0E+00	3.8E-03	0.0E+00	2.6E-08	0.0E+00	2.6E-03	0.0E+00	8.4E-10	0.0E+00
All Depths	10L340142/VP-12	Pb-210	4.38E-01	1.0E-01	0.0E+00	2.4E-07	0.0E+00	1.4E-02	0.0E+00	2.9E-08	0.0E+00	1.3E-02	0.0E+00	1.1E-08	0.0E+00
All Depths	10L340142/VP-12	Ra-226	9.20E-01	3.4E+00	0.0E+00	4.8E-05	0.0E+00	1.1E+00	0.0E+00	1.3E-05	0.0E+00	1.7E-01	0.0E+00	6.1E-07	0.0E+00
All Depths	10L340142/VP-12	Th-230	2.96E+01	8.1E-01	3.7E+00	1.2E-05	5.1E-05	1.6E-01	1.0E+00	2.6E-06	1.3E-05	9.9E-02	2.5E-01	7.1E-08	5.9E-07
All Depths	10L340142/VP-12	Th-232	7.10E-01	9.5E-02	3.3E+00	4.1E-05	5.5E-05	1.8E-02	1.0E+00	9.9E-06	1.5E-05	1.2E-02	1.7E-01	1.5E-07	6.0E-07
All Depths	10L340142/VP-12	U-238	9.32E+00	5.3E-01	0.0E+00	4.9E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.4E-02	0.0E+00	7.7E-08	0.0E+00
All Depths	10L340142/VP-12	TOTAL		4.9E+00	6.9E+00	1.1E-04	1.1E-04	1.4E+00	2.1E+00	2.7E-05	2.8E-05	3.3E-01	4.2E-01	9.2E-07	1.2E-06
Sub. (>0.5 ft)	10L340151/VP-10,11	Pb-210	7.70E-02	1.8E-02	0.0E+00	4.2E-08	0.0E+00	2.4E-03	0.0E+00	5.0E-09	0.0E+00	2.3E-03	0.0E+00	1.9E-09	0.0E+00
Sub. (>0.5 ft)	10L340151/VP-10,11	Th-230	3.84E+00	1.0E-01	4.8E-01	1.6E-06	6.6E-06	2.0E-02	1.3E-01	3.4E-07	1.7E-06	1.3E-02	3.2E-02	9.1E-09	7.6E-08
Sub. (>0.5 ft)	10L340151/VP-10,11	TOTAL		1.2E-01	4.8E-01	1.6E-06	6.6E-06	2.3E-02	1.3E-01	3.5E-07	1.7E-06	1.5E-02	3.2E-02	1.1E-08	7.6E-08
All Depths	10L340151/VP-10,11	Pb-210	7.70E-02	1.8E-02	0.0E+00	4.2E-08	0.0E+00	2.4E-03	0.0E+00	5.0E-09	0.0E+00	2.3E-03	0.0E+00	1.9E-09	0.0E+00
All Depths	10L340151/VP-10,11	Th-230	3.84E+00	1.0E-01	4.8E-01	1.6E-06	6.6E-06	2.0E-02	1.3E-01	3.4E-07	1.7E-06	1.3E-02	3.2E-02	9.1E-09	7.6E-08

Attachment 12. Radiological Doses and Risks for each Property (page 21 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10L340151/VP-10,11	TOTAL		1.2E-01	4.8E-01	1.6E-06	6.6E-06	2.3E-02	1.3E-01	3.5E-07	1.7E-06	1.5E-02	3.2E-02	1.1E-08	7.6E-08
Sub. (>0.5 ft)	11K510035/VP-14	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
Sub. (>0.5 ft)	11K510035/VP-14	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09
Sub. (>0.5 ft)	11K510035/VP-14	TOTAL		1.9E-02	5.4E-02	2.0E-07	7.6E-07	3.3E-03	1.5E-02	4.1E-08	2.0E-07	2.4E-03	3.7E-03	1.8E-09	8.7E-09
All Depths	11K510035/VP-14	Pb-210	2.94E-02	7.0E-03	0.0E+00	1.6E-08	0.0E+00	9.2E-04	0.0E+00	1.9E-09	0.0E+00	9.0E-04	0.0E+00	7.1E-10	0.0E+00
All Depths	11K510035/VP-14	Th-230	4.40E-01	1.2E-02	5.4E-02	1.8E-07	7.6E-07	2.3E-03	1.5E-02	3.9E-08	2.0E-07	1.5E-03	3.7E-03	1.0E-09	8.7E-09
All Depths	11K510035/VP-14	TOTAL		1.9E-02	5.4E-02	2.0E-07	7.6E-07	3.3E-03	1.5E-02	4.1E-08	2.0E-07	2.4E-03	3.7E-03	1.8E-09	8.7E-09
Sub. (>0.5 ft)	11K520056/VP-15	Pb-210	3.72E-02	8.8E-03	0.0E+00	2.1E-08	0.0E+00	1.2E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	9.0E-10	0.0E+00
Sub. (>0.5 ft)	11K520056/VP-15	Th-230	1.00E+00	2.7E-02	1.2E-01	4.1E-07	1.7E-06	5.3E-03	3.5E-02	8.9E-08	4.5E-07	3.4E-03	8.5E-03	2.4E-09	2.0E-08
Sub. (>0.5 ft)	11K520056/VP-15	TOTAL		3.6E-02	1.2E-01	4.3E-07	1.7E-06	6.5E-03	3.5E-02	9.2E-08	4.5E-07	4.5E-03	8.5E-03	3.3E-09	2.0E-08
All Depths	11K520056/VP-15	Pb-210	3.72E-02	8.8E-03	0.0E+00	2.1E-08	0.0E+00	1.2E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	9.0E-10	0.0E+00
All Depths	11K520056/VP-15	Th-230	1.00E+00	2.7E-02	1.2E-01	4.1E-07	1.7E-06	5.3E-03	3.5E-02	8.9E-08	4.5E-07	3.4E-03	8.5E-03	2.4E-09	2.0E-08
All Depths	11K520056/VP-15	TOTAL		3.6E-02	1.2E-01	4.3E-07	1.7E-06	6.5E-03	3.5E-02	9.2E-08	4.5E-07	4.5E-03	8.5E-03	3.3E-09	2.0E-08
Surf. (<0.5 ft)	11K630221	Ac-227	8.10E-02	1.1E-01	0.0E+00	2.8E-07	0.0E+00	2.7E-02	0.0E+00	8.3E-08	0.0E+00	9.3E-03	0.0E+00	7.2E-09	0.0E+00
Surf. (<0.5 ft)	11K630221	Pb-210	1.69E-01	4.0E-02	0.0E+00	9.3E-08	0.0E+00	5.3E-03	0.0E+00	1.1E-08	0.0E+00	5.2E-03	0.0E+00	4.1E-09	0.0E+00
Surf. (<0.5 ft)	11K630221	Th-230	1.04E+01	2.8E-01	1.3E+00	4.3E-06	1.8E-05	5.5E-02	3.7E-01	9.3E-07	4.7E-06	3.5E-02	8.8E-02	2.5E-08	2.1E-07
Surf. (<0.5 ft)	11K630221	TOTAL		4.3E-01	1.3E+00	4.7E-06	1.8E-05	8.7E-02	3.7E-01	1.0E-06	4.7E-06	5.0E-02	8.8E-02	3.6E-08	2.1E-07
All Depths	11K630221	Ac-227	8.10E-02	1.1E-01	0.0E+00	2.8E-07	0.0E+00	2.7E-02	0.0E+00	8.3E-08	0.0E+00	9.3E-03	0.0E+00	7.2E-09	0.0E+00
All Depths	11K630221	Pb-210	1.69E-01	4.0E-02	0.0E+00	9.3E-08	0.0E+00	5.3E-03	0.0E+00	1.1E-08	0.0E+00	5.2E-03	0.0E+00	4.1E-09	0.0E+00
All Depths	11K630221	Th-230	1.04E+01	2.8E-01	1.3E+00	4.3E-06	1.8E-05	5.5E-02	3.7E-01	9.3E-07	4.7E-06	3.5E-02	8.8E-02	2.5E-08	2.1E-07
All Depths	11K630221	TOTAL		4.3E-01	1.3E+00	4.7E-06	1.8E-05	8.7E-02	3.7E-01	1.0E-06	4.7E-06	5.0E-02	8.8E-02	3.6E-08	2.1E-07
Sub. (>0.5 ft)	11L520011	Pb-210	3.36E-02	8.0E-03	0.0E+00	1.9E-08	0.0E+00	1.0E-03	0.0E+00	2.2E-09	0.0E+00	1.0E-03	0.0E+00	8.1E-10	0.0E+00
Sub. (>0.5 ft)	11L520011	Ra-226	8.50E-01	3.1E+00	0.0E+00	4.4E-05	0.0E+00	9.8E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.7E-07	0.0E+00
Sub. (>0.5 ft)	11L520011	Th-230	7.40E-01	2.0E-02	9.2E-02	3.1E-07	1.3E-06	3.9E-03	2.6E-02	6.6E-08	3.3E-07	2.5E-03	6.3E-03	1.8E-09	1.5E-08
Sub. (>0.5 ft)	11L520011	Th-232	6.90E-01	9.2E-02	3.2E+00	3.9E-05	5.4E-05	1.8E-02	9.9E-01	9.6E-06	1.4E-05	1.1E-02	1.7E-01	1.4E-07	5.8E-07
Sub. (>0.5 ft)	11L520011	U-238	1.84E+01	1.0E+00	0.0E+00	9.6E-06	0.0E+00	3.0E-01	0.0E+00	2.5E-06	0.0E+00	6.8E-02	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	11L520011	TOTAL		4.3E+00	3.3E+00	9.3E-05	5.5E-05	1.3E+00	1.0E+00	2.4E-05	1.4E-05	2.4E-01	1.7E-01	8.6E-07	6.0E-07
Surf. (<0.5 ft)	11L520011	Pb-210	4.48E-02	1.1E-02	0.0E+00	2.5E-08	0.0E+00	1.4E-03	0.0E+00	2.9E-09	0.0E+00	1.4E-03	0.0E+00	1.1E-09	0.0E+00
Surf. (<0.5 ft)	11L520011	Th-230	1.54E+00	4.2E-02	1.9E-01	6.4E-07	2.7E-06	8.2E-03	5.4E-02	1.4E-07	6.9E-07	5.2E-03	1.3E-02	3.7E-09	3.0E-08
Surf. (<0.5 ft)	11L520011	TOTAL		5.2E-02	1.9E-01	6.6E-07	2.7E-06	9.6E-03	5.4E-02	1.4E-07	6.9E-07	6.5E-03	1.3E-02	4.7E-09	3.0E-08
All Depths	11L520011	Pb-210	3.63E-02	8.6E-03	0.0E+00	2.0E-08	0.0E+00	1.1E-03	0.0E+00	2.4E-09	0.0E+00	1.1E-03	0.0E+00	8.7E-10	0.0E+00
All Depths	11L520011	Ra-226	8.50E-01	3.1E+00	0.0E+00	4.4E-05	0.0E+00	9.8E-01	0.0E+00	1.2E-05	0.0E+00	1.5E-01	0.0E+00	5.7E-07	0.0E+00
All Depths	11L520011	Th-230	9.30E-01	2.5E-02	1.2E-01	3.8E-07	1.6E-06	4.9E-03	3.3E-02	8.3E-08	4.1E-07	3.1E-03	7.9E-03	2.2E-09	1.8E-08
All Depths	11L520011	Th-232	6.90E-01	9.2E-02	3.2E+00	3.9E-05	5.4E-05	1.8E-02	9.9E-01	9.6E-06	1.4E-05	1.1E-02	1.7E-01	1.4E-07	5.8E-07
All Depths	11L520011	U-238	1.84E+01	1.0E+00	0.0E+00	9.6E-06	0.0E+00	3.0E-01	0.0E+00	2.5E-06	0.0E+00	6.8E-02	0.0E+00	1.5E-07	0.0E+00
All Depths	11L520011	TOTAL		4.3E+00	3.3E+00	9.3E-05	5.5E-05	1.3E+00	1.0E+00	2.4E-05	1.5E-05	2.4E-01	1.7E-01	8.6E-07	6.0E-07
Surf. (<0.5 ft)	CWC	Ac-227	1.73E+00									2.0E-01	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	CWC	Pa-231	2.09E+00									1.1E-01	0.0E+00	3.5E-08	0.0E+00
Surf. (<0.5 ft)	CWC	Pb-210	4.22E+00									1.3E-01	0.0E+00	1.0E-07	0.0E+00
Surf. (<0.5 ft)	CWC	Ra-226	7.10E-01									1.3E-01	0.0E+00	4.7E-07	0.0E+00
Surf. (<0.5 ft)	CWC	Th-228	7.90E-01									1.3E-01	0.0E+00	2.0E-07	0.0E+00
Surf. (<0.5 ft)	CWC	Th-230	1.31E+00									4.4E-03	1.1E-02	3.1E-09	2.6E-08

Attachment 12. Radiological Doses and Risks for each Property (page 22 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	CWC	Th-232	8.60E-01									1.4E-02	2.1E-01	1.8E-07	7.3E-07
Surf. (<0.5 ft)	CWC	U-234	4.56E+00									7.3E-03	0.0E+00	6.4E-09	0.0E+00
Surf. (<0.5 ft)	CWC	U-235	2.02E-01									2.8E-03	0.0E+00	5.7E-09	0.0E+00
Surf. (<0.5 ft)	CWC	U-238	4.51E+00									1.7E-02	0.0E+00	3.7E-08	0.0E+00
Surf. (<0.5 ft)	CWC	TOTAL										7.4E-01	2.2E-01	1.2E-06	7.5E-07
All Depths	CWC	Ac-227	1.73E+00									2.0E-01	0.0E+00	1.5E-07	0.0E+00
All Depths	CWC	Pa-231	2.09E+00									1.1E-01	0.0E+00	3.5E-08	0.0E+00
All Depths	CWC	Pb-210	4.22E+00									1.3E-01	0.0E+00	1.0E-07	0.0E+00
All Depths	CWC	Ra-226	7.10E-01									1.3E-01	0.0E+00	4.7E-07	0.0E+00
All Depths	CWC	Th-228	7.90E-01									1.3E-01	0.0E+00	2.0E-07	0.0E+00
All Depths	CWC	Th-230	1.31E+00									4.4E-03	1.1E-02	3.1E-09	2.6E-08
All Depths	CWC	Th-232	8.60E-01									1.4E-02	2.1E-01	1.8E-07	7.3E-07
All Depths	CWC	U-234	4.56E+00									7.3E-03	0.0E+00	6.4E-09	0.0E+00
All Depths	CWC	U-235	2.02E-01									2.8E-03	0.0E+00	5.7E-09	0.0E+00
All Depths	CWC	U-238	4.51E+00									1.7E-02	0.0E+00	3.7E-08	0.0E+00
All Depths	CWC	TOTAL										7.4E-01	2.2E-01	1.2E-06	7.5E-07
All Depths	Futura	Ac-227	5.04E+01	6.7E+01	0.0E+00	1.8E-04	0.0E+00	1.7E+01	0.0E+00	5.1E-05	0.0E+00	5.8E+00	0.0E+00	4.5E-06	0.0E+00
All Depths	Futura	Pa-231	5.96E+01	2.6E+01	0.0E+00	1.3E-04	0.0E+00	4.5E+00	0.0E+00	3.1E-05	0.0E+00	3.1E+00	0.0E+00	1.0E-06	0.0E+00
All Depths	Futura	Pb-210	1.10E+02	2.6E+01	0.0E+00	6.1E-05	0.0E+00	3.4E+00	0.0E+00	7.2E-06	0.0E+00	3.4E+00	0.0E+00	2.7E-06	0.0E+00
All Depths	Futura	Ra-226	4.50E+01	1.6E+02	0.0E+00	2.3E-03	0.0E+00	5.2E+01	0.0E+00	6.3E-04	0.0E+00	8.1E+00	0.0E+00	3.0E-05	0.0E+00
All Depths	Futura	Th-228	1.15E+00	3.8E+00	0.0E+00	7.3E-06	0.0E+00	1.2E+00	0.0E+00	2.2E-06	0.0E+00	1.9E-01	0.0E+00	2.8E-07	0.0E+00
All Depths	Futura	Th-230	1.00E+02	2.7E+00	1.2E+01	4.1E-05	1.7E-04	5.3E-01	3.5E+00	9.0E-06	4.5E-05	3.4E-01	8.5E-01	2.4E-07	2.0E-06
All Depths	Futura	Th-232	1.22E+00	1.6E-01	5.6E+00	7.0E-05	9.5E-05	3.2E-02	1.7E+00	1.7E-05	2.5E-05	2.0E-02	2.9E-01	2.5E-07	1.0E-06
All Depths	Futura	U-234	5.31E+01	6.9E-01	0.0E+00	2.1E-06	0.0E+00	1.3E-01	0.0E+00	3.2E-07	0.0E+00	8.5E-02	0.0E+00	7.5E-08	0.0E+00
All Depths	Futura	U-235	2.43E+00	6.4E-01	0.0E+00	4.8E-06	0.0E+00	2.0E-01	0.0E+00	1.3E-06	0.0E+00	3.3E-02	0.0E+00	6.8E-08	0.0E+00
All Depths	Futura	U-238	5.30E+01	3.0E+00	0.0E+00	2.8E-05	0.0E+00	8.6E-01	0.0E+00	7.3E-06	0.0E+00	1.9E-01	0.0E+00	4.4E-07	0.0E+00
All Depths	Futura	TOTAL		2.9E+02	1.8E+01	2.8E-03	2.7E-04	7.9E+01	5.3E+00	7.6E-04	7.0E-05	2.1E+01	1.1E+00	4.0E-05	3.0E-06
All Depths	HISS	Ac-227	1.47E+00	1.9E+00	0.0E+00	5.1E-06	0.0E+00	4.9E-01	0.0E+00	1.5E-06	0.0E+00	1.7E-01	0.0E+00	1.3E-07	0.0E+00
All Depths	HISS	Pa-231	1.48E+00	6.5E-01	0.0E+00	3.1E-06	0.0E+00	1.1E-01	0.0E+00	7.6E-07	0.0E+00	7.6E-02	0.0E+00	2.5E-08	0.0E+00
All Depths	HISS	Pb-210	2.30E+01	5.5E+00	0.0E+00	1.3E-05	0.0E+00	7.2E-01	0.0E+00	1.5E-06	0.0E+00	7.0E-01	0.0E+00	5.6E-07	0.0E+00
All Depths	HISS	Ra-226	8.55E+00	3.1E+01	0.0E+00	4.4E-04	0.0E+00	9.8E+00	0.0E+00	1.2E-04	0.0E+00	1.5E+00	0.0E+00	5.7E-06	0.0E+00
All Depths	HISS	Ra-228	9.00E-03	1.8E-02	0.0E+00	1.9E-07	0.0E+00	5.6E-03	0.0E+00	5.9E-08	0.0E+00	9.0E-04	0.0E+00	4.6E-09	0.0E+00
All Depths	HISS	Th-230	5.02E+01	1.4E+00	6.2E+00	2.1E-05	8.6E-05	2.7E-01	1.8E+00	4.5E-06	2.2E-05	1.7E-01	4.3E-01	1.2E-07	9.9E-07
All Depths	HISS	Th-232	6.80E-01	9.1E-02	3.1E+00	3.9E-05	5.3E-05	1.8E-02	9.7E-01	9.5E-06	1.4E-05	1.1E-02	1.6E-01	1.4E-07	5.7E-07
All Depths	HISS	U-234	1.60E+01	2.1E-01	0.0E+00	6.4E-07	0.0E+00	3.8E-02	0.0E+00	9.5E-08	0.0E+00	2.6E-02	0.0E+00	2.2E-08	0.0E+00
All Depths	HISS	U-235	1.53E+00	4.0E-01	0.0E+00	3.0E-06	0.0E+00	1.2E-01	0.0E+00	8.4E-07	0.0E+00	2.1E-02	0.0E+00	4.3E-08	0.0E+00
All Depths	HISS	U-238	1.59E+01	9.0E-01	0.0E+00	8.3E-06	0.0E+00	2.6E-01	0.0E+00	2.2E-06	0.0E+00	5.8E-02	0.0E+00	1.3E-07	0.0E+00
All Depths	HISS	TOTAL		4.2E+01	9.3E+00	5.3E-04	1.4E-04	1.2E+01	2.7E+00	1.4E-04	3.6E-05	2.8E+00	5.9E-01	6.9E-06	1.6E-06
Sub. (>0.5 ft)	IA-1	Ac-227	5.76E-01	7.6E-01	0.0E+00	2.0E-06	0.0E+00	1.9E-01	0.0E+00	5.9E-07	0.0E+00	6.6E-02	0.0E+00	5.1E-08	0.0E+00
Sub. (>0.5 ft)	IA-1	Pa-231	1.13E+00	4.9E-01	0.0E+00	2.4E-06	0.0E+00	8.5E-02	0.0E+00	5.8E-07	0.0E+00	5.8E-02	0.0E+00	1.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-1	Pb-210	3.60E+02	8.5E+01	0.0E+00	2.0E-04	0.0E+00	1.1E+01	0.0E+00	2.4E-05	0.0E+00	1.1E+01	0.0E+00	8.7E-06	0.0E+00
Sub. (>0.5 ft)	IA-1	Ra-226	2.11E+02	7.7E+02	0.0E+00	1.1E-02	0.0E+00	2.4E+02	0.0E+00	3.0E-03	0.0E+00	3.8E+01	0.0E+00	1.4E-04	0.0E+00
Sub. (>0.5 ft)	IA-1	Th-228	2.40E-01	7.9E-01	0.0E+00	1.5E-06	0.0E+00	2.5E-01	0.0E+00	4.5E-07	0.0E+00	3.9E-02	0.0E+00	5.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-1	Th-230	2.60E+01	7.1E-01	3.2E+00	1.1E-05	4.5E-05	1.4E-01	9.1E-01	2.3E-06	1.2E-05	8.7E-02	2.2E-01	6.2E-08	5.1E-07
Sub. (>0.5 ft)	IA-1	Th-232	5.37E+00	7.2E-01	2.5E+01	3.1E-04	4.2E-04	1.4E-01	7.7E+00	7.5E-05	1.1E-04	8.9E-02	1.3E+00	1.1E-06	4.5E-06
Sub. (>0.5 ft)	IA-1	U-234	1.09E+02	1.4E+00	0.0E+00	4.3E-06	0.0E+00	2.6E-01	0.0E+00	6.5E-07	0.0E+00	1.8E-01	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-1	U-235	9.32E-02	2.4E-02	0.0E+00	1.9E-07	0.0E+00	7.6E-03	0.0E+00	5.1E-08	0.0E+00	1.3E-03	0.0E+00	2.6E-09	0.0E+00
Sub. (>0.5 ft)	IA-1	U-238	1.09E+02	6.1E+00	0.0E+00	5.7E-05	0.0E+00	1.8E+00	0.0E+00	1.5E-05	0.0E+00	4.0E-01	0.0E+00	9.0E-07	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 23 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	IA-1	TOTAL		8.7E+02	2.8E+01	1.1E-02	4.6E-04	2.6E+02	8.6E+00	3.1E-03	1.2E-04	5.0E+01	1.5E+00	1.5E-04	5.0E-06
Surf. (<5 ft)	IA-1	Ac-227	5.38E+02	7.1E+02	0.0E+00	1.9E-03	0.0E+00	1.8E+02	0.0E+00	5.5E-04	0.0E+00	6.2E+01	0.0E+00	4.8E-05	0.0E+00
Surf. (<5 ft)	IA-1	Pa-231	5.85E+02	2.6E+02	0.0E+00	1.2E-03	0.0E+00	4.4E+01	0.0E+00	3.0E-04	0.0E+00	3.0E+01	0.0E+00	9.8E-06	0.0E+00
Surf. (<5 ft)	IA-1	Pb-210	9.95E+02	2.4E+02	0.0E+00	5.5E-04	0.0E+00	3.1E+01	0.0E+00	6.5E-05	0.0E+00	3.0E+01	0.0E+00	2.4E-05	0.0E+00
Surf. (<5 ft)	IA-1	Ra-226	5.84E+02	2.1E+03	0.0E+00	3.0E-02	0.0E+00	6.7E+02	0.0E+00	8.2E-03	0.0E+00	1.1E+02	0.0E+00	3.9E-04	0.0E+00
Surf. (<5 ft)	IA-1	Ra-228	3.36E+00	6.6E+00	0.0E+00	7.0E-05	0.0E+00	2.1E+00	0.0E+00	2.2E-05	0.0E+00	3.4E-01	0.0E+00	1.7E-06	0.0E+00
Surf. (<5 ft)	IA-1	Th-228	1.20E+01	3.9E+01	0.0E+00	7.6E-05	0.0E+00	1.2E+01	0.0E+00	2.3E-05	0.0E+00	2.0E+00	0.0E+00	3.0E-06	0.0E+00
Surf. (<5 ft)	IA-1	Th-230	9.26E+01	2.5E+00	1.1E+01	3.8E-05	1.6E-04	4.9E-01	3.2E+00	8.3E-06	4.1E-05	3.1E-01	7.8E-01	2.2E-07	1.8E-06
Surf. (<5 ft)	IA-1	Th-232	1.44E+01	1.9E+00	6.6E+01	8.2E-04	1.1E-03	3.7E-01	2.1E+01	2.0E-04	3.0E-04	2.4E-01	3.5E+00	3.0E-06	1.2E-05
Surf. (<5 ft)	IA-1	U-234	2.86E+02	3.7E+00	0.0E+00	1.1E-05	0.0E+00	6.8E-01	0.0E+00	1.7E-06	0.0E+00	4.6E-01	0.0E+00	4.0E-07	0.0E+00
Surf. (<5 ft)	IA-1	U-235	1.31E+01	3.4E+00	0.0E+00	2.6E-05	0.0E+00	1.1E+00	0.0E+00	7.2E-06	0.0E+00	1.8E-01	0.0E+00	3.7E-07	0.0E+00
Surf. (<5 ft)	IA-1	U-238	2.86E+02	1.6E+01	0.0E+00	1.5E-04	0.0E+00	4.7E+00	0.0E+00	3.9E-05	0.0E+00	1.0E+00	0.0E+00	2.4E-06	0.0E+00
Surf. (<5 ft)	IA-1	TOTAL		3.4E+03	7.8E+01	3.5E-02	1.3E-03	9.5E+02	2.4E+01	9.5E-03	3.4E-04	2.3E+02	4.2E+00	4.8E-04	1.4E-05
Sub. (>0.5 ft)	IA-10	Ac-227	3.80E+00	5.0E+00	0.0E+00	1.3E-05	0.0E+00	1.3E+00	0.0E+00	3.9E-06	0.0E+00	4.4E-01	0.0E+00	3.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	Pa-231	4.16E+00	1.8E+00	0.0E+00	8.8E-06	0.0E+00	3.1E-01	0.0E+00	2.1E-06	0.0E+00	2.1E-01	0.0E+00	7.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	Pb-210	7.41E+00	1.8E+00	0.0E+00	4.1E-06	0.0E+00	2.3E-01	0.0E+00	4.8E-07	0.0E+00	2.3E-01	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	Ra-226	3.31E+00	1.2E+01	0.0E+00	1.7E-04	0.0E+00	3.8E+00	0.0E+00	4.7E-05	0.0E+00	6.0E-01	0.0E+00	2.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-10	Th-228	5.54E-01	1.8E+00	0.0E+00	3.5E-06	0.0E+00	5.8E-01	0.0E+00	1.0E-06	0.0E+00	9.0E-02	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	Th-230	6.17E+00	1.7E-01	7.6E-01	2.6E-06	1.1E-05	3.3E-02	2.2E-01	5.5E-07	2.7E-06	2.1E-02	5.2E-02	1.5E-08	1.2E-07
Sub. (>0.5 ft)	IA-10	Th-232	9.30E-01	1.2E-01	4.3E+00	5.3E-05	7.2E-05	2.4E-02	1.3E+00	1.3E-05	1.9E-05	1.5E-02	2.2E-01	1.9E-07	7.9E-07
Sub. (>0.5 ft)	IA-10	U-234	9.77E+00	1.3E-01	0.0E+00	3.9E-07	0.0E+00	2.3E-02	0.0E+00	5.8E-08	0.0E+00	1.6E-02	0.0E+00	1.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	U-235	4.41E-01	1.2E-01	0.0E+00	8.8E-07	0.0E+00	3.6E-02	0.0E+00	2.4E-07	0.0E+00	6.0E-03	0.0E+00	1.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	U-238	9.72E+00	5.5E-01	0.0E+00	5.1E-06	0.0E+00	1.6E-01	0.0E+00	1.3E-06	0.0E+00	3.6E-02	0.0E+00	8.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	TOTAL		2.4E+01	5.0E+00	2.6E-04	8.3E-05	6.5E+00	1.5E+00	6.9E-05	2.2E-05	1.7E+00	2.8E-01	3.2E-06	9.1E-07
Surf. (<0.5 ft)	IA-10	Ac-227	8.00E-03	1.1E-02	0.0E+00	2.8E-08	0.0E+00	2.6E-03	0.0E+00	8.2E-09	0.0E+00	9.2E-04	0.0E+00	7.1E-10	0.0E+00
Surf. (<0.5 ft)	IA-10	Pa-231	1.10E-01	4.8E-02	0.0E+00	2.3E-07	0.0E+00	8.3E-03	0.0E+00	5.6E-08	0.0E+00	5.7E-03	0.0E+00	1.8E-09	0.0E+00
Surf. (<0.5 ft)	IA-10	Pb-210	2.19E+00	5.2E-01	0.0E+00	1.2E-06	0.0E+00	6.8E-02	0.0E+00	1.4E-07	0.0E+00	6.7E-02	0.0E+00	5.3E-08	0.0E+00
Surf. (<0.5 ft)	IA-10	Ra-226	2.40E-01	8.7E-01	0.0E+00	1.2E-05	0.0E+00	2.8E-01	0.0E+00	3.4E-06	0.0E+00	4.3E-02	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	IA-10	Th-228	1.05E+00	3.4E+00	0.0E+00	6.6E-06	0.0E+00	1.1E+00	0.0E+00	2.0E-06	0.0E+00	1.7E-01	0.0E+00	2.6E-07	0.0E+00
Surf. (<0.5 ft)	IA-10	Th-230	2.78E+00	7.6E-02	3.4E-01	1.1E-06	4.8E-06	1.5E-02	9.7E-02	2.5E-07	1.2E-06	9.3E-03	2.4E-02	6.6E-09	5.5E-08
Surf. (<0.5 ft)	IA-10	Th-232	4.10E-01	5.5E-02	1.9E+00	2.3E-05	3.2E-05	1.1E-02	5.9E-01	5.7E-06	8.4E-06	6.8E-03	9.8E-02	8.4E-08	3.5E-07
Surf. (<0.5 ft)	IA-10	U-234	4.32E+00	5.6E-02	0.0E+00	1.7E-07	0.0E+00	1.0E-02	0.0E+00	2.6E-08	0.0E+00	7.0E-03	0.0E+00	6.1E-09	0.0E+00
Surf. (<0.5 ft)	IA-10	U-235	1.18E-01	3.1E-02	0.0E+00	2.4E-07	0.0E+00	9.6E-03	0.0E+00	6.5E-08	0.0E+00	1.6E-03	0.0E+00	3.3E-09	0.0E+00
Surf. (<0.5 ft)	IA-10	U-238	4.27E+00	2.4E-01	0.0E+00	2.2E-06	0.0E+00	6.9E-02	0.0E+00	5.9E-07	0.0E+00	1.6E-02	0.0E+00	3.5E-08	0.0E+00
Surf. (<0.5 ft)	IA-10	TOTAL		5.4E+00	2.2E+00	4.8E-05	3.7E-05	1.6E+00	6.8E-01	1.2E-05	9.7E-06	3.3E-01	1.2E-01	6.1E-07	4.0E-07
Surf. (<5 ft)	IA-11	Th-230	2.40E-01	6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
Surf. (<5 ft)	IA-11	TOTAL		6.5E-03	3.0E-02	9.9E-08	4.1E-07	1.3E-03	8.4E-03	2.1E-08	1.1E-07	8.0E-04	2.0E-03	5.7E-10	4.7E-09
Sub. (>0.5 ft)	IA-12	Ac-227	2.02E+00	2.7E+00	0.0E+00	7.1E-06	0.0E+00	6.7E-01	0.0E+00	2.1E-06	0.0E+00	2.3E-01	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Pa-231	2.12E+00	9.3E-01	0.0E+00	4.5E-06	0.0E+00	1.6E-01	0.0E+00	1.1E-06	0.0E+00	1.1E-01	0.0E+00	3.5E-08	0.0E+00
Sub. (>0.5 ft)	IA-12	Pb-210	4.35E+00	1.0E+00	0.0E+00	2.4E-06	0.0E+00	1.4E-01	0.0E+00	2.8E-07	0.0E+00	1.3E-01	0.0E+00	1.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Ra-226	1.51E+00	5.5E+00	0.0E+00	7.8E-05	0.0E+00	1.7E+00	0.0E+00	2.1E-05	0.0E+00	2.7E-01	0.0E+00	1.0E-06	0.0E+00
Sub. (>0.5 ft)	IA-12	Ra-228	2.33E-01	4.6E-01	0.0E+00	4.8E-06	0.0E+00	1.4E-01	0.0E+00	1.5E-06	0.0E+00	2.3E-02	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Th-228	5.40E-01	1.8E+00	0.0E+00	3.4E-06	0.0E+00	5.6E-01	0.0E+00	1.0E-06	0.0E+00	8.8E-02	0.0E+00	1.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Th-230	7.32E+01	2.0E+00	9.1E+00	3.0E-05	1.3E-04	3.9E-01	2.6E+00	6.5E-06	3.3E-05	2.5E-01	6.2E-01	1.7E-07	1.4E-06
Sub. (>0.5 ft)	IA-12	Th-232	9.00E-01	1.2E-01	4.1E+00	5.2E-05	7.0E-05	2.3E-02	1.3E+00	1.3E-05	1.8E-05	1.5E-02	2.2E-01	1.8E-07	7.6E-07
Sub. (>0.5 ft)	IA-12	U-234	8.34E+00	1.1E-01	0.0E+00	3.3E-07	0.0E+00	2.0E-02	0.0E+00	5.0E-08	0.0E+00	1.3E-02	0.0E+00	1.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-12	U-235	1.69E+00	4.4E-01	0.0E+00	3.4E-06	0.0E+00	1.4E-01	0.0E+00	9.3E-07	0.0E+00	2.3E-02	0.0E+00	4.7E-08	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 24 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	IA-12	U-238	8.29E+00	4.7E-01	0.0E+00	4.3E-06	0.0E+00	1.3E-01	0.0E+00	1.1E-06	0.0E+00	3.0E-02	0.0E+00	6.8E-08	0.0E+00
Sub. (>0.5 ft)	IA-12	TOTAL		1.6E+01	1.3E+01	1.9E-04	2.0E-04	4.1E+00	3.9E+00	4.8E-05	5.1E-05	1.2E+00	8.4E-01	2.1E-06	2.2E-06
Surf. (<0.5 ft)	IA-12	Ac-227	3.67E+00	4.9E+00	0.0E+00	1.3E-05	0.0E+00	1.2E+00	0.0E+00	3.8E-06	0.0E+00	4.2E-01	0.0E+00	3.3E-07	0.0E+00
Surf. (<0.5 ft)	IA-12	Pa-231	4.02E+00	1.8E+00	0.0E+00	8.6E-06	0.0E+00	3.0E-01	0.0E+00	2.1E-06	0.0E+00	2.1E-01	0.0E+00	6.7E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	Pb-210	7.17E+00	1.7E+00	0.0E+00	4.0E-06	0.0E+00	2.2E-01	0.0E+00	4.7E-07	0.0E+00	2.2E-01	0.0E+00	1.7E-07	0.0E+00
Surf. (<0.5 ft)	IA-12	Ra-226	3.17E+00	1.2E+01	0.0E+00	1.6E-04	0.0E+00	3.6E+00	0.0E+00	4.5E-05	0.0E+00	5.7E-01	0.0E+00	2.1E-06	0.0E+00
Surf. (<0.5 ft)	IA-12	Th-228	2.74E-01	9.0E-01	0.0E+00	1.7E-06	0.0E+00	2.8E-01	0.0E+00	5.2E-07	0.0E+00	4.5E-02	0.0E+00	6.8E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	Th-230	3.17E+02	8.6E+00	3.9E+01	1.3E-04	5.5E-04	1.7E+00	1.1E+01	2.8E-05	1.4E-04	1.1E+00	2.7E+00	7.6E-07	6.3E-06
Surf. (<0.5 ft)	IA-12	Th-232	6.00E-01	8.0E-02	2.8E+00	3.4E-05	4.7E-05	1.6E-02	8.6E-01	8.4E-06	1.2E-05	1.0E-02	1.4E-01	1.2E-07	5.1E-07
Surf. (<0.5 ft)	IA-12	U-234	1.12E+01	1.4E-01	0.0E+00	4.4E-07	0.0E+00	2.7E-02	0.0E+00	6.7E-08	0.0E+00	1.8E-02	0.0E+00	1.6E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	U-235	5.06E-01	1.3E-01	0.0E+00	1.0E-06	0.0E+00	4.1E-02	0.0E+00	2.8E-07	0.0E+00	6.9E-03	0.0E+00	1.4E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	U-238	1.11E+01	6.3E-01	0.0E+00	5.8E-06	0.0E+00	1.8E-01	0.0E+00	1.5E-06	0.0E+00	4.1E-02	0.0E+00	9.2E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	TOTAL		3.0E+01	4.2E+01	3.6E-04	5.9E-04	7.6E+00	1.2E+01	9.0E-05	1.5E-04	2.6E+00	2.8E+00	3.8E-06	6.8E-06
Sub. (>0.5 ft)	IA-13	Ac-227	1.65E+00	2.2E+00	0.0E+00	5.8E-06	0.0E+00	5.4E-01	0.0E+00	1.7E-06	0.0E+00	1.9E-01	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	Pa-231	1.82E+00	8.0E-01	0.0E+00	3.9E-06	0.0E+00	1.4E-01	0.0E+00	9.3E-07	0.0E+00	9.3E-02	0.0E+00	3.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	Pb-210	3.43E+00	8.1E-01	0.0E+00	1.9E-06	0.0E+00	1.1E-01	0.0E+00	2.2E-07	0.0E+00	1.0E-01	0.0E+00	8.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	Ra-226	9.70E-01	3.5E+00	0.0E+00	5.0E-05	0.0E+00	1.1E+00	0.0E+00	1.4E-05	0.0E+00	1.8E-01	0.0E+00	6.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	Th-228	6.05E-01	2.0E+00	0.0E+00	3.8E-06	0.0E+00	6.3E-01	0.0E+00	1.1E-06	0.0E+00	9.8E-02	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	Th-230	1.58E+00	4.3E-02	2.0E-01	6.5E-07	2.7E-06	8.4E-03	5.5E-02	1.4E-07	7.0E-07	5.3E-03	1.3E-02	3.8E-09	3.1E-08
Sub. (>0.5 ft)	IA-13	Th-232	9.90E-01	1.3E-01	4.6E+00	5.7E-05	7.7E-05	2.6E-02	1.4E+00	1.4E-05	2.0E-05	1.6E-02	2.4E-01	2.0E-07	8.4E-07
Sub. (>0.5 ft)	IA-13	U-234	9.67E+00	1.3E-01	0.0E+00	3.9E-07	0.0E+00	2.3E-02	0.0E+00	5.8E-08	0.0E+00	1.6E-02	0.0E+00	1.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	U-235	4.37E-01	1.1E-01	0.0E+00	8.7E-07	0.0E+00	3.6E-02	0.0E+00	2.4E-07	0.0E+00	6.0E-03	0.0E+00	1.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	U-238	9.62E+00	5.4E-01	0.0E+00	5.0E-06	0.0E+00	1.6E-01	0.0E+00	1.3E-06	0.0E+00	3.5E-02	0.0E+00	7.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	TOTAL		1.0E+01	4.8E+00	1.3E-04	8.0E-05	2.8E+00	1.5E+00	3.3E-05	2.1E-05	7.4E-01	2.5E-01	1.4E-06	8.7E-07
Surf. (<0.5 ft)	IA-13	Ac-227	1.73E-01	2.3E-01	0.0E+00	6.0E-07	0.0E+00	5.7E-02	0.0E+00	1.8E-07	0.0E+00	2.0E-02	0.0E+00	1.5E-08	0.0E+00
Surf. (<0.5 ft)	IA-13	Pa-231	3.19E-01	1.4E-01	0.0E+00	6.8E-07	0.0E+00	2.4E-02	0.0E+00	1.6E-07	0.0E+00	1.6E-02	0.0E+00	5.3E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	Pb-210	2.70E+00	6.4E-01	0.0E+00	1.5E-06	0.0E+00	8.4E-02	0.0E+00	1.8E-07	0.0E+00	8.2E-02	0.0E+00	6.5E-08	0.0E+00
Surf. (<0.5 ft)	IA-13	Ra-226	5.40E-01	2.0E+00	0.0E+00	2.8E-05	0.0E+00	6.2E-01	0.0E+00	7.6E-06	0.0E+00	9.8E-02	0.0E+00	3.6E-07	0.0E+00
Surf. (<0.5 ft)	IA-13	Th-228	2.00E-02	6.6E-02	0.0E+00	1.3E-07	0.0E+00	2.1E-02	0.0E+00	3.8E-08	0.0E+00	3.3E-03	0.0E+00	4.9E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	Th-230	1.37E+01	3.7E-01	1.7E+00	5.7E-06	2.4E-05	7.3E-02	4.8E-01	1.2E-06	6.1E-06	4.6E-02	1.2E-01	3.3E-08	2.7E-07
Surf. (<0.5 ft)	IA-13	Th-232	4.30E-01	5.8E-02	2.0E+00	2.5E-05	3.3E-05	1.1E-02	6.2E-01	6.0E-06	8.8E-06	7.2E-03	1.0E-01	8.8E-08	3.6E-07
Surf. (<0.5 ft)	IA-13	U-234	2.90E+00	3.8E-02	0.0E+00	1.2E-07	0.0E+00	6.9E-03	0.0E+00	1.7E-08	0.0E+00	4.7E-03	0.0E+00	4.1E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	U-235	1.33E-01	3.5E-02	0.0E+00	2.7E-07	0.0E+00	1.1E-02	0.0E+00	7.3E-08	0.0E+00	1.8E-03	0.0E+00	3.7E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	U-238	2.85E+00	1.6E-01	0.0E+00	1.5E-06	0.0E+00	4.6E-02	0.0E+00	3.9E-07	0.0E+00	1.0E-02	0.0E+00	2.3E-08	0.0E+00
Surf. (<0.5 ft)	IA-13	TOTAL		3.7E+00	3.7E+00	6.3E-05	5.7E-05	9.6E-01	1.1E+00	1.6E-05	1.5E-05	2.9E-01	2.2E-01	6.0E-07	6.3E-07
Sub. (>0.5 ft)	IA-2	Ac-227	6.93E+00	9.2E+00	0.0E+00	2.4E-05	0.0E+00	2.3E+00	0.0E+00	7.1E-06	0.0E+00	8.0E-01	0.0E+00	6.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	Pa-231	9.09E+00	4.0E+00	0.0E+00	1.9E-05	0.0E+00	6.9E-01	0.0E+00	4.7E-06	0.0E+00	4.7E-01	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	Pb-210	4.83E+01	1.1E+01	0.0E+00	2.7E-05	0.0E+00	1.5E+00	0.0E+00	3.1E-06	0.0E+00	1.5E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-2	Ra-226	2.74E+01	1.0E+02	0.0E+00	1.4E-03	0.0E+00	3.1E+01	0.0E+00	3.9E-04	0.0E+00	5.0E+00	0.0E+00	1.8E-05	0.0E+00
Sub. (>0.5 ft)	IA-2	Ra-228	1.63E-01	3.2E-01	0.0E+00	3.4E-06	0.0E+00	1.0E-01	0.0E+00	1.1E-06	0.0E+00	1.6E-02	0.0E+00	8.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-2	Th-228	4.00E-01	1.3E+00	0.0E+00	2.5E-06	0.0E+00	4.2E-01	0.0E+00	7.6E-07	0.0E+00	6.5E-02	0.0E+00	9.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-2	Th-230	4.54E+02	1.2E+01	5.6E+01	1.9E-04	7.8E-04	2.4E+00	1.6E+01	4.1E-05	2.0E-04	1.5E+00	3.8E+00	1.1E-06	9.0E-06
Sub. (>0.5 ft)	IA-2	Th-232	1.24E+00	1.7E-01	5.7E+00	7.1E-05	9.7E-05	3.2E-02	1.8E+00	1.7E-05	2.5E-05	2.1E-02	3.0E-01	2.5E-07	1.0E-06
Sub. (>0.5 ft)	IA-2	U-234	4.88E+01	6.3E-01	0.0E+00	1.9E-06	0.0E+00	1.2E-01	0.0E+00	2.9E-07	0.0E+00	7.9E-02	0.0E+00	6.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-2	U-235	2.22E+00	5.8E-01	0.0E+00	4.4E-06	0.0E+00	1.8E-01	0.0E+00	1.2E-06	0.0E+00	3.0E-02	0.0E+00	6.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-2	U-238	4.87E+01	2.7E+00	0.0E+00	2.5E-05	0.0E+00	7.9E-01	0.0E+00	6.7E-06	0.0E+00	1.8E-01	0.0E+00	4.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	TOTAL		1.4E+02	6.2E+01	1.8E-03	8.8E-04	4.0E+01	1.8E+01	4.7E-04	2.3E-04	9.6E+00	4.1E+00	2.2E-05	1.0E-05

Attachment 12. Radiological Doses and Risks for each Property (page 25 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	IA-2	Ac-227	3.07E+01	4.1E+01	0.0E+00	1.1E-04	0.0E+00	1.0E+01	0.0E+00	3.1E-05	0.0E+00	3.5E+00	0.0E+00	2.7E-06	0.0E+00
Surf. (<5 ft)	IA-2	Pa-231	4.12E+01	1.8E+01	0.0E+00	8.8E-05	0.0E+00	3.1E+00	0.0E+00	2.1E-05	0.0E+00	2.1E+00	0.0E+00	6.9E-07	0.0E+00
Surf. (<5 ft)	IA-2	Pb-210	1.16E+02	2.7E+01	0.0E+00	6.4E-05	0.0E+00	3.6E+00	0.0E+00	7.6E-06	0.0E+00	3.5E+00	0.0E+00	2.8E-06	0.0E+00
Surf. (<5 ft)	IA-2	Ra-226	6.72E+01	2.4E+02	0.0E+00	3.5E-03	0.0E+00	7.7E+01	0.0E+00	9.5E-04	0.0E+00	1.2E+01	0.0E+00	4.5E-05	0.0E+00
Surf. (<5 ft)	IA-2	Ra-228	7.63E-01	1.5E+00	0.0E+00	1.6E-05	0.0E+00	4.7E-01	0.0E+00	5.0E-06	0.0E+00	7.6E-02	0.0E+00	3.9E-07	0.0E+00
Surf. (<5 ft)	IA-2	Th-228	7.40E-01	2.4E+00	0.0E+00	4.7E-06	0.0E+00	7.7E-01	0.0E+00	1.4E-06	0.0E+00	1.2E-01	0.0E+00	1.8E-07	0.0E+00
Surf. (<5 ft)	IA-2	Th-230	1.38E+03	3.7E+01	1.7E+02	5.7E-04	2.4E-03	7.3E+00	4.8E+01	1.2E-04	6.1E-04	4.6E+00	1.2E+01	3.3E-06	2.7E-05
Surf. (<5 ft)	IA-2	Th-232	2.04E+00	2.7E-01	9.4E+00	1.2E-04	1.6E-04	5.3E-02	2.9E+00	2.8E-05	4.2E-05	3.4E-02	4.9E-01	4.2E-07	1.7E-06
Surf. (<5 ft)	IA-2	U-234	9.70E+01	1.3E+00	0.0E+00	3.9E-06	0.0E+00	2.3E-01	0.0E+00	5.8E-07	0.0E+00	1.6E-01	0.0E+00	1.4E-07	0.0E+00
Surf. (<5 ft)	IA-2	U-235	9.62E+00	2.5E+00	0.0E+00	1.9E-05	0.0E+00	7.8E-01	0.0E+00	5.3E-06	0.0E+00	1.3E-01	0.0E+00	2.7E-07	0.0E+00
Surf. (<5 ft)	IA-2	U-238	9.69E+01	5.5E+00	0.0E+00	5.0E-05	0.0E+00	1.6E+00	0.0E+00	1.3E-05	0.0E+00	3.6E-01	0.0E+00	8.0E-07	0.0E+00
Surf. (<5 ft)	IA-2	TOTAL		3.8E+02	1.8E+02	4.5E-03	2.5E-03	1.1E+02	5.1E+01	1.2E-03	6.6E-04	2.7E+01	1.2E+01	5.7E-05	2.9E-05
Sub. (>0.5 ft)	IA-3	Ac-227	6.77E+00	9.0E+00	0.0E+00	2.4E-05	0.0E+00	2.2E+00	0.0E+00	6.9E-06	0.0E+00	7.8E-01	0.0E+00	6.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-3	Pa-231	4.06E+00	1.8E+00	0.0E+00	8.6E-06	0.0E+00	3.1E-01	0.0E+00	2.1E-06	0.0E+00	2.1E-01	0.0E+00	6.8E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	Pb-210	1.97E+02	4.7E+01	0.0E+00	1.1E-04	0.0E+00	6.1E+00	0.0E+00	1.3E-05	0.0E+00	6.0E+00	0.0E+00	4.8E-06	0.0E+00
Sub. (>0.5 ft)	IA-3	Ra-226	1.15E+02	4.2E+02	0.0E+00	5.9E-03	0.0E+00	1.3E+02	0.0E+00	1.6E-03	0.0E+00	2.1E+01	0.0E+00	7.7E-05	0.0E+00
Sub. (>0.5 ft)	IA-3	Ra-228	3.30E-02	6.5E-02	0.0E+00	6.8E-07	0.0E+00	2.0E-02	0.0E+00	2.2E-07	0.0E+00	3.3E-03	0.0E+00	1.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	Th-228	6.00E-02	2.0E-01	0.0E+00	3.8E-07	0.0E+00	6.2E-02	0.0E+00	1.1E-07	0.0E+00	9.8E-03	0.0E+00	1.5E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	Th-230	3.45E+02	9.4E+00	4.3E+01	1.4E-04	5.9E-04	1.8E+00	1.2E+01	3.1E-05	1.5E-04	1.2E+00	2.9E+00	8.2E-07	6.8E-06
Sub. (>0.5 ft)	IA-3	Th-232	1.63E+00	2.2E-01	7.5E+00	9.3E-05	1.3E-04	4.2E-02	2.3E+00	2.3E-05	3.3E-05	2.7E-02	3.9E-01	3.3E-07	1.4E-06
Sub. (>0.5 ft)	IA-3	U-234	7.10E+01	9.2E-01	0.0E+00	2.8E-06	0.0E+00	1.7E-01	0.0E+00	4.2E-07	0.0E+00	1.1E-01	0.0E+00	1.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-3	U-235	1.64E+00	4.3E-01	0.0E+00	3.3E-06	0.0E+00	1.3E-01	0.0E+00	9.0E-07	0.0E+00	2.2E-02	0.0E+00	4.6E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	U-238	7.09E+01	4.0E+00	0.0E+00	3.7E-05	0.0E+00	1.2E+00	0.0E+00	9.8E-06	0.0E+00	2.6E-01	0.0E+00	5.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-3	TOTAL		4.9E+02	5.0E+01	6.4E-03	7.2E-04	1.4E+02	1.4E+01	1.7E-03	1.9E-04	2.9E+01	3.3E+00	8.4E-05	8.2E-06
Surf. (<5 ft)	IA-3	Ac-227	1.05E+01	1.4E+01	0.0E+00	3.7E-05	0.0E+00	3.5E+00	0.0E+00	1.1E-05	0.0E+00	1.2E+00	0.0E+00	9.4E-07	0.0E+00
Surf. (<5 ft)	IA-3	Pa-231	7.67E+00	3.4E+00	0.0E+00	1.6E-05	0.0E+00	5.8E-01	0.0E+00	3.9E-06	0.0E+00	3.9E-01	0.0E+00	1.3E-07	0.0E+00
Surf. (<5 ft)	IA-3	Pb-210	2.70E+01	6.4E+00	0.0E+00	1.5E-05	0.0E+00	8.4E-01	0.0E+00	1.8E-06	0.0E+00	8.2E-01	0.0E+00	6.5E-07	0.0E+00
Surf. (<5 ft)	IA-3	Ra-226	1.49E+01	5.4E+01	0.0E+00	7.7E-04	0.0E+00	1.7E+01	0.0E+00	2.1E-04	0.0E+00	2.7E+00	0.0E+00	9.9E-06	0.0E+00
Surf. (<5 ft)	IA-3	Ra-228	1.23E-01	2.4E-01	0.0E+00	2.5E-06	0.0E+00	7.6E-02	0.0E+00	8.1E-07	0.0E+00	1.2E-02	0.0E+00	6.3E-08	0.0E+00
Surf. (<5 ft)	IA-3	Th-228	5.00E-02	1.6E-01	0.0E+00	3.2E-07	0.0E+00	5.2E-02	0.0E+00	9.4E-08	0.0E+00	8.1E-03	0.0E+00	1.2E-08	0.0E+00
Surf. (<5 ft)	IA-3	Th-230	4.80E+02	1.3E+01	5.9E+01	2.0E-04	8.3E-04	2.5E+00	1.7E+01	4.3E-05	2.1E-04	1.6E+00	4.1E+00	1.1E-06	9.5E-06
Surf. (<5 ft)	IA-3	Th-232	1.16E+00	1.6E-01	5.3E+00	6.6E-05	9.0E-05	3.0E-02	1.7E+00	1.6E-05	2.4E-05	1.9E-02	2.8E-01	2.4E-07	9.8E-07
Surf. (<5 ft)	IA-3	U-234	3.03E+01	3.9E-01	0.0E+00	1.2E-06	0.0E+00	7.2E-02	0.0E+00	1.8E-07	0.0E+00	4.9E-02	0.0E+00	4.3E-08	0.0E+00
Surf. (<5 ft)	IA-3	U-235	2.55E+00	6.7E-01	0.0E+00	5.1E-06	0.0E+00	2.1E-01	0.0E+00	1.4E-06	0.0E+00	3.5E-02	0.0E+00	7.2E-08	0.0E+00
Surf. (<5 ft)	IA-3	U-238	3.02E+01	1.7E+00	0.0E+00	1.6E-05	0.0E+00	4.9E-01	0.0E+00	4.2E-06	0.0E+00	1.1E-01	0.0E+00	2.5E-07	0.0E+00
Surf. (<5 ft)	IA-3	TOTAL		9.4E+01	6.5E+01	1.1E-03	9.2E-04	2.5E+01	1.8E+01	2.9E-04	2.4E-04	7.0E+00	4.3E+00	1.3E-05	1.0E-05
Sub. (>0.5 ft)	IA-4	Ac-227	1.26E+00	1.7E+00	0.0E+00	4.4E-06	0.0E+00	4.2E-01	0.0E+00	1.3E-06	0.0E+00	1.5E-01	0.0E+00	1.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	Pa-231	4.33E-01	1.9E-01	0.0E+00	9.2E-07	0.0E+00	3.3E-02	0.0E+00	2.2E-07	0.0E+00	2.2E-02	0.0E+00	7.2E-09	0.0E+00
Sub. (>0.5 ft)	IA-4	Pb-210	2.01E+02	4.7E+01	0.0E+00	1.1E-04	0.0E+00	6.3E+00	0.0E+00	1.3E-05	0.0E+00	6.1E+00	0.0E+00	4.8E-06	0.0E+00
Sub. (>0.5 ft)	IA-4	Ra-226	1.17E+02	4.3E+02	0.0E+00	6.0E-03	0.0E+00	1.3E+02	0.0E+00	1.6E-03	0.0E+00	2.1E+01	0.0E+00	7.8E-05	0.0E+00
Sub. (>0.5 ft)	IA-4	Th-228	1.80E-01	5.9E-01	0.0E+00	1.1E-06	0.0E+00	1.9E-01	0.0E+00	3.4E-07	0.0E+00	2.9E-02	0.0E+00	4.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-4	Th-230	1.80E+02	4.9E+00	2.2E+01	7.5E-05	3.1E-04	9.6E-01	6.3E+00	1.6E-05	8.0E-05	6.0E-01	1.5E+00	4.3E-07	3.6E-06
Sub. (>0.5 ft)	IA-4	Th-232	2.58E+00	3.5E-01	1.2E+01	1.5E-04	2.0E-04	6.7E-02	3.7E+00	3.6E-05	5.3E-05	4.3E-02	6.2E-01	5.3E-07	2.2E-06
Sub. (>0.5 ft)	IA-4	U-234	8.50E+01	1.1E+00	0.0E+00	3.4E-06	0.0E+00	2.0E-01	0.0E+00	5.1E-07	0.0E+00	1.4E-01	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	U-235	5.85E+00	1.5E+00	0.0E+00	1.2E-05	0.0E+00	4.8E-01	0.0E+00	3.2E-06	0.0E+00	8.0E-02	0.0E+00	1.6E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	U-238	8.49E+01	4.8E+00	0.0E+00	4.4E-05	0.0E+00	1.4E+00	0.0E+00	1.2E-05	0.0E+00	3.1E-01	0.0E+00	7.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	TOTAL		4.9E+02	3.4E+01	6.4E-03	5.1E-04	1.4E+02	1.0E+01	1.7E-03	1.3E-04	2.9E+01	2.1E+00	8.5E-05	5.7E-06
Surf. (<5 ft)	IA-4	Ac-227	4.55E+00	6.0E+00	0.0E+00	1.6E-05	0.0E+00	1.5E+00	0.0E+00	4.7E-06	0.0E+00	5.3E-01	0.0E+00	4.1E-07	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 26 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	IA-4	Pa-231	3.10E+00	1.4E+00	0.0E+00	6.6E-06	0.0E+00	2.3E-01	0.0E+00	1.6E-06	0.0E+00	1.6E-01	0.0E+00	5.2E-08	0.0E+00
Surf. (<5 ft)	IA-4	Pb-210	4.54E+02	1.1E+02	0.0E+00	2.5E-04	0.0E+00	1.4E+01	0.0E+00	3.0E-05	0.0E+00	1.4E+01	0.0E+00	1.1E-05	0.0E+00
Surf. (<5 ft)	IA-4	Ra-226	2.66E+02	9.7E+02	0.0E+00	1.4E-02	0.0E+00	3.1E+02	0.0E+00	3.7E-03	0.0E+00	4.8E+01	0.0E+00	1.8E-04	0.0E+00
Surf. (<5 ft)	IA-4	Ra-228	1.53E-01	3.0E-01	0.0E+00	3.2E-06	0.0E+00	9.5E-02	0.0E+00	1.0E-06	0.0E+00	1.5E-02	0.0E+00	7.9E-08	0.0E+00
Surf. (<5 ft)	IA-4	Th-228	6.80E-01	2.2E+00	0.0E+00	4.3E-06	0.0E+00	7.1E-01	0.0E+00	1.3E-06	0.0E+00	1.1E-01	0.0E+00	1.7E-07	0.0E+00
Surf. (<5 ft)	IA-4	Th-230	2.44E+03	6.6E+01	3.0E+02	1.0E-03	4.2E-03	1.3E+01	8.5E+01	2.2E-04	1.1E-03	8.2E+00	2.1E+01	5.8E-06	4.8E-05
Surf. (<5 ft)	IA-4	Th-232	2.89E+00	3.9E-01	1.3E+01	1.7E-04	2.3E-04	7.5E-02	4.1E+00	4.0E-05	5.9E-05	4.8E-02	6.9E-01	5.9E-07	2.4E-06
Surf. (<5 ft)	IA-4	U-234	7.13E+01	9.2E-01	0.0E+00	2.8E-06	0.0E+00	1.7E-01	0.0E+00	4.2E-07	0.0E+00	1.1E-01	0.0E+00	1.0E-07	0.0E+00
Surf. (<5 ft)	IA-4	U-235	3.00E+00	7.8E-01	0.0E+00	6.0E-06	0.0E+00	2.4E-01	0.0E+00	1.6E-06	0.0E+00	4.1E-02	0.0E+00	8.4E-08	0.0E+00
Surf. (<5 ft)	IA-4	U-238	7.12E+01	4.0E+00	0.0E+00	3.7E-05	0.0E+00	1.2E+00	0.0E+00	9.8E-06	0.0E+00	2.6E-01	0.0E+00	5.9E-07	0.0E+00
Surf. (<5 ft)	IA-4	TOTAL		1.2E+03	3.2E+02	1.5E-02	4.4E-03	3.4E+02	9.0E+01	4.1E-03	1.1E-03	7.1E+01	2.1E+01	2.0E-04	5.1E-05
Sub. (>0.5 ft)	IA-5	Ac-227	7.10E+00	9.4E+00	0.0E+00	2.5E-05	0.0E+00	2.3E+00	0.0E+00	7.3E-06	0.0E+00	8.2E-01	0.0E+00	6.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	Pa-231	8.29E+00	3.6E+00	0.0E+00	1.8E-05	0.0E+00	6.3E-01	0.0E+00	4.3E-06	0.0E+00	4.3E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	Pb-210	3.28E+01	7.8E+00	0.0E+00	1.8E-05	0.0E+00	1.0E+00	0.0E+00	2.1E-06	0.0E+00	1.0E+00	0.0E+00	7.9E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	Ra-226	1.83E+01	6.7E+01	0.0E+00	9.4E-04	0.0E+00	2.1E+01	0.0E+00	2.6E-04	0.0E+00	3.3E+00	0.0E+00	1.2E-05	0.0E+00
Sub. (>0.5 ft)	IA-5	Ra-228	6.00E-03	1.2E-02	0.0E+00	1.2E-07	0.0E+00	3.7E-03	0.0E+00	3.9E-08	0.0E+00	6.0E-04	0.0E+00	3.1E-09	0.0E+00
Sub. (>0.5 ft)	IA-5	Th-228	1.00E-01	3.3E-01	0.0E+00	6.3E-07	0.0E+00	1.0E-01	0.0E+00	1.9E-07	0.0E+00	1.6E-02	0.0E+00	2.5E-08	0.0E+00
Sub. (>0.5 ft)	IA-5	Th-230	2.94E+02	8.0E+00	3.6E+01	1.2E-04	5.1E-04	1.6E+00	1.0E+01	2.6E-05	1.3E-04	9.9E-01	2.5E+00	7.0E-07	5.8E-06
Sub. (>0.5 ft)	IA-5	Th-232	1.22E+00	1.6E-01	5.6E+00	7.0E-05	9.5E-05	3.2E-02	1.7E+00	1.7E-05	2.5E-05	2.0E-02	2.9E-01	2.5E-07	1.0E-06
Sub. (>0.5 ft)	IA-5	U-234	3.25E+01	4.2E-01	0.0E+00	1.3E-06	0.0E+00	7.8E-02	0.0E+00	1.9E-07	0.0E+00	5.2E-02	0.0E+00	4.6E-08	0.0E+00
Sub. (>0.5 ft)	IA-5	U-235	1.12E+00	2.9E-01	0.0E+00	2.2E-06	0.0E+00	9.1E-02	0.0E+00	6.1E-07	0.0E+00	1.5E-02	0.0E+00	3.1E-08	0.0E+00
Sub. (>0.5 ft)	IA-5	U-238	3.24E+01	1.8E+00	0.0E+00	1.7E-05	0.0E+00	5.3E-01	0.0E+00	4.5E-06	0.0E+00	1.2E-01	0.0E+00	2.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	TOTAL		9.8E+01	4.2E+01	1.2E-03	6.0E-04	2.7E+01	1.2E+01	3.2E-04	1.6E-04	6.8E+00	2.8E+00	1.5E-05	6.8E-06
Surf. (<5 ft)	IA-5	Ac-227	2.18E+01	2.9E+01	0.0E+00	7.6E-05	0.0E+00	7.2E+00	0.0E+00	2.2E-05	0.0E+00	2.5E+00	0.0E+00	1.9E-06	0.0E+00
Surf. (<5 ft)	IA-5	Pa-231	2.57E+01	1.1E+01	0.0E+00	5.5E-05	0.0E+00	1.9E+00	0.0E+00	1.3E-05	0.0E+00	1.3E+00	0.0E+00	4.3E-07	0.0E+00
Surf. (<5 ft)	IA-5	Pb-210	5.00E+01	1.2E+01	0.0E+00	2.8E-05	0.0E+00	1.6E+00	0.0E+00	3.3E-06	0.0E+00	1.5E+00	0.0E+00	1.2E-06	0.0E+00
Surf. (<5 ft)	IA-5	Ra-226	2.84E+01	1.0E+02	0.0E+00	1.5E-03	0.0E+00	3.3E+01	0.0E+00	4.0E-04	0.0E+00	5.1E+00	0.0E+00	1.9E-05	0.0E+00
Surf. (<5 ft)	IA-5	Ra-228	2.23E-01	4.4E-01	0.0E+00	4.6E-06	0.0E+00	1.4E-01	0.0E+00	1.5E-06	0.0E+00	2.2E-02	0.0E+00	1.1E-07	0.0E+00
Surf. (<5 ft)	IA-5	Th-228	2.60E-01	8.5E-01	0.0E+00	1.6E-06	0.0E+00	2.7E-01	0.0E+00	4.9E-07	0.0E+00	4.2E-02	0.0E+00	6.4E-08	0.0E+00
Surf. (<5 ft)	IA-5	Th-230	6.60E+02	1.8E+01	8.2E+01	2.7E-04	1.1E-03	3.5E+00	2.3E+01	5.9E-05	2.9E-04	2.2E+00	5.6E+00	1.6E-06	1.3E-05
Surf. (<5 ft)	IA-5	Th-232	1.52E+00	2.0E-01	7.0E+00	8.7E-05	1.2E-04	4.0E-02	2.2E+00	2.1E-05	3.1E-05	2.5E-02	3.6E-01	3.1E-07	1.3E-06
Surf. (<5 ft)	IA-5	U-234	5.05E+01	6.5E-01	0.0E+00	2.0E-06	0.0E+00	1.2E-01	0.0E+00	3.0E-07	0.0E+00	8.1E-02	0.0E+00	7.1E-08	0.0E+00
Surf. (<5 ft)	IA-5	U-235	3.39E+00	8.9E-01	0.0E+00	6.7E-06	0.0E+00	2.8E-01	0.0E+00	1.9E-06	0.0E+00	4.6E-02	0.0E+00	9.5E-08	0.0E+00
Surf. (<5 ft)	IA-5	U-238	5.04E+01	2.8E+00	0.0E+00	2.6E-05	0.0E+00	8.2E-01	0.0E+00	6.9E-06	0.0E+00	1.8E-01	0.0E+00	4.1E-07	0.0E+00
Surf. (<5 ft)	IA-5	TOTAL		1.8E+02	8.9E+01	2.0E-03	1.3E-03	4.8E+01	2.5E+01	5.3E-04	3.3E-04	1.3E+01	6.0E+00	2.5E-05	1.4E-05
Sub. (>0.5 ft)	IA-6	Ac-227	1.11E+01	1.5E+01	0.0E+00	3.9E-05	0.0E+00	3.7E+00	0.0E+00	1.1E-05	0.0E+00	1.3E+00	0.0E+00	9.9E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Pa-231	1.16E+01	5.1E+00	0.0E+00	2.5E-05	0.0E+00	8.8E-01	0.0E+00	6.0E-06	0.0E+00	6.0E-01	0.0E+00	1.9E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Pb-210	9.81E+00	2.3E+00	0.0E+00	5.4E-06	0.0E+00	3.1E-01	0.0E+00	6.4E-07	0.0E+00	3.0E-01	0.0E+00	2.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Ra-226	4.72E+00	1.7E+01	0.0E+00	2.4E-04	0.0E+00	5.4E+00	0.0E+00	6.7E-05	0.0E+00	8.5E-01	0.0E+00	3.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-6	Ra-228	2.63E-01	5.2E-01	0.0E+00	5.4E-06	0.0E+00	1.6E-01	0.0E+00	1.7E-06	0.0E+00	2.6E-02	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Th-228	4.30E-01	1.4E+00	0.0E+00	2.7E-06	0.0E+00	4.5E-01	0.0E+00	8.1E-07	0.0E+00	7.0E-02	0.0E+00	1.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Th-230	2.85E+02	7.8E+00	3.5E+01	1.2E-04	4.9E-04	1.5E+00	1.0E+01	2.5E-05	1.3E-04	9.6E-01	2.4E+00	6.8E-07	5.6E-06
Sub. (>0.5 ft)	IA-6	Th-232	2.05E+00	2.7E-01	9.4E+00	1.2E-04	1.6E-04	5.3E-02	2.9E+00	2.9E-05	4.2E-05	3.4E-02	4.9E-01	4.2E-07	1.7E-06
Sub. (>0.5 ft)	IA-6	U-234	3.09E+01	4.0E-01	0.0E+00	1.2E-06	0.0E+00	7.4E-02	0.0E+00	1.8E-07	0.0E+00	5.0E-02	0.0E+00	4.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-6	U-235	2.73E+00	7.1E-01	0.0E+00	5.4E-06	0.0E+00	2.2E-01	0.0E+00	1.5E-06	0.0E+00	3.7E-02	0.0E+00	7.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-6	U-238	3.08E+01	1.7E+00	0.0E+00	1.6E-05	0.0E+00	5.0E-01	0.0E+00	4.2E-06	0.0E+00	1.1E-01	0.0E+00	2.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	TOTAL		5.2E+01	4.5E+01	5.8E-04	6.5E-04	1.3E+01	1.3E+01	1.5E-04	1.7E-04	4.3E+00	2.9E+00	6.3E-06	7.4E-06
Surf. (<5 ft)	IA-6	Ac-227	1.77E+01	2.3E+01	0.0E+00	6.2E-05	0.0E+00	5.8E+00	0.0E+00	1.8E-05	0.0E+00	2.0E+00	0.0E+00	1.6E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 27 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	IA-6	Pa-231	1.86E+01	8.2E+00	0.0E+00	4.0E-05	0.0E+00	1.4E+00	0.0E+00	9.5E-06	0.0E+00	9.6E-01	0.0E+00	3.1E-07	0.0E+00
Surf. (<5 ft)	IA-6	Pb-210	1.64E+01	3.9E+00	0.0E+00	9.0E-06	0.0E+00	5.1E-01	0.0E+00	1.1E-06	0.0E+00	5.0E-01	0.0E+00	3.9E-07	0.0E+00
Surf. (<5 ft)	IA-6	Ra-226	8.57E+00	3.1E+01	0.0E+00	4.4E-04	0.0E+00	9.8E+00	0.0E+00	1.2E-04	0.0E+00	1.6E+00	0.0E+00	5.7E-06	0.0E+00
Surf. (<5 ft)	IA-6	Ra-228	3.93E-01	7.8E-01	0.0E+00	8.1E-06	0.0E+00	2.4E-01	0.0E+00	2.6E-06	0.0E+00	3.9E-02	0.0E+00	2.0E-07	0.0E+00
Surf. (<5 ft)	IA-6	Th-228	1.90E-01	6.2E-01	0.0E+00	1.2E-06	0.0E+00	2.0E-01	0.0E+00	3.6E-07	0.0E+00	3.1E-02	0.0E+00	4.7E-08	0.0E+00
Surf. (<5 ft)	IA-6	Th-230	4.62E+02	1.3E+01	5.7E+01	1.9E-04	8.0E-04	2.5E+00	1.6E+01	4.1E-05	2.1E-04	1.5E+00	3.9E+00	1.1E-06	9.1E-06
Surf. (<5 ft)	IA-6	Th-232	2.34E+00	3.1E-01	1.1E+01	1.3E-04	1.8E-04	6.1E-02	3.4E+00	3.3E-05	4.8E-05	3.9E-02	5.6E-01	4.8E-07	2.0E-06
Surf. (<5 ft)	IA-6	U-234	3.09E+01	4.0E-01	0.0E+00	1.2E-06	0.0E+00	7.4E-02	0.0E+00	1.8E-07	0.0E+00	5.0E-02	0.0E+00	4.3E-08	0.0E+00
Surf. (<5 ft)	IA-6	U-235	4.27E+00	1.1E+00	0.0E+00	8.5E-06	0.0E+00	3.5E-01	0.0E+00	2.3E-06	0.0E+00	5.8E-02	0.0E+00	1.2E-07	0.0E+00
Surf. (<5 ft)	IA-6	U-238	3.08E+01	1.7E+00	0.0E+00	1.6E-05	0.0E+00	5.0E-01	0.0E+00	4.2E-06	0.0E+00	1.1E-01	0.0E+00	2.5E-07	0.0E+00
Surf. (<5 ft)	IA-6	TOTAL		8.4E+01	6.8E+01	9.1E-04	9.8E-04	2.1E+01	2.0E+01	2.3E-04	2.5E-04	6.9E+00	4.5E+00	1.0E-05	1.1E-05
Sub. (>0.5 ft)	IA-7	Ac-227	1.16E-01	1.5E-01	0.0E+00	4.1E-07	0.0E+00	3.8E-02	0.0E+00	1.2E-07	0.0E+00	1.3E-02	0.0E+00	1.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	Pa-231	6.33E-01	2.8E-01	0.0E+00	1.3E-06	0.0E+00	4.8E-02	0.0E+00	3.2E-07	0.0E+00	3.3E-02	0.0E+00	1.1E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	Pb-210	4.45E+00	1.1E+00	0.0E+00	2.5E-06	0.0E+00	1.4E-01	0.0E+00	2.9E-07	0.0E+00	1.4E-01	0.0E+00	1.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-7	Ra-226	1.57E+00	5.7E+00	0.0E+00	8.1E-05	0.0E+00	1.8E+00	0.0E+00	2.2E-05	0.0E+00	2.8E-01	0.0E+00	1.0E-06	0.0E+00
Sub. (>0.5 ft)	IA-7	Th-228	1.30E-01	4.3E-01	0.0E+00	8.2E-07	0.0E+00	1.3E-01	0.0E+00	2.5E-07	0.0E+00	2.1E-02	0.0E+00	3.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	Th-230	1.11E+02	3.0E+00	1.4E+01	4.6E-05	1.9E-04	5.9E-01	3.9E+00	9.9E-06	5.0E-05	3.7E-01	9.4E-01	2.7E-07	2.2E-06
Sub. (>0.5 ft)	IA-7	Th-232	6.40E-01	8.6E-02	2.9E+00	3.7E-05	5.0E-05	1.7E-02	9.2E-01	8.9E-06	1.3E-05	1.1E-02	1.5E-01	1.3E-07	5.4E-07
Sub. (>0.5 ft)	IA-7	U-234	8.46E+00	1.1E-01	0.0E+00	3.4E-07	0.0E+00	2.0E-02	0.0E+00	5.0E-08	0.0E+00	1.4E-02	0.0E+00	1.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	U-235	7.52E-02	2.0E-02	0.0E+00	1.5E-07	0.0E+00	6.1E-03	0.0E+00	4.1E-08	0.0E+00	1.0E-03	0.0E+00	2.1E-09	0.0E+00
Sub. (>0.5 ft)	IA-7	U-238	8.41E+00	4.7E-01	0.0E+00	4.4E-06	0.0E+00	1.4E-01	0.0E+00	1.2E-06	0.0E+00	3.1E-02	0.0E+00	6.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	TOTAL		1.1E+01	1.7E+01	1.7E-04	2.4E-04	2.9E+00	4.8E+00	4.3E-05	6.3E-05	9.2E-01	1.1E+00	1.7E-06	2.7E-06
Surf. (<5 ft)	IA-7	Ac-227	1.27E+02	1.7E+02	0.0E+00	4.4E-04	0.0E+00	4.2E+01	0.0E+00	1.3E-04	0.0E+00	1.5E+01	0.0E+00	1.1E-05	0.0E+00
Surf. (<5 ft)	IA-7	Pa-231	1.26E+02	5.5E+01	0.0E+00	2.7E-04	0.0E+00	9.5E+00	0.0E+00	6.5E-05	0.0E+00	6.5E+00	0.0E+00	2.1E-06	0.0E+00
Surf. (<5 ft)	IA-7	Pb-210	1.40E+02	3.3E+01	0.0E+00	7.7E-05	0.0E+00	4.4E+00	0.0E+00	9.1E-06	0.0E+00	4.3E+00	0.0E+00	3.4E-06	0.0E+00
Surf. (<5 ft)	IA-7	Ra-226	8.15E+01	3.0E+02	0.0E+00	4.2E-03	0.0E+00	9.4E+01	0.0E+00	1.1E-03	0.0E+00	1.5E+01	0.0E+00	5.4E-05	0.0E+00
Surf. (<5 ft)	IA-7	Ra-228	1.48E+00	2.9E+00	0.0E+00	3.1E-05	0.0E+00	9.2E-01	0.0E+00	9.7E-06	0.0E+00	1.5E-01	0.0E+00	7.6E-07	0.0E+00
Surf. (<5 ft)	IA-7	Th-228	1.53E+00	5.0E+00	0.0E+00	9.7E-06	0.0E+00	1.6E+00	0.0E+00	2.9E-06	0.0E+00	2.5E-01	0.0E+00	3.8E-07	0.0E+00
Surf. (<5 ft)	IA-7	Th-230	2.01E+03	5.5E+01	2.5E+02	8.3E-04	3.5E-03	1.1E+01	7.0E+01	1.8E-04	8.9E-04	6.7E+00	1.7E+01	4.8E-06	4.0E-05
Surf. (<5 ft)	IA-7	Th-232	1.50E+00	2.0E-01	6.9E+00	8.6E-05	1.2E-04	3.9E-02	2.1E+00	2.1E-05	3.1E-05	2.5E-02	3.6E-01	3.1E-07	1.3E-06
Surf. (<5 ft)	IA-7	U-234	2.76E+01	3.6E-01	0.0E+00	1.1E-06	0.0E+00	6.6E-02	0.0E+00	1.6E-07	0.0E+00	4.4E-02	0.0E+00	3.9E-08	0.0E+00
Surf. (<5 ft)	IA-7	U-235	1.02E+01	2.7E+00	0.0E+00	2.0E-05	0.0E+00	8.3E-01	0.0E+00	5.6E-06	0.0E+00	1.4E-01	0.0E+00	2.9E-07	0.0E+00
Surf. (<5 ft)	IA-7	U-238	2.75E+01	1.6E+00	0.0E+00	1.4E-05	0.0E+00	4.5E-01	0.0E+00	3.8E-06	0.0E+00	1.0E-01	0.0E+00	2.3E-07	0.0E+00
Surf. (<5 ft)	IA-7	TOTAL		6.2E+02	2.6E+02	6.0E-03	3.6E-03	1.6E+02	7.2E+01	1.6E-03	9.3E-04	4.8E+01	1.7E+01	7.8E-05	4.1E-05
Sub. (>0.5 ft)	IA-8	Ac-227	3.88E-01	5.1E-01	0.0E+00	1.4E-06	0.0E+00	1.3E-01	0.0E+00	4.0E-07	0.0E+00	4.5E-02	0.0E+00	3.5E-08	0.0E+00
Sub. (>0.5 ft)	IA-8	Pa-231	6.03E-01	2.7E-01	0.0E+00	1.3E-06	0.0E+00	4.6E-02	0.0E+00	3.1E-07	0.0E+00	3.1E-02	0.0E+00	1.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-8	Pb-210	7.02E+00	1.7E+00	0.0E+00	3.9E-06	0.0E+00	2.2E-01	0.0E+00	4.6E-07	0.0E+00	2.1E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-8	Ra-226	3.08E+00	1.1E+01	0.0E+00	1.6E-04	0.0E+00	3.5E+00	0.0E+00	4.3E-05	0.0E+00	5.6E-01	0.0E+00	2.1E-06	0.0E+00
Sub. (>0.5 ft)	IA-8	Th-228	2.00E-01	6.6E-01	0.0E+00	1.3E-06	0.0E+00	2.1E-01	0.0E+00	3.8E-07	0.0E+00	3.3E-02	0.0E+00	4.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-8	Th-230	1.73E+02	4.7E+00	2.1E+01	7.2E-05	3.0E-04	9.2E-01	6.1E+00	1.5E-05	7.7E-05	5.8E-01	1.5E+00	4.1E-07	3.4E-06
Sub. (>0.5 ft)	IA-8	Th-232	1.26E+00	1.7E-01	5.8E+00	7.2E-05	9.8E-05	3.3E-02	1.8E+00	1.8E-05	2.6E-05	2.1E-02	3.0E-01	2.6E-07	1.1E-06
Sub. (>0.5 ft)	IA-8	U-234	1.25E+01	1.6E-01	0.0E+00	5.0E-07	0.0E+00	3.0E-02	0.0E+00	7.4E-08	0.0E+00	2.0E-02	0.0E+00	1.8E-08	0.0E+00
Sub. (>0.5 ft)	IA-8	U-235	1.46E-01	3.8E-02	0.0E+00	2.9E-07	0.0E+00	1.2E-02	0.0E+00	8.0E-08	0.0E+00	2.0E-03	0.0E+00	4.1E-09	0.0E+00
Sub. (>0.5 ft)	IA-8	U-238	1.24E+01	7.0E-01	0.0E+00	6.5E-06	0.0E+00	2.0E-01	0.0E+00	1.7E-06	0.0E+00	4.6E-02	0.0E+00	1.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-8	TOTAL		2.0E+01	2.7E+01	3.2E-04	4.0E-04	5.3E+00	7.9E+00	8.0E-05	1.0E-04	1.5E+00	1.8E+00	3.1E-06	4.5E-06
Surf. (<0.5 ft)	IA-8	Ac-227	8.21E+01	1.1E+02	0.0E+00	2.9E-04	0.0E+00	2.7E+01	0.0E+00	8.4E-05	0.0E+00	9.5E+00	0.0E+00	7.3E-06	0.0E+00
Surf. (<0.5 ft)	IA-8	Pa-231	8.63E+01	3.8E+01	0.0E+00	1.8E-04	0.0E+00	6.5E+00	0.0E+00	4.4E-05	0.0E+00	4.4E+00	0.0E+00	1.4E-06	0.0E+00
Surf. (<0.5 ft)	IA-8	Pb-210	5.90E+01	1.4E+01	0.0E+00	3.2E-05	0.0E+00	1.8E+00	0.0E+00	3.8E-06	0.0E+00	1.8E+00	0.0E+00	1.4E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 28 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	IA-8	Ra-226	3.37E+01	1.2E+02	0.0E+00	1.7E-03	0.0E+00	3.9E+01	0.0E+00	4.7E-04	0.0E+00	6.1E+00	0.0E+00	2.2E-05	0.0E+00
Surf. (<0.5 ft)	IA-8	Ra-228	6.63E-01	1.3E+00	0.0E+00	1.4E-05	0.0E+00	4.1E-01	0.0E+00	4.3E-06	0.0E+00	6.6E-02	0.0E+00	3.4E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	Th-228	6.40E-01	2.1E+00	0.0E+00	4.0E-06	0.0E+00	6.6E-01	0.0E+00	1.2E-06	0.0E+00	1.0E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	Th-230	1.75E+03	4.8E+01	2.2E+02	7.2E-04	3.0E-03	9.3E+00	6.1E+01	1.6E-04	7.8E-04	5.9E+00	1.5E+01	4.2E-06	3.5E-05
Surf. (<0.5 ft)	IA-8	Th-232	9.20E-01	1.2E-01	4.2E+00	5.3E-05	7.2E-05	2.4E-02	1.3E+00	1.3E-05	1.9E-05	1.5E-02	2.2E-01	1.9E-07	7.8E-07
Surf. (<0.5 ft)	IA-8	U-234	2.48E+01	3.2E-01	0.0E+00	9.9E-07	0.0E+00	5.9E-02	0.0E+00	1.5E-07	0.0E+00	4.0E-02	0.0E+00	3.5E-08	0.0E+00
Surf. (<0.5 ft)	IA-8	U-235	2.01E+01	5.3E+00	0.0E+00	4.0E-05	0.0E+00	1.6E+00	0.0E+00	1.1E-05	0.0E+00	2.8E-01	0.0E+00	5.7E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	U-238	2.47E+01	1.4E+00	0.0E+00	1.3E-05	0.0E+00	4.0E-01	0.0E+00	3.4E-06	0.0E+00	9.1E-02	0.0E+00	2.0E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	TOTAL		3.4E+02	2.2E+02	3.1E-03	3.1E-03	8.7E+01	6.3E+01	8.0E-04	8.0E-04	2.8E+01	1.5E+01	3.8E-05	3.5E-05
Sub. (>0.5 ft)	IA-9	Ac-227	5.09E+00	6.7E+00	0.0E+00	1.8E-05	0.0E+00	1.7E+00	0.0E+00	5.2E-06	0.0E+00	5.9E-01	0.0E+00	4.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-9	Pa-231	5.86E+00	2.6E+00	0.0E+00	1.2E-05	0.0E+00	4.4E-01	0.0E+00	3.0E-06	0.0E+00	3.0E-01	0.0E+00	9.8E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	Pb-210	5.58E+00	1.3E+00	0.0E+00	3.1E-06	0.0E+00	1.7E-01	0.0E+00	3.6E-07	0.0E+00	1.7E-01	0.0E+00	1.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-9	Ra-226	2.23E+00	8.1E+00	0.0E+00	1.2E-04	0.0E+00	2.6E+00	0.0E+00	3.1E-05	0.0E+00	4.0E-01	0.0E+00	1.5E-06	0.0E+00
Sub. (>0.5 ft)	IA-9	Ra-228	2.30E-02	4.5E-02	0.0E+00	4.8E-07	0.0E+00	1.4E-02	0.0E+00	1.5E-07	0.0E+00	2.3E-03	0.0E+00	1.2E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	Th-228	3.80E-01	1.2E+00	0.0E+00	2.4E-06	0.0E+00	3.9E-01	0.0E+00	7.2E-07	0.0E+00	6.2E-02	0.0E+00	9.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	Th-230	1.03E+02	2.8E+00	1.3E+01	4.3E-05	1.8E-04	5.5E-01	3.6E+00	9.2E-06	4.6E-05	3.5E-01	8.7E-01	2.5E-07	2.0E-06
Sub. (>0.5 ft)	IA-9	Th-232	5.90E-01	7.9E-02	2.7E+00	3.4E-05	4.6E-05	1.5E-02	8.4E-01	8.2E-06	1.2E-05	9.8E-03	1.4E-01	1.2E-07	5.0E-07
Sub. (>0.5 ft)	IA-9	U-234	5.51E+00	7.1E-02	0.0E+00	2.2E-07	0.0E+00	1.3E-02	0.0E+00	3.3E-08	0.0E+00	8.9E-03	0.0E+00	7.7E-09	0.0E+00
Sub. (>0.5 ft)	IA-9	U-235	8.19E-01	2.1E-01	0.0E+00	1.6E-06	0.0E+00	6.7E-02	0.0E+00	4.5E-07	0.0E+00	1.1E-02	0.0E+00	2.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	U-238	5.46E+00	3.1E-01	0.0E+00	2.8E-06	0.0E+00	8.9E-02	0.0E+00	7.5E-07	0.0E+00	2.0E-02	0.0E+00	4.5E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	TOTAL		2.4E+01	1.6E+01	2.3E-04	2.2E-04	6.0E+00	4.5E+00	6.0E-05	5.8E-05	1.9E+00	1.0E+00	2.7E-06	2.5E-06
Surf. (<0.5 ft)	IA-9	Ac-227	2.63E+00	3.5E+00	0.0E+00	9.2E-06	0.0E+00	8.7E-01	0.0E+00	2.7E-06	0.0E+00	3.0E-01	0.0E+00	2.3E-07	0.0E+00
Surf. (<0.5 ft)	IA-9	Pa-231	3.50E+00	1.5E+00	0.0E+00	7.4E-06	0.0E+00	2.6E-01	0.0E+00	1.8E-06	0.0E+00	1.8E-01	0.0E+00	5.8E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	Pb-210	2.87E+00	6.8E-01	0.0E+00	1.6E-06	0.0E+00	9.0E-02	0.0E+00	1.9E-07	0.0E+00	8.8E-02	0.0E+00	6.9E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	Ra-226	6.40E-01	2.3E+00	0.0E+00	3.3E-05	0.0E+00	7.4E-01	0.0E+00	9.0E-06	0.0E+00	1.2E-01	0.0E+00	4.3E-07	0.0E+00
Surf. (<0.5 ft)	IA-9	Th-228	1.50E-01	4.9E-01	0.0E+00	9.5E-07	0.0E+00	1.6E-01	0.0E+00	2.8E-07	0.0E+00	2.4E-02	0.0E+00	3.7E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	Th-230	3.26E+01	8.9E-01	4.0E+00	1.3E-05	5.6E-05	1.7E-01	1.1E+00	2.9E-06	1.5E-05	1.1E-01	2.8E-01	7.8E-08	6.5E-07
Surf. (<0.5 ft)	IA-9	Th-232	5.40E-01	7.2E-02	2.5E+00	3.1E-05	4.2E-05	1.4E-02	7.7E-01	7.5E-06	1.1E-05	9.0E-03	1.3E-01	1.1E-07	4.6E-07
Surf. (<0.5 ft)	IA-9	U-234	4.88E+00	6.3E-02	0.0E+00	1.9E-07	0.0E+00	1.2E-02	0.0E+00	2.9E-08	0.0E+00	7.9E-03	0.0E+00	6.9E-09	0.0E+00
Surf. (<0.5 ft)	IA-9	U-235	4.87E-01	1.3E-01	0.0E+00	9.7E-07	0.0E+00	4.0E-02	0.0E+00	2.7E-07	0.0E+00	6.7E-03	0.0E+00	1.4E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	U-238	4.83E+00	2.7E-01	0.0E+00	2.5E-06	0.0E+00	7.9E-02	0.0E+00	6.6E-07	0.0E+00	1.8E-02	0.0E+00	4.0E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	TOTAL		9.9E+00	6.5E+00	1.0E-04	9.8E-05	2.4E+00	1.9E+00	2.5E-05	2.6E-05	8.6E-01	4.1E-01	1.1E-06	1.1E-06
Sub. (>0.5 ft)	Norfork Southern	Pb-210	2.35E-01									7.2E-03	0.0E+00	5.7E-09	0.0E+00
Sub. (>0.5 ft)	Norfork Southern	Ra-226	2.01E+00									3.6E-01	0.0E+00	1.3E-06	0.0E+00
Sub. (>0.5 ft)	Norfork Southern	Th-230	1.51E+01									5.1E-02	1.3E-01	3.6E-08	3.0E-07
Sub. (>0.5 ft)	Norfork Southern	Th-232	8.50E-01									1.4E-02	2.0E-01	1.7E-07	7.2E-07
Sub. (>0.5 ft)	Norfork Southern	U-238	1.01E+01									3.7E-02	0.0E+00	8.3E-08	0.0E+00
Sub. (>0.5 ft)	Norfork Southern	TOTAL										4.7E-01	3.3E-01	1.6E-06	1.0E-06
Surf. (<0.5 ft)	Norfork Southern	Ac-227	4.20E-03									4.8E-04	0.0E+00	3.7E-10	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Pa-231	4.48E-02									2.3E-03	0.0E+00	7.5E-10	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Pb-210	4.28E-01									1.3E-02	0.0E+00	1.0E-08	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Ra-226	1.98E+00									3.6E-01	0.0E+00	1.3E-06	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Th-230	2.89E+01									9.7E-02	2.4E-01	6.9E-08	5.7E-07
Surf. (<0.5 ft)	Norfork Southern	Th-232	7.50E-01									1.2E-02	1.8E-01	1.5E-07	6.3E-07
Surf. (<0.5 ft)	Norfork Southern	U-238	1.01E+01									3.7E-02	0.0E+00	8.3E-08	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	TOTAL										5.2E-01	4.2E-01	1.6E-06	1.2E-06
All Depths	Norfork Southern	Pb-210	2.44E-01									7.4E-03	0.0E+00	5.9E-09	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 29 of 60)

			Exposure Point	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	Conc. (pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	Norfork Southern	Ra-226	1.83E+00									3.3E-01	0.0E+00	1.2E-06	0.0E+00
All Depths	Norfork Southern	Th-230	1.57E+01									5.3E-02	1.3E-01	3.7E-08	3.1E-07
All Depths	Norfork Southern	Th-232	7.60E-01									1.3E-02	1.8E-01	1.6E-07	6.4E-07
All Depths	Norfork Southern	U-238	9.72E+00									3.6E-02	0.0E+00	8.0E-08	0.0E+00
All Depths	Norfork Southern	TOTAL										4.4E-01	3.2E-01	1.5E-06	9.5E-07
Sub. (>0.5 ft)	ROAD ROW	Pb-210	1.88E-01	4.4E-02	0.0E+00	1.0E-07	0.0E+00	5.8E-03	0.0E+00	1.2E-08	0.0E+00	5.7E-03	0.0E+00	4.5E-09	0.0E+00
Sub. (>0.5 ft)	ROAD ROW	Ra-226	1.02E+00	3.7E+00	0.0E+00	5.3E-05	0.0E+00	1.2E+00	0.0E+00	1.4E-05	0.0E+00	1.8E-01	0.0E+00	6.8E-07	0.0E+00
Sub. (>0.5 ft)	ROAD ROW	Th-230	1.17E+01	3.2E-01	1.5E+00	4.9E-06	2.0E-05	6.2E-02	4.1E-01	1.0E-06	5.2E-06	3.9E-02	9.9E-02	2.8E-08	2.3E-07
Sub. (>0.5 ft)	ROAD ROW	Th-232	1.17E+00	1.6E-01	5.4E+00	6.7E-05	9.1E-05	3.0E-02	1.7E+00	1.6E-05	2.4E-05	1.9E-02	2.8E-01	2.4E-07	9.9E-07
Sub. (>0.5 ft)	ROAD ROW	U-238	1.04E+01	5.9E-01	0.0E+00	5.4E-06	0.0E+00	1.7E-01	0.0E+00	1.4E-06	0.0E+00	3.8E-02	0.0E+00	8.6E-08	0.0E+00
Sub. (>0.5 ft)	ROAD ROW	TOTAL		4.8E+00	6.8E+00	1.3E-04	1.1E-04	1.4E+00	2.1E+00	3.3E-05	2.9E-05	2.9E-01	3.8E-01	1.0E-06	1.2E-06
Surf. (<0.5 ft)	ROAD ROW	Ac-227	8.10E-02	1.1E-01	0.0E+00	2.8E-07	0.0E+00	2.7E-02	0.0E+00	8.3E-08	0.0E+00	9.3E-03	0.0E+00	7.2E-09	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Pa-231	5.42E-01	2.4E-01	0.0E+00	1.2E-06	0.0E+00	4.1E-02	0.0E+00	2.8E-07	0.0E+00	2.8E-02	0.0E+00	9.1E-09	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Pb-210	3.72E+00	8.8E-01	0.0E+00	2.1E-06	0.0E+00	1.2E-01	0.0E+00	2.4E-07	0.0E+00	1.1E-01	0.0E+00	9.0E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Ra-226	5.04E+00	1.8E+01	0.0E+00	2.6E-04	0.0E+00	5.8E+00	0.0E+00	7.1E-05	0.0E+00	9.1E-01	0.0E+00	3.4E-06	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Ra-228	4.30E-02	8.5E-02	0.0E+00	8.9E-07	0.0E+00	2.7E-02	0.0E+00	2.8E-07	0.0E+00	4.3E-03	0.0E+00	2.2E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Th-228	3.30E-01	1.1E+00	0.0E+00	2.1E-06	0.0E+00	3.4E-01	0.0E+00	6.2E-07	0.0E+00	5.4E-02	0.0E+00	8.1E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Th-230	2.64E+02	7.2E+00	3.3E+01	1.1E-04	4.5E-04	1.4E+00	9.3E+00	2.4E-05	1.2E-04	8.9E-01	2.2E+00	6.3E-07	5.2E-06
Surf. (<0.5 ft)	ROAD ROW	Th-232	1.03E+00	1.4E-01	4.7E+00	5.9E-05	8.0E-05	2.7E-02	1.5E+00	1.4E-05	2.1E-05	1.7E-02	2.5E-01	2.1E-07	8.7E-07
Surf. (<0.5 ft)	ROAD ROW	U-234	2.06E+00	2.7E-02	0.0E+00	8.2E-08	0.0E+00	4.9E-03	0.0E+00	1.2E-08	0.0E+00	3.3E-03	0.0E+00	2.9E-09	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	U-235	1.78E-01	4.7E-02	0.0E+00	3.5E-07	0.0E+00	1.4E-02	0.0E+00	9.8E-08	0.0E+00	2.4E-03	0.0E+00	5.0E-09	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	U-238	1.06E+01	6.0E-01	0.0E+00	5.5E-06	0.0E+00	1.7E-01	0.0E+00	1.5E-06	0.0E+00	3.9E-02	0.0E+00	8.7E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	TOTAL		2.9E+01	3.7E+01	4.4E-04	5.4E-04	8.0E+00	1.1E+01	1.1E-04	1.4E-04	2.1E+00	2.5E+00	4.5E-06	6.1E-06
All Depths	ROAD ROW	Ac-227	8.10E-02	1.1E-01	0.0E+00	2.8E-07	0.0E+00	2.7E-02	0.0E+00	8.3E-08	0.0E+00	9.3E-03	0.0E+00	7.2E-09	0.0E+00
All Depths	ROAD ROW	Pa-231	5.42E-01	2.4E-01	0.0E+00	1.2E-06	0.0E+00	4.1E-02	0.0E+00	2.8E-07	0.0E+00	2.8E-02	0.0E+00	9.1E-09	0.0E+00
All Depths	ROAD ROW	Pb-210	6.99E-01	1.7E-01	0.0E+00	3.8E-07	0.0E+00	2.2E-02	0.0E+00	4.6E-08	0.0E+00	2.1E-02	0.0E+00	1.7E-08	0.0E+00
All Depths	ROAD ROW	Ra-226	1.84E+00	6.7E+00	0.0E+00	9.5E-05	0.0E+00	2.1E+00	0.0E+00	2.6E-05	0.0E+00	3.3E-01	0.0E+00	1.2E-06	0.0E+00
All Depths	ROAD ROW	Ra-228	4.30E-02	8.5E-02	0.0E+00	8.9E-07	0.0E+00	2.7E-02	0.0E+00	2.8E-07	0.0E+00	4.3E-03	0.0E+00	2.2E-08	0.0E+00
All Depths	ROAD ROW	Th-228	3.30E-01	1.1E+00	0.0E+00	2.1E-06	0.0E+00	3.4E-01	0.0E+00	6.2E-07	0.0E+00	5.4E-02	0.0E+00	8.1E-08	0.0E+00
All Depths	ROAD ROW	Th-230	4.82E+01	1.3E+00	6.0E+00	2.0E-05	8.3E-05	2.6E-01	1.7E+00	4.3E-06	2.1E-05	1.6E-01	4.1E-01	1.1E-07	9.5E-07
All Depths	ROAD ROW	Th-232	1.11E+00	1.5E-01	5.1E+00	6.4E-05	8.6E-05	2.9E-02	1.6E+00	1.5E-05	2.3E-05	1.8E-02	2.7E-01	2.3E-07	9.4E-07
All Depths	ROAD ROW	U-235	1.78E-01	4.7E-02	0.0E+00	3.5E-07	0.0E+00	1.4E-02	0.0E+00	9.8E-08	0.0E+00	2.4E-03	0.0E+00	5.0E-09	0.0E+00
All Depths	ROAD ROW	U-238	1.03E+01	5.8E-01	0.0E+00	5.4E-06	0.0E+00	1.7E-01	0.0E+00	1.4E-06	0.0E+00	3.8E-02	0.0E+00	8.5E-08	0.0E+00
All Depths	ROAD ROW	TOTAL		1.0E+01	1.1E+01	1.9E-04	1.7E-04	3.0E+00	3.3E+00	4.9E-05	4.4E-05	6.7E-01	6.7E-01	1.8E-06	1.9E-06
Sub. (>0.5 ft)	SLAPS	Ac-227	4.18E+00	5.5E+00	0.0E+00	1.5E-05	0.0E+00	1.4E+00	0.0E+00	4.3E-06	0.0E+00	4.8E-01	0.0E+00	3.7E-07	0.0E+00
Sub. (>0.5 ft)	SLAPS	Pa-231	4.57E+00	2.0E+00	0.0E+00	9.7E-06	0.0E+00	3.4E-01	0.0E+00	2.3E-06	0.0E+00	2.3E-01	0.0E+00	7.6E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	Pb-210	7.57E+01	1.8E+01	0.0E+00	4.2E-05	0.0E+00	2.4E+00	0.0E+00	4.9E-06	0.0E+00	2.3E+00	0.0E+00	1.8E-06	0.0E+00
Sub. (>0.5 ft)	SLAPS	Ra-226	4.35E+01	1.6E+02	0.0E+00	2.2E-03	0.0E+00	5.0E+01	0.0E+00	6.1E-04	0.0E+00	7.9E+00	0.0E+00	2.9E-05	0.0E+00
Sub. (>0.5 ft)	SLAPS	Ra-228	8.00E-03	1.6E-02	0.0E+00	1.7E-07	0.0E+00	5.0E-03	0.0E+00	5.2E-08	0.0E+00	8.0E-04	0.0E+00	4.1E-09	0.0E+00
Sub. (>0.5 ft)	SLAPS	Th-228	1.20E-01	3.9E-01	0.0E+00	7.6E-07	0.0E+00	1.2E-01	0.0E+00	2.3E-07	0.0E+00	2.0E-02	0.0E+00	3.0E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	Th-230	2.19E+02	6.0E+00	2.7E+01	9.1E-05	3.8E-04	1.2E+00	7.7E+00	2.0E-05	9.8E-05	7.4E-01	1.9E+00	5.2E-07	4.3E-06
Sub. (>0.5 ft)	SLAPS	Th-232	1.39E+00	1.9E-01	6.4E+00	8.0E-05	1.1E-04	3.6E-02	2.0E+00	1.9E-05	2.9E-05	2.3E-02	3.3E-01	2.9E-07	1.2E-06
Sub. (>0.5 ft)	SLAPS	U-234	4.12E+01	5.3E-01	0.0E+00	1.6E-06	0.0E+00	9.9E-02	0.0E+00	2.5E-07	0.0E+00	6.6E-02	0.0E+00	5.8E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	U-235	1.41E+00	3.7E-01	0.0E+00	2.8E-06	0.0E+00	1.1E-01	0.0E+00	7.7E-07	0.0E+00	1.9E-02	0.0E+00	4.0E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	U-238	4.11E+01	2.3E+00	0.0E+00	2.1E-05	0.0E+00	6.7E-01	0.0E+00	5.7E-06	0.0E+00	1.5E-01	0.0E+00	3.4E-07	0.0E+00
Sub. (>0.5 ft)	SLAPS	TOTAL		1.9E+02	3.4E+01	2.5E-03	4.9E-04	5.6E+01	9.7E+00	6.7E-04	1.3E-04	1.2E+01	2.2E+00	3.3E-05	5.5E-06
Surf. (<5 ft)	SLAPS	Ac-227	3.24E+01	4.3E+01	0.0E+00	1.1E-04	0.0E+00	1.1E+01	0.0E+00	3.3E-05	0.0E+00	3.7E+00	0.0E+00	2.9E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 30 of 60)

			Exposure Point Conc.	RESIDENTIAL				INDUSTRIAL				MAINTENANCE			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	SLAPS	Pa-231	3.39E+01	1.5E+01	0.0E+00	7.2E-05	0.0E+00	2.6E+00	0.0E+00	1.7E-05	0.0E+00	1.7E+00	0.0E+00	5.7E-07	0.0E+00
Surf. (<5 ft)	SLAPS	Pb-210	1.00E+02	2.4E+01	0.0E+00	5.5E-05	0.0E+00	3.1E+00	0.0E+00	6.5E-06	0.0E+00	3.0E+00	0.0E+00	2.4E-06	0.0E+00
Surf. (<5 ft)	SLAPS	Ra-226	5.78E+01	2.1E+02	0.0E+00	3.0E-03	0.0E+00	6.6E+01	0.0E+00	8.1E-04	0.0E+00	1.0E+01	0.0E+00	3.9E-05	0.0E+00
Surf. (<5 ft)	SLAPS	Ra-228	3.73E-01	7.4E-01	0.0E+00	7.7E-06	0.0E+00	2.3E-01	0.0E+00	2.4E-06	0.0E+00	3.7E-02	0.0E+00	1.9E-07	0.0E+00
Surf. (<5 ft)	SLAPS	Th-228	4.10E-01	1.3E+00	0.0E+00	2.6E-06	0.0E+00	4.3E-01	0.0E+00	7.7E-07	0.0E+00	6.7E-02	0.0E+00	1.0E-07	0.0E+00
Surf. (<5 ft)	SLAPS	Th-230	8.21E+02	2.2E+01	1.0E+02	3.4E-04	1.4E-03	4.4E+00	2.9E+01	7.3E-05	3.7E-04	2.8E+00	6.9E+00	2.0E-06	1.6E-05
Surf. (<5 ft)	SLAPS	Th-232	1.87E+00	2.5E-01	8.6E+00	1.1E-04	1.5E-04	4.9E-02	2.7E+00	2.6E-05	3.8E-05	3.1E-02	4.5E-01	3.8E-07	1.6E-06
Surf. (<5 ft)	SLAPS	U-234	4.85E+01	6.3E-01	0.0E+00	1.9E-06	0.0E+00	1.2E-01	0.0E+00	2.9E-07	0.0E+00	7.8E-02	0.0E+00	6.8E-08	0.0E+00
Surf. (<5 ft)	SLAPS	U-235	4.16E+00	1.1E+00	0.0E+00	8.3E-06	0.0E+00	3.4E-01	0.0E+00	2.3E-06	0.0E+00	5.7E-02	0.0E+00	1.2E-07	0.0E+00
Surf. (<5 ft)	SLAPS	U-238	4.84E+01	2.7E+00	0.0E+00	2.5E-05	0.0E+00	7.9E-01	0.0E+00	6.7E-06	0.0E+00	1.8E-01	0.0E+00	4.0E-07	0.0E+00
Surf. (<5 ft)	SLAPS	TOTAL		3.2E+02	1.1E+02	3.7E-03	1.6E-03	8.9E+01	3.1E+01	9.8E-04	4.0E-04	2.2E+01	7.4E+00	4.8E-05	1.8E-05
All Depths	Stone Container	Ac-227	2.78E+00	3.7E+00	0.0E+00	9.7E-06	0.0E+00	9.2E-01	0.0E+00	2.8E-06	0.0E+00	3.2E-01	0.0E+00	2.5E-07	0.0E+00
All Depths	Stone Container	Pa-231	3.34E+00	1.5E+00	0.0E+00	7.1E-06	0.0E+00	2.5E-01	0.0E+00	1.7E-06	0.0E+00	1.7E-01	0.0E+00	5.6E-08	0.0E+00
All Depths	Stone Container	Pb-210	6.53E+00	1.5E+00	0.0E+00	3.6E-06	0.0E+00	2.0E-01	0.0E+00	4.3E-07	0.0E+00	2.0E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	Stone Container	Ra-226	1.67E+00	6.1E+00	0.0E+00	8.6E-05	0.0E+00	1.9E+00	0.0E+00	2.4E-05	0.0E+00	3.0E-01	0.0E+00	1.1E-06	0.0E+00
All Depths	Stone Container	Ra-228	8.30E-02	1.6E-01	0.0E+00	1.7E-06	0.0E+00	5.1E-02	0.0E+00	5.4E-07	0.0E+00	8.3E-03	0.0E+00	4.3E-08	0.0E+00
All Depths	Stone Container	Th-230	1.17E+02	3.2E+00	1.5E+01	4.9E-05	2.0E-04	6.2E-01	4.1E+00	1.0E-05	5.2E-05	3.9E-01	9.9E-01	2.8E-07	2.3E-06
All Depths	Stone Container	Th-232	8.40E-01	1.1E-01	3.9E+00	4.8E-05	6.5E-05	2.2E-02	1.2E+00	1.2E-05	1.7E-05	1.4E-02	2.0E-01	1.7E-07	7.1E-07
All Depths	Stone Container	U-234	9.17E+00	1.2E-01	0.0E+00	3.7E-07	0.0E+00	2.2E-02	0.0E+00	5.5E-08	0.0E+00	1.5E-02	0.0E+00	1.3E-08	0.0E+00
All Depths	Stone Container	U-235	4.14E-01	1.1E-01	0.0E+00	8.2E-07	0.0E+00	3.4E-02	0.0E+00	2.3E-07	0.0E+00	5.7E-03	0.0E+00	1.2E-08	0.0E+00
All Depths	Stone Container	U-238	9.12E+00	5.1E-01	0.0E+00	4.7E-06	0.0E+00	1.5E-01	0.0E+00	1.3E-06	0.0E+00	3.3E-02	0.0E+00	7.5E-08	0.0E+00
All Depths	Stone Container	TOTAL		1.7E+01	1.8E+01	2.1E-04	2.7E-04	4.2E+00	5.3E+00	5.3E-05	7.0E-05	1.5E+00	1.2E+00	2.2E-06	3.0E-06
Sub. (>0.5 ft)	Wabash/VP-2(C)	Pb-210	9.24E-02	2.2E-02	0.0E+00	5.1E-08	0.0E+00	2.9E-03	0.0E+00	6.0E-09	0.0E+00	2.8E-03	0.0E+00	2.2E-09	0.0E+00
Sub. (>0.5 ft)	Wabash/VP-2(C)	Ra-226	1.80E-01	6.6E-01	0.0E+00	9.3E-06	0.0E+00	2.1E-01	0.0E+00	2.5E-06	0.0E+00	3.3E-02	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	Wabash/VP-2(C)	Th-230	4.94E+00	1.3E-01	6.1E-01	2.0E-06	8.5E-06	2.6E-02	1.7E-01	4.4E-07	2.2E-06	1.7E-02	4.2E-02	1.2E-08	9.8E-08
Sub. (>0.5 ft)	Wabash/VP-2(C)	Th-232	8.50E-01	1.1E-01	3.9E+00	4.9E-05	6.6E-05	2.2E-02	1.2E+00	1.2E-05	1.7E-05	1.4E-02	2.0E-01	1.7E-07	7.2E-07
Sub. (>0.5 ft)	Wabash/VP-2(C)	U-238	6.72E+00	3.8E-01	0.0E+00	3.5E-06	0.0E+00	1.1E-01	0.0E+00	9.2E-07	0.0E+00	2.5E-02	0.0E+00	5.5E-08	0.0E+00
Sub. (>0.5 ft)	Wabash/VP-2(C)	TOTAL		1.3E+00	4.5E+00	6.4E-05	7.5E-05	3.7E-01	1.4E+00	1.6E-05	2.0E-05	9.1E-02	2.5E-01	3.6E-07	8.2E-07
Surf. (<0.5 ft)	Wabash/VP-2(C)	Pb-210	9.35E-02	2.2E-02	0.0E+00	5.1E-08	0.0E+00	2.9E-03	0.0E+00	6.1E-09	0.0E+00	2.9E-03	0.0E+00	2.3E-09	0.0E+00
Surf. (<0.5 ft)	Wabash/VP-2(C)	Ra-226	1.13E+00	4.1E+00	0.0E+00	5.8E-05	0.0E+00	1.3E+00	0.0E+00	1.6E-05	0.0E+00	2.0E-01	0.0E+00	7.5E-07	0.0E+00
Surf. (<0.5 ft)	Wabash/VP-2(C)	Th-230	5.02E+00	1.4E-01	6.2E-01	2.1E-06	8.6E-06	2.7E-02	1.8E-01	4.5E-07	2.2E-06	1.7E-02	4.2E-02	1.2E-08	9.9E-08
Surf. (<0.5 ft)	Wabash/VP-2(C)	Th-232	1.37E+00	1.8E-01	6.3E+00	7.8E-05	1.1E-04	3.6E-02	2.0E+00	1.9E-05	2.8E-05	2.3E-02	3.3E-01	2.8E-07	1.2E-06
Surf. (<0.5 ft)	Wabash/VP-2(C)	U-238	1.12E+01	6.3E-01	0.0E+00	5.8E-06	0.0E+00	1.8E-01	0.0E+00	1.5E-06	0.0E+00	4.1E-02	0.0E+00	9.2E-08	0.0E+00
Surf. (<0.5 ft)	Wabash/VP-2(C)	TOTAL		5.1E+00	6.9E+00	1.4E-04	1.2E-04	1.5E+00	2.1E+00	3.7E-05	3.0E-05	2.9E-01	3.7E-01	1.1E-06	1.3E-06
All Depths	Wabash/VP-2(C)	Pb-210	8.65E-02	2.0E-02	0.0E+00	4.8E-08	0.0E+00	2.7E-03	0.0E+00	5.6E-09	0.0E+00	2.6E-03	0.0E+00	2.1E-09	0.0E+00
All Depths	Wabash/VP-2(C)	Ra-226	8.80E-01	3.2E+00	0.0E+00	4.5E-05	0.0E+00	1.0E+00	0.0E+00	1.2E-05	0.0E+00	1.6E-01	0.0E+00	5.9E-07	0.0E+00
All Depths	Wabash/VP-2(C)	Th-230	4.52E+00	1.2E-01	5.6E-01	1.9E-06	7.8E-06	2.4E-02	1.6E-01	4.0E-07	2.0E-06	1.5E-02	3.8E-02	1.1E-08	8.9E-08
All Depths	Wabash/VP-2(C)	Th-232	1.08E+00	1.4E-01	5.0E+00	6.2E-05	8.4E-05	2.8E-02	1.5E+00	1.5E-05	2.2E-05	1.8E-02	2.6E-01	2.2E-07	9.1E-07
All Depths	Wabash/VP-2(C)	U-238	9.72E+00	5.5E-01	0.0E+00	5.1E-06	0.0E+00	1.6E-01	0.0E+00	1.3E-06	0.0E+00	3.6E-02	0.0E+00	8.0E-08	0.0E+00
All Depths	Wabash/VP-2(C)	TOTAL		4.0E+00	5.5E+00	1.1E-04	9.2E-05	1.2E+00	1.7E+00	2.9E-05	2.4E-05	2.3E-01	3.0E-01	9.0E-07	1.0E-06

Attachment 12. Radiological Doses and Risks for each Property (page 31 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	09K120040/VP-3(C)	Ac-227	5.60E-02	9.0E-04	0.0E+00	1.9E-09	0.0E+00	7.4E-02	0.0E+00	1.3E-08	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Pa-231	1.04E-01	2.9E-04	0.0E+00	6.8E-10	0.0E+00	5.4E-02	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Pb-210	5.32E-01	4.4E-04	0.0E+00	4.4E-10	0.0E+00	1.6E-01	0.0E+00	2.1E-08	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Ra-226	1.13E+00	7.1E-02	0.0E+00	3.5E-07	0.0E+00	2.8E+00	0.0E+00	1.6E-06	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	Th-230	3.63E+01	7.8E-03	6.6E-02	2.7E-08	3.2E-07	1.3E+00	3.8E+00	8.3E-08	1.4E-06
Sub. (>0.5 ft)	09K120040/VP-3(C)	Th-232	3.10E-01	3.2E-04	2.4E-02	4.1E-08	1.3E-07	5.6E-02	9.9E-01	6.7E-10	5.4E-07
Sub. (>0.5 ft)	09K120040/VP-3(C)	U-238	1.52E+00	1.3E-03	0.0E+00	4.8E-09	0.0E+00	6.9E-02	0.0E+00	2.6E-08	0.0E+00
Sub. (>0.5 ft)	09K120040/VP-3(C)	TOTAL		8.2E-02	9.0E-02	4.3E-07	4.4E-07	4.5E+00	4.8E+00	1.8E-06	2.0E-06
Surf. (<0.5 ft)	09K120040/VP-3(C)	Pb-210	1.86E-01	1.6E-04	0.0E+00	1.5E-10	0.0E+00	5.5E-02	0.0E+00	7.5E-09	0.0E+00
Surf. (<0.5 ft)	09K120040/VP-3(C)	Ra-226	6.50E-01	4.1E-02	0.0E+00	2.0E-07	0.0E+00	1.6E+00	0.0E+00	9.4E-07	0.0E+00
Surf. (<0.5 ft)	09K120040/VP-3(C)	Th-230	1.16E+01	2.5E-03	2.1E-02	8.6E-09	1.0E-07	4.2E-01	1.2E+00	2.6E-08	4.6E-07
Surf. (<0.5 ft)	09K120040/VP-3(C)	Th-232	1.01E+00	1.1E-03	7.9E-02	1.3E-07	4.1E-07	1.8E-01	3.2E+00	2.2E-09	1.8E-06
Surf. (<0.5 ft)	09K120040/VP-3(C)	U-238	8.69E+00	7.4E-03	0.0E+00	2.7E-08	0.0E+00	4.0E-01	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	09K120040/VP-3(C)	TOTAL		5.2E-02	1.0E-01	3.7E-07	5.1E-07	2.7E+00	4.4E+00	1.1E-06	2.2E-06
All Depths	09K120040/VP-3(C)	Pb-210	1.99E-01	1.7E-04	0.0E+00	1.7E-10	0.0E+00	5.8E-02	0.0E+00	8.0E-09	0.0E+00
All Depths	09K120040/VP-3(C)	Ra-226	6.90E-01	4.3E-02	0.0E+00	2.2E-07	0.0E+00	1.7E+00	0.0E+00	1.0E-06	0.0E+00
All Depths	09K120040/VP-3(C)	Th-230	1.25E+01	2.7E-03	2.3E-02	9.2E-09	1.1E-07	4.6E-01	1.3E+00	2.9E-08	5.0E-07
All Depths	09K120040/VP-3(C)	Th-232	8.50E-01	8.9E-04	6.6E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.5E-06
All Depths	09K120040/VP-3(C)	U-238	1.52E+00	1.3E-03	0.0E+00	4.8E-09	0.0E+00	6.9E-02	0.0E+00	2.6E-08	0.0E+00
All Depths	09K120040/VP-3(C)	TOTAL		4.8E-02	8.9E-02	3.4E-07	4.5E-07	2.4E+00	4.0E+00	1.1E-06	2.0E-06
Sub. (>0.5 ft)	09K120116/VP-5(C)	Ac-227	2.17E-01	3.5E-03	0.0E+00	7.3E-09	0.0E+00	2.9E-01	0.0E+00	5.0E-08	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Pa-231	2.88E-01	8.1E-04	0.0E+00	1.9E-09	0.0E+00	1.5E-01	0.0E+00	3.7E-09	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Pb-210	8.54E-01	7.1E-04	0.0E+00	7.1E-10	0.0E+00	2.5E-01	0.0E+00	3.4E-08	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Ra-226	8.90E-01	5.6E-02	0.0E+00	2.8E-07	0.0E+00	2.2E+00	0.0E+00	1.3E-06	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	Th-230	5.93E+01	1.3E-02	1.1E-01	4.4E-08	5.2E-07	2.2E+00	6.2E+00	1.3E-07	2.4E-06
Sub. (>0.5 ft)	09K120116/VP-5(C)	Th-232	8.90E-01	9.3E-04	6.9E-02	1.2E-07	3.6E-07	1.6E-01	2.8E+00	1.9E-09	1.6E-06
Sub. (>0.5 ft)	09K120116/VP-5(C)	U-238	4.45E+00	3.8E-03	0.0E+00	1.4E-08	0.0E+00	2.0E-01	0.0E+00	7.7E-08	0.0E+00
Sub. (>0.5 ft)	09K120116/VP-5(C)	TOTAL		7.8E-02	1.8E-01	4.7E-07	8.8E-07	5.4E+00	9.0E+00	1.6E-06	3.9E-06
Surf. (<0.5 ft)	09K120116/VP-5(C)	Pb-210	1.96E-01	1.6E-04	0.0E+00	1.6E-10	0.0E+00	5.7E-02	0.0E+00	7.9E-09	0.0E+00
Surf. (<0.5 ft)	09K120116/VP-5(C)	Ra-226	5.10E-01	3.2E-02	0.0E+00	1.6E-07	0.0E+00	1.3E+00	0.0E+00	7.4E-07	0.0E+00
Surf. (<0.5 ft)	09K120116/VP-5(C)	Th-230	1.23E+01	2.6E-03	2.2E-02	9.1E-09	1.1E-07	4.5E-01	1.3E+00	2.8E-08	4.9E-07
Surf. (<0.5 ft)	09K120116/VP-5(C)	Th-232	1.89E+00	2.0E-03	1.5E-01	2.5E-07	7.6E-07	3.4E-01	6.1E+00	4.1E-09	3.3E-06
Surf. (<0.5 ft)	09K120116/VP-5(C)	U-238	2.52E+00	2.2E-03	0.0E+00	7.9E-09	0.0E+00	1.1E-01	0.0E+00	4.4E-08	0.0E+00
Surf. (<0.5 ft)	09K120116/VP-5(C)	TOTAL		3.9E-02	1.7E-01	4.3E-07	8.7E-07	2.2E+00	7.3E+00	8.2E-07	3.8E-06
All Depths	09K120116/VP-5(C)	Pa-231	1.68E-02	4.7E-05	0.0E+00	1.1E-10	0.0E+00	8.8E-03	0.0E+00	2.2E-10	0.0E+00
All Depths	09K120116/VP-5(C)	Pb-210	3.79E-01	3.2E-04	0.0E+00	3.2E-10	0.0E+00	1.1E-01	0.0E+00	1.5E-08	0.0E+00
All Depths	09K120116/VP-5(C)	Ra-226	4.80E-01	3.0E-02	0.0E+00	1.5E-07	0.0E+00	1.2E+00	0.0E+00	7.0E-07	0.0E+00
All Depths	09K120116/VP-5(C)	Th-230	2.54E+01	5.4E-03	4.6E-02	1.9E-08	2.2E-07	9.3E-01	2.6E+00	5.8E-08	1.0E-06
All Depths	09K120116/VP-5(C)	Th-232	6.10E-01	6.4E-04	4.7E-02	8.1E-08	2.5E-07	1.1E-01	2.0E+00	1.3E-09	1.1E-06
All Depths	09K120116/VP-5(C)	U-238	2.52E+00	2.2E-03	0.0E+00	7.9E-09	0.0E+00	1.1E-01	0.0E+00	4.4E-08	0.0E+00
All Depths	09K120116/VP-5(C)	TOTAL		3.9E-02	9.4E-02	2.6E-07	4.7E-07	2.5E+00	4.6E+00	8.1E-07	2.1E-06
Sub. (>0.5 ft)	09K120127/VP-4(C)	Pb-210	5.36E-02	4.5E-05	0.0E+00	4.5E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
Sub. (>0.5 ft)	09K120127/VP-4(C)	Ra-226	1.50E-01	9.4E-03	0.0E+00	4.7E-08	0.0E+00	3.7E-01	0.0E+00	2.2E-07	0.0E+00
Sub. (>0.5 ft)	09K120127/VP-4(C)	Th-230	2.17E+00	4.6E-04	4.0E-03	1.6E-09	1.9E-08	7.9E-02	2.3E-01	4.9E-09	8.7E-08
Sub. (>0.5 ft)	09K120127/VP-4(C)	U-238	4.34E+00	3.7E-03	0.0E+00	1.4E-08	0.0E+00	2.0E-01	0.0E+00	7.5E-08	0.0E+00
Sub. (>0.5 ft)	09K120127/VP-4(C)	TOTAL		1.4E-02	4.0E-03	6.2E-08	1.9E-08	6.6E-01	2.3E-01	3.0E-07	8.7E-08

Attachment 12. Radiological Doses and Risks for each Property (page 32 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
Surf. (<0.5 ft)	09K120127/VP-4(C)	Pb-210	7.49E-02	6.2E-05	0.0E+00	6.2E-11	0.0E+00	2.2E-02	0.0E+00	3.0E-09	0.0E+00
Surf. (<0.5 ft)	09K120127/VP-4(C)	Ra-226	5.70E-01	3.6E-02	0.0E+00	1.8E-07	0.0E+00	1.4E+00	0.0E+00	8.3E-07	0.0E+00
Surf. (<0.5 ft)	09K120127/VP-4(C)	Th-230	3.69E+00	7.9E-04	6.7E-03	2.7E-09	3.2E-08	1.3E-01	3.8E-01	8.4E-09	1.5E-07
Surf. (<0.5 ft)	09K120127/VP-4(C)	Th-232	1.43E+00	1.5E-03	1.1E-01	1.9E-07	5.8E-07	2.6E-01	4.6E+00	3.1E-09	2.5E-06
Surf. (<0.5 ft)	09K120127/VP-4(C)	U-238	6.56E+00	5.6E-03	0.0E+00	2.1E-08	0.0E+00	3.0E-01	0.0E+00	1.1E-07	0.0E+00
Surf. (<0.5 ft)	09K120127/VP-4(C)	TOTAL		4.4E-02	1.2E-01	3.9E-07	6.1E-07	2.1E+00	5.0E+00	9.5E-07	2.6E-06
All Depths	09K120127/VP-4(C)	Pb-210	6.23E-02	5.2E-05	0.0E+00	5.2E-11	0.0E+00	1.8E-02	0.0E+00	2.5E-09	0.0E+00
All Depths	09K120127/VP-4(C)	Ra-226	4.40E-01	2.8E-02	0.0E+00	1.4E-07	0.0E+00	1.1E+00	0.0E+00	6.4E-07	0.0E+00
All Depths	09K120127/VP-4(C)	Th-230	2.79E+00	6.0E-04	5.1E-03	2.1E-09	2.4E-08	1.0E-01	2.9E-01	6.3E-09	1.1E-07
All Depths	09K120127/VP-4(C)	Th-232	1.16E+00	1.2E-03	9.0E-02	1.5E-07	4.7E-07	2.1E-01	3.7E+00	2.5E-09	2.0E-06
All Depths	09K120127/VP-4(C)	U-238	5.67E+00	4.8E-03	0.0E+00	1.8E-08	0.0E+00	2.6E-01	0.0E+00	9.8E-08	0.0E+00
All Depths	09K120127/VP-4(C)	TOTAL		3.4E-02	9.5E-02	3.1E-07	4.9E-07	1.7E+00	4.0E+00	7.5E-07	2.1E-06
Sub. (>0.5 ft)	09K130038/VP-62	Pb-210	4.76E-02	4.0E-05	0.0E+00	4.0E-11	0.0E+00	1.4E-02	0.0E+00	1.9E-09	0.0E+00
Sub. (>0.5 ft)	09K130038/VP-62	Th-230	1.74E+00	3.7E-04	3.2E-03	1.3E-09	1.5E-08	6.3E-02	1.8E-01	4.0E-09	6.9E-08
Sub. (>0.5 ft)	09K130038/VP-62	TOTAL		4.1E-04	3.2E-03	1.3E-09	1.5E-08	7.7E-02	1.8E-01	5.9E-09	6.9E-08
All Depths	09K130038/VP-62	Pb-210	4.76E-02	4.0E-05	0.0E+00	4.0E-11	0.0E+00	1.4E-02	0.0E+00	1.9E-09	0.0E+00
All Depths	09K130038/VP-62	Th-230	1.74E+00	3.7E-04	3.2E-03	1.3E-09	1.5E-08	6.3E-02	1.8E-01	4.0E-09	6.9E-08
All Depths	09K130038/VP-62	TOTAL		4.1E-04	3.2E-03	1.3E-09	1.5E-08	7.7E-02	1.8E-01	5.9E-09	6.9E-08
Sub. (>0.5 ft)	09K130104/VP-60	Pb-210	2.09E-02	1.7E-05	0.0E+00	1.7E-11	0.0E+00	6.1E-03	0.0E+00	8.4E-10	0.0E+00
Sub. (>0.5 ft)	09K130104/VP-60	TOTAL		1.7E-05	0.0E+00	1.7E-11	0.0E+00	6.1E-03	0.0E+00	8.4E-10	0.0E+00
All Depths	09K130104/VP-60	Pb-210	2.09E-02	1.7E-05	0.0E+00	1.7E-11	0.0E+00	6.1E-03	0.0E+00	8.4E-10	0.0E+00
All Depths	09K130104/VP-60	TOTAL		1.7E-05	0.0E+00	1.7E-11	0.0E+00	6.1E-03	0.0E+00	8.4E-10	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Ac-227	3.21E-01	5.2E-03	0.0E+00	1.1E-08	0.0E+00	4.3E-01	0.0E+00	7.4E-08	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Pa-231	4.06E-01	1.1E-03	0.0E+00	2.7E-09	0.0E+00	2.1E-01	0.0E+00	5.3E-09	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Pb-210	1.06E+00	8.9E-04	0.0E+00	8.8E-10	0.0E+00	3.1E-01	0.0E+00	4.3E-08	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Ra-226	2.75E+00	1.7E-01	0.0E+00	8.6E-07	0.0E+00	6.8E+00	0.0E+00	4.0E-06	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	Th-230	7.41E+01	1.6E-02	1.4E-01	5.5E-08	6.5E-07	2.7E+00	7.7E+00	1.7E-07	3.0E-06
Sub. (>0.5 ft)	09K140015/VP-58	Th-232	2.12E+00	2.2E-03	1.6E-01	2.8E-07	8.6E-07	3.8E-01	6.8E+00	4.6E-09	3.7E-06
Sub. (>0.5 ft)	09K140015/VP-58	U-238	1.44E+01	1.2E-02	0.0E+00	4.5E-08	0.0E+00	6.6E-01	0.0E+00	2.5E-07	0.0E+00
Sub. (>0.5 ft)	09K140015/VP-58	TOTAL		2.1E-01	3.0E-01	1.3E-06	1.5E-06	1.1E+01	1.4E+01	4.5E-06	6.7E-06
Surf. (<0.5 ft)	09K140015/VP-58	Pb-210	5.42E-02	4.5E-05	0.0E+00	4.5E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
Surf. (<0.5 ft)	09K140015/VP-58	Ra-226	1.13E+00	7.1E-02	0.0E+00	3.5E-07	0.0E+00	2.8E+00	0.0E+00	1.6E-06	0.0E+00
Surf. (<0.5 ft)	09K140015/VP-58	Th-230	2.21E+00	4.7E-04	4.0E-03	1.6E-09	1.9E-08	8.1E-02	2.3E-01	5.0E-09	8.8E-08
Surf. (<0.5 ft)	09K140015/VP-58	Th-232	1.22E+00	1.3E-03	9.5E-02	1.6E-07	4.9E-07	2.2E-01	3.9E+00	2.6E-09	2.1E-06
Surf. (<0.5 ft)	09K140015/VP-58	U-238	9.92E+00	8.5E-03	0.0E+00	3.1E-08	0.0E+00	4.5E-01	0.0E+00	1.7E-07	0.0E+00
Surf. (<0.5 ft)	09K140015/VP-58	TOTAL		8.1E-02	9.9E-02	5.5E-07	5.1E-07	3.5E+00	4.1E+00	1.8E-06	2.2E-06
All Depths	09K140015/VP-58	Ac-227	6.30E-02	1.0E-03	0.0E+00	2.1E-09	0.0E+00	8.4E-02	0.0E+00	1.5E-08	0.0E+00
All Depths	09K140015/VP-58	Pa-231	1.12E-01	3.2E-04	0.0E+00	7.4E-10	0.0E+00	5.8E-02	0.0E+00	1.5E-09	0.0E+00
All Depths	09K140015/VP-58	Pb-210	5.46E-01	4.6E-04	0.0E+00	4.5E-10	0.0E+00	1.6E-01	0.0E+00	2.2E-08	0.0E+00
All Depths	09K140015/VP-58	Ra-226	1.83E+00	1.1E-01	0.0E+00	5.7E-07	0.0E+00	4.5E+00	0.0E+00	2.7E-06	0.0E+00
All Depths	09K140015/VP-58	Th-230	3.73E+01	8.0E-03	6.8E-02	2.7E-08	3.3E-07	1.4E+00	3.9E+00	8.5E-08	1.5E-06
All Depths	09K140015/VP-58	Th-232	1.39E+00	1.4E-03	1.1E-01	1.9E-07	5.6E-07	2.5E-01	4.5E+00	3.0E-09	2.4E-06
All Depths	09K140015/VP-58	U-238	1.15E+01	9.8E-03	0.0E+00	3.6E-08	0.0E+00	5.2E-01	0.0E+00	2.0E-07	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 33 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	09K140015/VP-58	TOTAL		1.4E-01	1.8E-01	8.3E-07	8.9E-07	6.9E+00	8.3E+00	3.0E-06	3.9E-06
Sub. (>0.5 ft)	09K140026/VP-57	Pb-210	2.66E-01	2.2E-04	0.0E+00	2.2E-10	0.0E+00	7.8E-02	0.0E+00	1.1E-08	0.0E+00
Sub. (>0.5 ft)	09K140026/VP-57	Ra-226	1.05E+00	6.6E-02	0.0E+00	3.3E-07	0.0E+00	2.6E+00	0.0E+00	1.5E-06	0.0E+00
Sub. (>0.5 ft)	09K140026/VP-57	Th-230	1.73E+01	3.7E-03	3.2E-02	1.3E-08	1.5E-07	6.3E-01	1.8E+00	3.9E-08	6.9E-07
Sub. (>0.5 ft)	09K140026/VP-57	Th-232	1.90E-01	2.0E-04	1.5E-02	2.5E-08	7.7E-08	3.4E-02	6.1E-01	4.1E-10	3.3E-07
Sub. (>0.5 ft)	09K140026/VP-57	U-238	7.17E+00	6.1E-03	0.0E+00	2.2E-08	0.0E+00	3.3E-01	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	09K140026/VP-57	TOTAL		7.6E-02	4.6E-02	3.9E-07	2.3E-07	3.6E+00	2.4E+00	1.7E-06	1.0E-06
Surf. (<0.5 ft)	09K140026/VP-57	Pb-210	2.38E-01	2.0E-04	0.0E+00	2.0E-10	0.0E+00	7.0E-02	0.0E+00	9.6E-09	0.0E+00
Surf. (<0.5 ft)	09K140026/VP-57	Ra-226	1.00E+00	6.3E-02	0.0E+00	3.1E-07	0.0E+00	2.5E+00	0.0E+00	1.4E-06	0.0E+00
Surf. (<0.5 ft)	09K140026/VP-57	Th-230	1.53E+01	3.3E-03	2.8E-02	1.1E-08	1.3E-07	5.6E-01	1.6E+00	3.5E-08	6.1E-07
Surf. (<0.5 ft)	09K140026/VP-57	Th-232	1.27E+00	1.3E-03	9.9E-02	1.7E-07	5.1E-07	2.3E-01	4.1E+00	2.7E-09	2.2E-06
Surf. (<0.5 ft)	09K140026/VP-57	U-238	1.16E+01	9.9E-03	0.0E+00	3.6E-08	0.0E+00	5.3E-01	0.0E+00	2.0E-07	0.0E+00
Surf. (<0.5 ft)	09K140026/VP-57	TOTAL		7.7E-02	1.3E-01	5.3E-07	6.5E-07	3.8E+00	5.7E+00	1.7E-06	2.8E-06
All Depths	09K140026/VP-57	Pb-210	2.66E-01	2.2E-04	0.0E+00	2.2E-10	0.0E+00	7.8E-02	0.0E+00	1.1E-08	0.0E+00
All Depths	09K140026/VP-57	Ra-226	8.50E-01	5.3E-02	0.0E+00	2.7E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
All Depths	09K140026/VP-57	Th-230	1.73E+01	3.7E-03	3.2E-02	1.3E-08	1.5E-07	6.3E-01	1.8E+00	3.9E-08	6.9E-07
All Depths	09K140026/VP-57	Th-232	1.19E+00	1.2E-03	9.3E-02	1.6E-07	4.8E-07	2.2E-01	3.8E+00	2.6E-09	2.1E-06
All Depths	09K140026/VP-57	U-238	9.32E+00	8.0E-03	0.0E+00	2.9E-08	0.0E+00	4.2E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	09K140026/VP-57	TOTAL		6.6E-02	1.2E-01	4.7E-07	6.3E-07	3.4E+00	5.6E+00	1.4E-06	2.8E-06
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Ac-227	3.15E-02	5.1E-04	0.0E+00	1.1E-09	0.0E+00	4.2E-02	0.0E+00	7.3E-09	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Pa-231	7.60E-02	2.1E-04	0.0E+00	5.0E-10	0.0E+00	4.0E-02	0.0E+00	9.8E-10	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Pb-210	4.83E-01	4.0E-04	0.0E+00	4.0E-10	0.0E+00	1.4E-01	0.0E+00	1.9E-08	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Ra-226	1.34E+00	8.4E-02	0.0E+00	4.2E-07	0.0E+00	3.3E+00	0.0E+00	1.9E-06	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Th-230	3.28E+01	7.0E-03	6.0E-02	2.4E-08	2.9E-07	1.2E+00	3.4E+00	7.5E-08	1.3E-06
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	Th-232	2.70E-01	2.8E-04	2.1E-02	3.6E-08	1.1E-07	4.9E-02	8.6E-01	5.8E-10	4.7E-07
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	U-238	6.36E+00	5.4E-03	0.0E+00	2.0E-08	0.0E+00	2.9E-01	0.0E+00	1.1E-07	0.0E+00
Sub. (>0.5 ft)	09K210206/VP-56,1(C)	TOTAL		9.8E-02	8.1E-02	5.0E-07	4.0E-07	5.0E+00	4.3E+00	2.2E-06	1.8E-06
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Pb-210	8.15E-02	6.8E-05	0.0E+00	6.8E-11	0.0E+00	2.4E-02	0.0E+00	3.3E-09	0.0E+00
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Ra-226	1.08E+00	6.8E-02	0.0E+00	3.4E-07	0.0E+00	2.7E+00	0.0E+00	1.6E-06	0.0E+00
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Th-230	4.16E+00	8.9E-04	7.6E-03	3.1E-09	3.6E-08	1.5E-01	4.3E-01	9.5E-09	1.7E-07
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	Th-232	1.79E+00	1.9E-03	1.4E-01	2.4E-07	7.2E-07	3.2E-01	5.7E+00	3.9E-09	3.1E-06
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	U-238	1.06E+01	9.1E-03	0.0E+00	3.3E-08	0.0E+00	4.8E-01	0.0E+00	1.8E-07	0.0E+00
Surf. (<0.5 ft)	09K210206/VP-56,1(C)	TOTAL		8.0E-02	1.5E-01	6.1E-07	7.6E-07	3.6E+00	6.2E+00	1.8E-06	3.3E-06
All Depths	09K210206/VP-56,1(C)	Pb-210	1.65E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	4.8E-02	0.0E+00	6.6E-09	0.0E+00
All Depths	09K210206/VP-56,1(C)	Ra-226	1.01E+00	6.3E-02	0.0E+00	3.2E-07	0.0E+00	2.5E+00	0.0E+00	1.5E-06	0.0E+00
All Depths	09K210206/VP-56,1(C)	Th-230	1.01E+01	2.2E-03	1.8E-02	7.5E-09	8.8E-08	3.7E-01	1.1E+00	2.3E-08	4.0E-07
All Depths	09K210206/VP-56,1(C)	Th-232	1.59E+00	1.7E-03	1.2E-01	2.1E-07	6.4E-07	2.9E-01	5.1E+00	3.4E-09	2.8E-06
All Depths	09K210206/VP-56,1(C)	U-238	9.42E+00	8.1E-03	0.0E+00	3.0E-08	0.0E+00	4.3E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	09K210206/VP-56,1(C)	TOTAL		7.5E-02	1.4E-01	5.7E-07	7.3E-07	3.6E+00	6.1E+00	1.7E-06	3.2E-06
Sub. (>0.5 ft)	09K220029	Pb-210	1.54E-02	1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.5E-03	0.0E+00	6.2E-10	0.0E+00
Sub. (>0.5 ft)	09K220029	TOTAL		1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.5E-03	0.0E+00	6.2E-10	0.0E+00
All Depths	09K220029	Pb-210	1.54E-02	1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.5E-03	0.0E+00	6.2E-10	0.0E+00
All Depths	09K220029	TOTAL		1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.5E-03	0.0E+00	6.2E-10	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 34 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	09K220030/VP-44	Pb-210	2.23E-02	1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.5E-03	0.0E+00	8.9E-10	0.0E+00
Sub. (>0.5 ft)	09K220030/VP-44	TOTAL		1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.5E-03	0.0E+00	8.9E-10	0.0E+00
All Depths	09K220030/VP-44	Pb-210	2.23E-02	1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.5E-03	0.0E+00	8.9E-10	0.0E+00
All Depths	09K220030/VP-44	TOTAL		1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.5E-03	0.0E+00	8.9E-10	0.0E+00
Sub. (>0.5 ft)	09K220041/VP-42	Pb-210	3.54E-02	3.0E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
Sub. (>0.5 ft)	09K220041/VP-42	Th-230	8.70E-01	1.9E-04	1.6E-03	6.4E-10	7.6E-09	3.2E-02	9.0E-02	2.0E-09	3.5E-08
Sub. (>0.5 ft)	09K220041/VP-42	TOTAL		2.2E-04	1.6E-03	6.7E-10	7.6E-09	4.2E-02	9.0E-02	3.4E-09	3.5E-08
All Depths	09K220041/VP-42	Pb-210	3.54E-02	3.0E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
All Depths	09K220041/VP-42	Th-230	8.70E-01	1.9E-04	1.6E-03	6.4E-10	7.6E-09	3.2E-02	9.0E-02	2.0E-09	3.5E-08
All Depths	09K220041/VP-42	TOTAL		2.2E-04	1.6E-03	6.7E-10	7.6E-09	4.2E-02	9.0E-02	3.4E-09	3.5E-08
Sub. (>0.5 ft)	09K220074/VP-46	Pb-210	4.06E-02	3.4E-05	0.0E+00	3.4E-11	0.0E+00	1.2E-02	0.0E+00	1.6E-09	0.0E+00
Sub. (>0.5 ft)	09K220074/VP-46	Th-230	1.24E+00	2.7E-04	2.3E-03	9.1E-10	1.1E-08	4.5E-02	1.3E-01	2.8E-09	4.9E-08
Sub. (>0.5 ft)	09K220074/VP-46	TOTAL		3.0E-04	2.3E-03	9.5E-10	1.1E-08	5.7E-02	1.3E-01	4.5E-09	4.9E-08
All Depths	09K220074/VP-46	Pb-210	4.06E-02	3.4E-05	0.0E+00	3.4E-11	0.0E+00	1.2E-02	0.0E+00	1.6E-09	0.0E+00
All Depths	09K220074/VP-46	Th-230	1.24E+00	2.7E-04	2.3E-03	9.1E-10	1.1E-08	4.5E-02	1.3E-01	2.8E-09	4.9E-08
All Depths	09K220074/VP-46	TOTAL		3.0E-04	2.3E-03	9.5E-10	1.1E-08	5.7E-02	1.3E-01	4.5E-09	4.9E-08
Sub. (>0.5 ft)	09K220085/VP-47	Pb-210	2.66E-02	2.2E-05	0.0E+00	2.2E-11	0.0E+00	7.8E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	09K220085/VP-47	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
Sub. (>0.5 ft)	09K220085/VP-47	TOTAL		7.4E-05	4.4E-04	2.0E-10	2.1E-09	1.7E-02	2.5E-02	1.6E-09	9.6E-09
All Depths	09K220085/VP-47	Pb-210	2.66E-02	2.2E-05	0.0E+00	2.2E-11	0.0E+00	7.8E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	09K220085/VP-47	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
All Depths	09K220085/VP-47	TOTAL		7.4E-05	4.4E-04	2.0E-10	2.1E-09	1.7E-02	2.5E-02	1.6E-09	9.6E-09
Sub. (>0.5 ft)	09K220140/VP-40	Pb-210	4.55E-02	3.8E-05	0.0E+00	3.8E-11	0.0E+00	1.3E-02	0.0E+00	1.8E-09	0.0E+00
Sub. (>0.5 ft)	09K220140/VP-40	Th-230	1.59E+00	3.4E-04	2.9E-03	1.2E-09	1.4E-08	5.8E-02	1.6E-01	3.6E-09	6.3E-08
Sub. (>0.5 ft)	09K220140/VP-40	TOTAL		3.8E-04	2.9E-03	1.2E-09	1.4E-08	7.1E-02	1.6E-01	5.4E-09	6.3E-08
All Depths	09K220140/VP-40	Pb-210	4.55E-02	3.8E-05	0.0E+00	3.8E-11	0.0E+00	1.3E-02	0.0E+00	1.8E-09	0.0E+00
All Depths	09K220140/VP-40	Th-230	1.59E+00	3.4E-04	2.9E-03	1.2E-09	1.4E-08	5.8E-02	1.6E-01	3.6E-09	6.3E-08
All Depths	09K220140/VP-40	TOTAL		3.8E-04	2.9E-03	1.2E-09	1.4E-08	7.1E-02	1.6E-01	5.4E-09	6.3E-08
Sub. (>0.5 ft)	09K220162/VP-53	Pb-210	2.80E-02	2.3E-05	0.0E+00	2.3E-11	0.0E+00	8.2E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	09K220162/VP-53	Th-230	3.40E-01	7.3E-05	6.2E-04	2.5E-10	3.0E-09	1.2E-02	3.5E-02	7.7E-10	1.4E-08
Sub. (>0.5 ft)	09K220162/VP-53	TOTAL		9.6E-05	6.2E-04	2.7E-10	3.0E-09	2.1E-02	3.5E-02	1.9E-09	1.4E-08
All Depths	09K220162/VP-53	Pb-210	2.80E-02	2.3E-05	0.0E+00	2.3E-11	0.0E+00	8.2E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	09K220162/VP-53	Th-230	3.40E-01	7.3E-05	6.2E-04	2.5E-10	3.0E-09	1.2E-02	3.5E-02	7.7E-10	1.4E-08
All Depths	09K220162/VP-53	TOTAL		9.6E-05	6.2E-04	2.7E-10	3.0E-09	2.1E-02	3.5E-02	1.9E-09	1.4E-08
Sub. (>0.5 ft)	09K220173/VP-48(A)	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
Sub. (>0.5 ft)	09K220173/VP-48(A)	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08
Sub. (>0.5 ft)	09K220173/VP-48(A)	TOTAL		1.2E-04	8.0E-04	3.5E-10	3.8E-09	2.5E-02	4.6E-02	2.2E-09	1.8E-08
Surf. (<0.5 ft)	09K220173/VP-48(A)	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
Surf. (<0.5 ft)	09K220173/VP-48(A)	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08

Attachment 12. Radiological Doses and Risks for each Property (page 35 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	09K220173/VP-48(A)	Th-232	7.90E-01	8.2E-04	6.1E-02	1.1E-07	3.2E-07	1.4E-01	2.5E+00	1.7E-09	1.4E-06
Surf. (<0.5 ft)	09K220173/VP-48(A)	TOTAL		9.4E-04	6.2E-02	1.1E-07	3.2E-07	1.7E-01	2.6E+00	3.9E-09	1.4E-06
All Depths	09K220173/VP-48(A)	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
All Depths	09K220173/VP-48(A)	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08
All Depths	09K220173/VP-48(A)	Th-232	7.90E-01	8.2E-04	6.1E-02	1.1E-07	3.2E-07	1.4E-01	2.5E+00	1.7E-09	1.4E-06
All Depths	09K220173/VP-48(A)	TOTAL		9.4E-04	6.2E-02	1.1E-07	3.2E-07	1.7E-01	2.6E+00	3.9E-09	1.4E-06
Sub. (>0.5 ft)	09K220184/VP-48	Pb-210	1.13E-01	9.5E-05	0.0E+00	9.4E-11	0.0E+00	3.3E-02	0.0E+00	4.6E-09	0.0E+00
Sub. (>0.5 ft)	09K220184/VP-48	Th-230	6.44E+00	1.4E-03	1.2E-02	4.7E-09	5.6E-08	2.3E-01	6.7E-01	1.5E-08	2.6E-07
Sub. (>0.5 ft)	09K220184/VP-48	TOTAL		1.5E-03	1.2E-02	4.8E-09	5.6E-08	2.7E-01	6.7E-01	1.9E-08	2.6E-07
Surf. (<0.5 ft)	09K220184/VP-48	Pb-210	1.32E-02	1.1E-05	0.0E+00	1.1E-11	0.0E+00	3.9E-03	0.0E+00	5.3E-10	0.0E+00
Surf. (<0.5 ft)	09K220184/VP-48	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	09K220184/VP-48	Th-232	4.90E-01	5.1E-04	3.8E-02	6.5E-08	2.0E-07	8.9E-02	1.6E+00	1.1E-09	8.5E-07
Surf. (<0.5 ft)	09K220184/VP-48	U-238	5.72E+00	4.9E-03	0.0E+00	1.8E-08	0.0E+00	2.6E-01	0.0E+00	9.9E-08	0.0E+00
Surf. (<0.5 ft)	09K220184/VP-48	TOTAL		5.2E-02	3.8E-02	3.2E-07	2.0E-07	2.2E+00	1.6E+00	1.2E-06	8.5E-07
All Depths	09K220184/VP-48	Pb-210	1.08E-01	9.0E-05	0.0E+00	9.0E-11	0.0E+00	3.2E-02	0.0E+00	4.3E-09	0.0E+00
All Depths	09K220184/VP-48	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
All Depths	09K220184/VP-48	Th-230	6.05E+00	1.3E-03	1.1E-02	4.4E-09	5.3E-08	2.2E-01	6.3E-01	1.4E-08	2.4E-07
All Depths	09K220184/VP-48	Th-232	4.90E-01	5.1E-04	3.8E-02	6.5E-08	2.0E-07	8.9E-02	1.6E+00	1.1E-09	8.5E-07
All Depths	09K220184/VP-48	U-238	5.72E+00	4.9E-03	0.0E+00	1.8E-08	0.0E+00	2.6E-01	0.0E+00	9.9E-08	0.0E+00
All Depths	09K220184/VP-48	TOTAL		5.4E-02	4.9E-02	3.2E-07	2.5E-07	2.4E+00	2.2E+00	1.2E-06	1.1E-06
Sub. (>0.5 ft)	09K220195/VP-49	Pb-210	3.67E-02	3.1E-05	0.0E+00	3.1E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
Sub. (>0.5 ft)	09K220195/VP-49	Th-230	9.60E-01	2.1E-04	1.7E-03	7.1E-10	8.4E-09	3.5E-02	1.0E-01	2.2E-09	3.8E-08
Sub. (>0.5 ft)	09K220195/VP-49	TOTAL		2.4E-04	1.7E-03	7.4E-10	8.4E-09	4.6E-02	1.0E-01	3.7E-09	3.8E-08
All Depths	09K220195/VP-49	Pb-210	3.67E-02	3.1E-05	0.0E+00	3.1E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
All Depths	09K220195/VP-49	Th-230	9.60E-01	2.1E-04	1.7E-03	7.1E-10	8.4E-09	3.5E-02	1.0E-01	2.2E-09	3.8E-08
All Depths	09K220195/VP-49	TOTAL		2.4E-04	1.7E-03	7.4E-10	8.4E-09	4.6E-02	1.0E-01	3.7E-09	3.8E-08
Sub. (>0.5 ft)	09K310197/VP-50,51	Pb-210	2.38E-02	2.0E-05	0.0E+00	2.0E-11	0.0E+00	7.0E-03	0.0E+00	9.6E-10	0.0E+00
Sub. (>0.5 ft)	09K310197/VP-50,51	Th-230	4.00E-02	8.6E-06	7.3E-05	2.9E-11	3.5E-10	1.5E-03	4.1E-03	9.1E-11	1.6E-09
Sub. (>0.5 ft)	09K310197/VP-50,51	TOTAL		2.8E-05	7.3E-05	4.9E-11	3.5E-10	8.4E-03	4.1E-03	1.0E-09	1.6E-09
All Depths	09K310197/VP-50,51	Pb-210	2.38E-02	2.0E-05	0.0E+00	2.0E-11	0.0E+00	7.0E-03	0.0E+00	9.6E-10	0.0E+00
All Depths	09K310197/VP-50,51	Th-230	4.00E-02	8.6E-06	7.3E-05	2.9E-11	3.5E-10	1.5E-03	4.1E-03	9.1E-11	1.6E-09
All Depths	09K310197/VP-50,51	TOTAL		2.8E-05	7.3E-05	4.9E-11	3.5E-10	8.4E-03	4.1E-03	1.0E-09	1.6E-09
Sub. (>0.5 ft)	10K110021	Pb-210	2.10E-02	1.8E-05	0.0E+00	1.7E-11	0.0E+00	6.1E-03	0.0E+00	8.4E-10	0.0E+00
Sub. (>0.5 ft)	10K110021	TOTAL		1.8E-05	0.0E+00	1.7E-11	0.0E+00	6.1E-03	0.0E+00	8.4E-10	0.0E+00
Surf. (<0.5 ft)	10K110021	Pb-210	2.06E-02	1.7E-05	0.0E+00	1.7E-11	0.0E+00	6.0E-03	0.0E+00	8.3E-10	0.0E+00
Surf. (<0.5 ft)	10K110021	Ra-226	5.50E-01	3.4E-02	0.0E+00	1.7E-07	0.0E+00	1.4E+00	0.0E+00	8.0E-07	0.0E+00
Surf. (<0.5 ft)	10K110021	Th-232	9.50E-01	9.9E-04	7.4E-02	1.3E-07	3.8E-07	1.7E-01	3.0E+00	2.1E-09	1.7E-06
Surf. (<0.5 ft)	10K110021	U-238	6.22E+00	5.3E-03	0.0E+00	1.9E-08	0.0E+00	2.8E-01	0.0E+00	1.1E-07	0.0E+00
Surf. (<0.5 ft)	10K110021	TOTAL		4.1E-02	7.4E-02	3.2E-07	3.8E-07	1.8E+00	3.0E+00	9.1E-07	1.7E-06
All Depths	10K110021	Pb-210	2.04E-02	1.7E-05	0.0E+00	1.7E-11	0.0E+00	6.0E-03	0.0E+00	8.2E-10	0.0E+00
All Depths	10K110021	Ra-226	5.50E-01	3.4E-02	0.0E+00	1.7E-07	0.0E+00	1.4E+00	0.0E+00	8.0E-07	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 36 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K110021	Th-232	9.50E-01	9.9E-04	7.4E-02	1.3E-07	3.8E-07	1.7E-01	3.0E+00	2.1E-09	1.7E-06
All Depths	10K110021	U-238	6.22E+00	5.3E-03	0.0E+00	1.9E-08	0.0E+00	2.8E-01	0.0E+00	1.1E-07	0.0E+00
All Depths	10K110021	TOTAL		4.1E-02	7.4E-02	3.2E-07	3.8E-07	1.8E+00	3.0E+00	9.1E-07	1.7E-06
Surf. (<0.5 ft)	10K130014	Pb-210	3.22E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.4E-03	0.0E+00	1.3E-09	0.0E+00
Surf. (<0.5 ft)	10K130014	Ra-226	5.00E-02	3.1E-03	0.0E+00	1.6E-08	0.0E+00	1.2E-01	0.0E+00	7.2E-08	0.0E+00
Surf. (<0.5 ft)	10K130014	Th-230	6.40E-01	1.4E-04	1.2E-03	4.7E-10	5.6E-09	2.3E-02	6.6E-02	1.5E-09	2.6E-08
Surf. (<0.5 ft)	10K130014	Th-232	2.55E+00	2.7E-03	2.0E-01	3.4E-07	1.0E-06	4.6E-01	8.2E+00	5.5E-09	4.4E-06
Surf. (<0.5 ft)	10K130014	U-238	2.07E+01	1.8E-02	0.0E+00	6.5E-08	0.0E+00	9.4E-01	0.0E+00	3.6E-07	0.0E+00
Surf. (<0.5 ft)	10K130014	TOTAL		2.4E-02	2.0E-01	4.2E-07	1.0E-06	1.6E+00	8.2E+00	4.4E-07	4.5E-06
All Depths	10K130014	Pb-210	3.22E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.4E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10K130014	Ra-226	5.00E-02	3.1E-03	0.0E+00	1.6E-08	0.0E+00	1.2E-01	0.0E+00	7.2E-08	0.0E+00
All Depths	10K130014	Th-230	6.40E-01	1.4E-04	1.2E-03	4.7E-10	5.6E-09	2.3E-02	6.6E-02	1.5E-09	2.6E-08
All Depths	10K130014	Th-232	2.55E+00	2.7E-03	2.0E-01	3.4E-07	1.0E-06	4.6E-01	8.2E+00	5.5E-09	4.4E-06
All Depths	10K130014	U-238	2.07E+01	1.8E-02	0.0E+00	6.5E-08	0.0E+00	9.4E-01	0.0E+00	3.6E-07	0.0E+00
All Depths	10K130014	TOTAL		2.4E-02	2.0E-01	4.2E-07	1.0E-06	1.6E+00	8.2E+00	4.4E-07	4.5E-06
Surf. (<0.5 ft)	10K140024/VP-10(C)	Pb-210	7.98E-02	6.7E-05	0.0E+00	6.6E-11	0.0E+00	2.3E-02	0.0E+00	3.2E-09	0.0E+00
Surf. (<0.5 ft)	10K140024/VP-10(C)	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	10K140024/VP-10(C)	Th-230	4.04E+00	8.6E-04	7.4E-03	3.0E-09	3.5E-08	1.5E-01	4.2E-01	9.2E-09	1.6E-07
Surf. (<0.5 ft)	10K140024/VP-10(C)	Th-232	1.89E+00	2.0E-03	1.5E-01	2.5E-07	7.6E-07	3.4E-01	6.1E+00	4.1E-09	3.3E-06
Surf. (<0.5 ft)	10K140024/VP-10(C)	U-238	1.10E+01	9.4E-03	0.0E+00	3.5E-08	0.0E+00	5.0E-01	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	10K140024/VP-10(C)	TOTAL		5.9E-02	1.5E-01	5.3E-07	8.0E-07	2.9E+00	6.5E+00	1.3E-06	3.5E-06
All Depths	10K140024/VP-10(C)	Pb-210	7.98E-02	6.7E-05	0.0E+00	6.6E-11	0.0E+00	2.3E-02	0.0E+00	3.2E-09	0.0E+00
All Depths	10K140024/VP-10(C)	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
All Depths	10K140024/VP-10(C)	Th-230	4.04E+00	8.6E-04	7.4E-03	3.0E-09	3.5E-08	1.5E-01	4.2E-01	9.2E-09	1.6E-07
All Depths	10K140024/VP-10(C)	Th-232	1.89E+00	2.0E-03	1.5E-01	2.5E-07	7.6E-07	3.4E-01	6.1E+00	4.1E-09	3.3E-06
All Depths	10K140024/VP-10(C)	U-238	1.10E+01	9.4E-03	0.0E+00	3.5E-08	0.0E+00	5.0E-01	0.0E+00	1.9E-07	0.0E+00
All Depths	10K140024/VP-10(C)	TOTAL		5.9E-02	1.5E-01	5.3E-07	8.0E-07	2.9E+00	6.5E+00	1.3E-06	3.5E-06
Sub. (>0.5 ft)	10K210053/VP-17	Pb-210	3.51E-02	2.9E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
Sub. (>0.5 ft)	10K210053/VP-17	Th-230	8.50E-01	1.8E-04	1.5E-03	6.2E-10	7.4E-09	3.1E-02	8.8E-02	1.9E-09	3.4E-08
Sub. (>0.5 ft)	10K210053/VP-17	TOTAL		2.1E-04	1.5E-03	6.5E-10	7.4E-09	4.1E-02	8.8E-02	3.3E-09	3.4E-08
All Depths	10K210053/VP-17	Pb-210	3.51E-02	2.9E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
All Depths	10K210053/VP-17	Th-230	8.50E-01	1.8E-04	1.5E-03	6.2E-10	7.4E-09	3.1E-02	8.8E-02	1.9E-09	3.4E-08
All Depths	10K210053/VP-17	TOTAL		2.1E-04	1.5E-03	6.5E-10	7.4E-09	4.1E-02	8.8E-02	3.3E-09	3.4E-08
Sub. (>0.5 ft)	10K210064	Pb-210	6.93E-02	5.8E-05	0.0E+00	5.8E-11	0.0E+00	2.0E-02	0.0E+00	2.8E-09	0.0E+00
Sub. (>0.5 ft)	10K210064	Th-230	3.29E+00	7.0E-04	6.0E-03	2.4E-09	2.9E-08	1.2E-01	3.4E-01	7.5E-09	1.3E-07
Sub. (>0.5 ft)	10K210064	TOTAL		7.6E-04	6.0E-03	2.5E-09	2.9E-08	1.4E-01	3.4E-01	1.0E-08	1.3E-07
All Depths	10K210064	Pb-210	6.93E-02	5.8E-05	0.0E+00	5.8E-11	0.0E+00	2.0E-02	0.0E+00	2.8E-09	0.0E+00
All Depths	10K210064	Th-230	3.29E+00	7.0E-04	6.0E-03	2.4E-09	2.9E-08	1.2E-01	3.4E-01	7.5E-09	1.3E-07
All Depths	10K210064	TOTAL		7.6E-04	6.0E-03	2.5E-09	2.9E-08	1.4E-01	3.4E-01	1.0E-08	1.3E-07
Sub. (>0.5 ft)	10K230031/VP-19	Pb-210	1.07E-01	8.9E-05	0.0E+00	8.9E-11	0.0E+00	3.1E-02	0.0E+00	4.3E-09	0.0E+00
Sub. (>0.5 ft)	10K230031/VP-19	Th-230	5.99E+00	1.3E-03	1.1E-02	4.4E-09	5.2E-08	2.2E-01	6.2E-01	1.4E-08	2.4E-07
Sub. (>0.5 ft)	10K230031/VP-19	TOTAL		1.4E-03	1.1E-02	4.5E-09	5.2E-08	2.5E-01	6.2E-01	1.8E-08	2.4E-07

Attachment 12. Radiological Doses and Risks for each Property (page 37 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
All Depths	10K230031/VP-19	Pb-210	1.07E-01	8.9E-05	0.0E+00	8.9E-11	0.0E+00	3.1E-02	0.0E+00	4.3E-09	0.0E+00
All Depths	10K230031/VP-19	Th-230	5.99E+00	1.3E-03	1.1E-02	4.4E-09	5.2E-08	2.2E-01	6.2E-01	1.4E-08	2.4E-07
All Depths	10K230031/VP-19	TOTAL		1.4E-03	1.1E-02	4.5E-09	5.2E-08	2.5E-01	6.2E-01	1.8E-08	2.4E-07
Sub. (>0.5 ft)	10K230040/VP-20	Pb-210	6.57E-02	5.5E-05	0.0E+00	5.5E-11	0.0E+00	1.9E-02	0.0E+00	2.6E-09	0.0E+00
Sub. (>0.5 ft)	10K230040/VP-20	Th-230	3.03E+00	6.5E-04	5.5E-03	2.2E-09	2.6E-08	1.1E-01	3.1E-01	6.9E-09	1.2E-07
Sub. (>0.5 ft)	10K230040/VP-20	TOTAL		7.0E-04	5.5E-03	2.3E-09	2.6E-08	1.3E-01	3.1E-01	9.5E-09	1.2E-07
All Depths	10K230040/VP-20	Pb-210	6.57E-02	5.5E-05	0.0E+00	5.5E-11	0.0E+00	1.9E-02	0.0E+00	2.6E-09	0.0E+00
All Depths	10K230040/VP-20	Th-230	3.03E+00	6.5E-04	5.5E-03	2.2E-09	2.6E-08	1.1E-01	3.1E-01	6.9E-09	1.2E-07
All Depths	10K230040/VP-20	TOTAL		7.0E-04	5.5E-03	2.3E-09	2.6E-08	1.3E-01	3.1E-01	9.5E-09	1.2E-07
Sub. (>0.5 ft)	10K230051/VP-18	Pb-210	3.82E-02	3.2E-05	0.0E+00	3.2E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
Sub. (>0.5 ft)	10K230051/VP-18	Th-230	1.07E+00	2.3E-04	1.9E-03	7.9E-10	9.3E-09	3.9E-02	1.1E-01	2.4E-09	4.3E-08
Sub. (>0.5 ft)	10K230051/VP-18	TOTAL		2.6E-04	1.9E-03	8.2E-10	9.3E-09	5.0E-02	1.1E-01	4.0E-09	4.3E-08
All Depths	10K230051/VP-18	Pb-210	3.82E-02	3.2E-05	0.0E+00	3.2E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
All Depths	10K230051/VP-18	Th-230	1.07E+00	2.3E-04	1.9E-03	7.9E-10	9.3E-09	3.9E-02	1.1E-01	2.4E-09	4.3E-08
All Depths	10K230051/VP-18	TOTAL		2.6E-04	1.9E-03	8.2E-10	9.3E-09	5.0E-02	1.1E-01	4.0E-09	4.3E-08
Sub. (>0.5 ft)	10K230073/VP-21	Pb-210	1.51E-02	1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.4E-03	0.0E+00	6.1E-10	0.0E+00
Sub. (>0.5 ft)	10K230073/VP-21	TOTAL		1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.4E-03	0.0E+00	6.1E-10	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	Pb-210	2.80E-02	2.3E-05	0.0E+00	2.3E-11	0.0E+00	8.2E-03	0.0E+00	1.1E-09	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	Ra-226	9.50E-01	6.0E-02	0.0E+00	3.0E-07	0.0E+00	2.3E+00	0.0E+00	1.4E-06	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	Th-230	3.40E-01	7.3E-05	6.2E-04	2.5E-10	3.0E-09	1.2E-02	3.5E-02	7.7E-10	1.4E-08
Surf. (<0.5 ft)	10K230073/VP-21	Th-232	8.90E-01	9.3E-04	6.9E-02	1.2E-07	3.6E-07	1.6E-01	2.8E+00	1.9E-09	1.6E-06
Surf. (<0.5 ft)	10K230073/VP-21	U-238	7.98E+00	6.8E-03	0.0E+00	2.5E-08	0.0E+00	3.6E-01	0.0E+00	1.4E-07	0.0E+00
Surf. (<0.5 ft)	10K230073/VP-21	TOTAL		6.7E-02	7.0E-02	4.4E-07	3.6E-07	2.9E+00	2.9E+00	1.5E-06	1.6E-06
All Depths	10K230073/VP-21	Pb-210	2.11E-02	1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.2E-03	0.0E+00	8.5E-10	0.0E+00
All Depths	10K230073/VP-21	Ra-226	9.50E-01	6.0E-02	0.0E+00	3.0E-07	0.0E+00	2.3E+00	0.0E+00	1.4E-06	0.0E+00
All Depths	10K230073/VP-21	Th-232	8.90E-01	9.3E-04	6.9E-02	1.2E-07	3.6E-07	1.6E-01	2.8E+00	1.9E-09	1.6E-06
All Depths	10K230073/VP-21	U-238	7.98E+00	6.8E-03	0.0E+00	2.5E-08	0.0E+00	3.6E-01	0.0E+00	1.4E-07	0.0E+00
All Depths	10K230073/VP-21	TOTAL		6.7E-02	6.9E-02	4.4E-07	3.6E-07	2.9E+00	2.8E+00	1.5E-06	1.6E-06
Sub. (>0.5 ft)	10K240094/VP-23	Pb-210	2.20E-02	1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.4E-03	0.0E+00	8.8E-10	0.0E+00
Sub. (>0.5 ft)	10K240094/VP-23	TOTAL		1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.4E-03	0.0E+00	8.8E-10	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	Pb-210	2.21E-02	1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.5E-03	0.0E+00	8.9E-10	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	Th-232	7.90E-01	8.2E-04	6.1E-02	1.1E-07	3.2E-07	1.4E-01	2.5E+00	1.7E-09	1.4E-06
Surf. (<0.5 ft)	10K240094/VP-23	U-238	2.83E+00	2.4E-03	0.0E+00	8.9E-09	0.0E+00	1.3E-01	0.0E+00	4.9E-08	0.0E+00
Surf. (<0.5 ft)	10K240094/VP-23	TOTAL		5.0E-02	6.1E-02	3.5E-07	3.2E-07	2.1E+00	2.5E+00	1.1E-06	1.4E-06
All Depths	10K240094/VP-23	Pb-210	2.27E-02	1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.6E-03	0.0E+00	9.1E-10	0.0E+00
All Depths	10K240094/VP-23	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
All Depths	10K240094/VP-23	Th-232	7.90E-01	8.2E-04	6.1E-02	1.1E-07	3.2E-07	1.4E-01	2.5E+00	1.7E-09	1.4E-06
All Depths	10K240094/VP-23	U-238	2.83E+00	2.4E-03	0.0E+00	8.9E-09	0.0E+00	1.3E-01	0.0E+00	4.9E-08	0.0E+00
All Depths	10K240094/VP-23	TOTAL		5.0E-02	6.1E-02	3.5E-07	3.2E-07	2.1E+00	2.5E+00	1.1E-06	1.4E-06
Sub. (>0.5 ft)	10K240106/VP-22	Pb-210	1.53E-02	1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.5E-03	0.0E+00	6.1E-10	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 38 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
Sub. (>0.5 ft)	10K240106/VP-22	TOTAL		1.3E-05	0.0E+00	1.3E-11	0.0E+00	4.5E-03	0.0E+00	6.1E-10	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	Pb-210	3.22E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.4E-03	0.0E+00	1.3E-09	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	Ra-226	3.50E-01	2.2E-02	0.0E+00	1.1E-07	0.0E+00	8.6E-01	0.0E+00	5.1E-07	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	Th-230	6.40E-01	1.4E-04	1.2E-03	4.7E-10	5.6E-09	2.3E-02	6.6E-02	1.5E-09	2.6E-08
Surf. (<0.5 ft)	10K240106/VP-22	Th-232	5.90E-01	6.1E-04	4.6E-02	7.9E-08	2.4E-07	1.1E-01	1.9E+00	1.3E-09	1.0E-06
Surf. (<0.5 ft)	10K240106/VP-22	U-238	3.82E+00	3.3E-03	0.0E+00	1.2E-08	0.0E+00	1.7E-01	0.0E+00	6.6E-08	0.0E+00
Surf. (<0.5 ft)	10K240106/VP-22	TOTAL		2.6E-02	4.7E-02	2.0E-07	2.4E-07	1.2E+00	2.0E+00	5.8E-07	1.1E-06
All Depths	10K240106/VP-22	Pb-210	2.20E-02	1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.4E-03	0.0E+00	8.8E-10	0.0E+00
All Depths	10K240106/VP-22	Ra-226	3.50E-01	2.2E-02	0.0E+00	1.1E-07	0.0E+00	8.6E-01	0.0E+00	5.1E-07	0.0E+00
All Depths	10K240106/VP-22	Th-232	5.90E-01	6.1E-04	4.6E-02	7.9E-08	2.4E-07	1.1E-01	1.9E+00	1.3E-09	1.0E-06
All Depths	10K240106/VP-22	U-238	3.82E+00	3.3E-03	0.0E+00	1.2E-08	0.0E+00	1.7E-01	0.0E+00	6.6E-08	0.0E+00
All Depths	10K240106/VP-22	TOTAL		2.6E-02	4.6E-02	2.0E-07	2.4E-07	1.1E+00	1.9E+00	5.8E-07	1.0E-06
Surf. (<0.5 ft)	10K240182	Pb-210	2.27E-02	1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.6E-03	0.0E+00	9.1E-10	0.0E+00
Surf. (<0.5 ft)	10K240182	TOTAL		1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.6E-03	0.0E+00	9.1E-10	0.0E+00
All Depths	10K240182	Pb-210	2.27E-02	1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.6E-03	0.0E+00	9.1E-10	0.0E+00
All Depths	10K240182	TOTAL		1.9E-05	0.0E+00	1.9E-11	0.0E+00	6.6E-03	0.0E+00	9.1E-10	0.0E+00
Sub. (>0.5 ft)	10K240207	Pb-210	5.95E-02	5.0E-05	0.0E+00	4.9E-11	0.0E+00	1.7E-02	0.0E+00	2.4E-09	0.0E+00
Sub. (>0.5 ft)	10K240207	Th-230	2.59E+00	5.5E-04	4.7E-03	1.9E-09	2.3E-08	9.5E-02	2.7E-01	5.9E-09	1.0E-07
Sub. (>0.5 ft)	10K240207	TOTAL		6.0E-04	4.7E-03	2.0E-09	2.3E-08	1.1E-01	2.7E-01	8.3E-09	1.0E-07
Surf. (<0.5 ft)	10K240207	Pb-210	4.90E-02	4.1E-05	0.0E+00	4.1E-11	0.0E+00	1.4E-02	0.0E+00	2.0E-09	0.0E+00
Surf. (<0.5 ft)	10K240207	Th-230	1.84E+00	3.9E-04	3.4E-03	1.4E-09	1.6E-08	6.7E-02	1.9E-01	4.2E-09	7.3E-08
Surf. (<0.5 ft)	10K240207	TOTAL		4.3E-04	3.4E-03	1.4E-09	1.6E-08	8.1E-02	1.9E-01	6.2E-09	7.3E-08
All Depths	10K240207	Pb-210	5.66E-02	4.7E-05	0.0E+00	4.7E-11	0.0E+00	1.7E-02	0.0E+00	2.3E-09	0.0E+00
All Depths	10K240207	Th-230	2.38E+00	5.1E-04	4.3E-03	1.7E-09	2.1E-08	8.7E-02	2.5E-01	5.4E-09	9.5E-08
All Depths	10K240207	TOTAL		5.6E-04	4.3E-03	1.8E-09	2.1E-08	1.0E-01	2.5E-01	7.7E-09	9.5E-08
Sub. (>0.5 ft)	10K330030/VP-27	Pb-210	8.27E-02	6.9E-05	0.0E+00	6.9E-11	0.0E+00	2.4E-02	0.0E+00	3.3E-09	0.0E+00
Sub. (>0.5 ft)	10K330030/VP-27	Th-230	4.25E+00	9.1E-04	7.7E-03	3.1E-09	3.7E-08	1.6E-01	4.4E-01	9.7E-09	1.7E-07
Sub. (>0.5 ft)	10K330030/VP-27	TOTAL		9.8E-04	7.7E-03	3.2E-09	3.7E-08	1.8E-01	4.4E-01	1.3E-08	1.7E-07
Surf. (<0.5 ft)	10K330030/VP-27	Pb-210	5.60E-02	4.7E-05	0.0E+00	4.7E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
Surf. (<0.5 ft)	10K330030/VP-27	Th-230	2.34E+00	5.0E-04	4.3E-03	1.7E-09	2.0E-08	8.5E-02	2.4E-01	5.3E-09	9.3E-08
Surf. (<0.5 ft)	10K330030/VP-27	TOTAL		5.5E-04	4.3E-03	1.8E-09	2.0E-08	1.0E-01	2.4E-01	7.6E-09	9.3E-08
All Depths	10K330030/VP-27	Pb-210	8.67E-02	7.2E-05	0.0E+00	7.2E-11	0.0E+00	2.5E-02	0.0E+00	3.5E-09	0.0E+00
All Depths	10K330030/VP-27	Th-230	4.53E+00	9.7E-04	8.3E-03	3.3E-09	3.9E-08	1.7E-01	4.7E-01	1.0E-08	1.8E-07
All Depths	10K330030/VP-27	TOTAL		1.0E-03	8.3E-03	3.4E-09	3.9E-08	1.9E-01	4.7E-01	1.4E-08	1.8E-07
Sub. (>0.5 ft)	10K330140/VP-24	Pb-210	1.93E-02	1.6E-05	0.0E+00	1.6E-11	0.0E+00	5.7E-03	0.0E+00	7.8E-10	0.0E+00
Sub. (>0.5 ft)	10K330140/VP-24	TOTAL		1.6E-05	0.0E+00	1.6E-11	0.0E+00	5.7E-03	0.0E+00	7.8E-10	0.0E+00
Surf. (<0.5 ft)	10K330140/VP-24	Pb-210	1.86E-02	1.6E-05	0.0E+00	1.5E-11	0.0E+00	5.5E-03	0.0E+00	7.5E-10	0.0E+00
Surf. (<0.5 ft)	10K330140/VP-24	Ra-226	5.40E-01	3.4E-02	0.0E+00	1.7E-07	0.0E+00	1.3E+00	0.0E+00	7.8E-07	0.0E+00
Surf. (<0.5 ft)	10K330140/VP-24	Th-232	5.90E-01	6.1E-04	4.6E-02	7.9E-08	2.4E-07	1.1E-01	1.9E+00	1.3E-09	1.0E-06
Surf. (<0.5 ft)	10K330140/VP-24	U-238	3.62E+00	3.1E-03	0.0E+00	1.1E-08	0.0E+00	1.6E-01	0.0E+00	6.3E-08	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 39 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
Surf. (<0.5 ft)	10K330140/VP-24	TOTAL		3.8E-02	4.6E-02	2.6E-07	2.4E-07	1.6E+00	1.9E+00	8.5E-07	1.0E-06
All Depths	10K330140/VP-24	Pb-210	1.89E-02	1.6E-05	0.0E+00	1.6E-11	0.0E+00	5.5E-03	0.0E+00	7.6E-10	0.0E+00
All Depths	10K330140/VP-24	Ra-226	5.40E-01	3.4E-02	0.0E+00	1.7E-07	0.0E+00	1.3E+00	0.0E+00	7.8E-07	0.0E+00
All Depths	10K330140/VP-24	Th-232	5.90E-01	6.1E-04	4.6E-02	7.9E-08	2.4E-07	1.1E-01	1.9E+00	1.3E-09	1.0E-06
All Depths	10K330140/VP-24	U-238	3.62E+00	3.1E-03	0.0E+00	1.1E-08	0.0E+00	1.6E-01	0.0E+00	6.3E-08	0.0E+00
All Depths	10K330140/VP-24	TOTAL		3.8E-02	4.6E-02	2.6E-07	2.4E-07	1.6E+00	1.9E+00	8.5E-07	1.0E-06
Sub. (>0.5 ft)	10K330223/VP-29	Pb-210	4.48E-02	3.7E-05	0.0E+00	3.7E-11	0.0E+00	1.3E-02	0.0E+00	1.8E-09	0.0E+00
Sub. (>0.5 ft)	10K330223/VP-29	Th-230	1.54E+00	3.3E-04	2.8E-03	1.1E-09	1.3E-08	5.6E-02	1.6E-01	3.5E-09	6.1E-08
Sub. (>0.5 ft)	10K330223/VP-29	TOTAL		3.7E-04	2.8E-03	1.2E-09	1.3E-08	6.9E-02	1.6E-01	5.3E-09	6.1E-08
All Depths	10K330223/VP-29	Pb-210	4.48E-02	3.7E-05	0.0E+00	3.7E-11	0.0E+00	1.3E-02	0.0E+00	1.8E-09	0.0E+00
All Depths	10K330223/VP-29	Th-230	1.54E+00	3.3E-04	2.8E-03	1.1E-09	1.3E-08	5.6E-02	1.6E-01	3.5E-09	6.1E-08
All Depths	10K330223/VP-29	TOTAL		3.7E-04	2.8E-03	1.2E-09	1.3E-08	6.9E-02	1.6E-01	5.3E-09	6.1E-08
Sub. (>0.5 ft)	10K330232/VP-30	Pb-210	2.66E-02	2.2E-05	0.0E+00	2.2E-11	0.0E+00	7.8E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	10K330232/VP-30	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
Sub. (>0.5 ft)	10K330232/VP-30	TOTAL		7.4E-05	4.4E-04	2.0E-10	2.1E-09	1.7E-02	2.5E-02	1.6E-09	9.6E-09
All Depths	10K330232/VP-30	Pb-210	2.66E-02	2.2E-05	0.0E+00	2.2E-11	0.0E+00	7.8E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	10K330232/VP-30	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
All Depths	10K330232/VP-30	TOTAL		7.4E-05	4.4E-04	2.0E-10	2.1E-09	1.7E-02	2.5E-02	1.6E-09	9.6E-09
Sub. (>0.5 ft)	10K330241/VP-32	Pb-210	1.68E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	4.9E-02	0.0E+00	6.7E-09	0.0E+00
Sub. (>0.5 ft)	10K330241/VP-32	Th-230	1.03E+01	2.2E-03	1.9E-02	7.6E-09	9.0E-08	3.8E-01	1.1E+00	2.4E-08	4.1E-07
Sub. (>0.5 ft)	10K330241/VP-32	TOTAL		2.4E-03	1.9E-02	7.7E-09	9.0E-08	4.3E-01	1.1E+00	3.0E-08	4.1E-07
Surf. (<0.5 ft)	10K330241/VP-32	Pb-210	5.08E-02	4.2E-05	0.0E+00	4.2E-11	0.0E+00	1.5E-02	0.0E+00	2.0E-09	0.0E+00
Surf. (<0.5 ft)	10K330241/VP-32	Th-230	1.97E+00	4.2E-04	3.6E-03	1.4E-09	1.7E-08	7.2E-02	2.0E-01	4.5E-09	7.9E-08
Surf. (<0.5 ft)	10K330241/VP-32	TOTAL		4.6E-04	3.6E-03	1.5E-09	1.7E-08	8.7E-02	2.0E-01	6.5E-09	7.9E-08
All Depths	10K330241/VP-32	Pb-210	9.13E-02	7.6E-05	0.0E+00	7.6E-11	0.0E+00	2.7E-02	0.0E+00	3.7E-09	0.0E+00
All Depths	10K330241/VP-32	Th-230	4.86E+00	1.0E-03	8.9E-03	3.6E-09	4.2E-08	1.8E-01	5.0E-01	1.1E-08	1.9E-07
All Depths	10K330241/VP-32	TOTAL		1.1E-03	8.9E-03	3.6E-09	4.2E-08	2.0E-01	5.0E-01	1.5E-08	1.9E-07
Sub. (>0.5 ft)	10K330250/VP-31A	Pb-210	1.76E-01	1.5E-04	0.0E+00	1.5E-10	0.0E+00	5.2E-02	0.0E+00	7.1E-09	0.0E+00
Sub. (>0.5 ft)	10K330250/VP-31A	Th-230	1.09E+01	2.3E-03	2.0E-02	8.0E-09	9.5E-08	4.0E-01	1.1E+00	2.5E-08	4.4E-07
Sub. (>0.5 ft)	10K330250/VP-31A	TOTAL		2.5E-03	2.0E-02	8.2E-09	9.5E-08	4.5E-01	1.1E+00	3.2E-08	4.4E-07
Surf. (<0.5 ft)	10K330250/VP-31A	Pb-210	1.96E-01	1.6E-04	0.0E+00	1.6E-10	0.0E+00	5.7E-02	0.0E+00	7.9E-09	0.0E+00
Surf. (<0.5 ft)	10K330250/VP-31A	Ra-226	3.50E-01	2.2E-02	0.0E+00	1.1E-07	0.0E+00	8.6E-01	0.0E+00	5.1E-07	0.0E+00
Surf. (<0.5 ft)	10K330250/VP-31A	Th-230	1.23E+01	2.6E-03	2.2E-02	9.1E-09	1.1E-07	4.5E-01	1.3E+00	2.8E-08	4.9E-07
Surf. (<0.5 ft)	10K330250/VP-31A	Th-232	8.90E-01	9.3E-04	6.9E-02	1.2E-07	3.6E-07	1.6E-01	2.8E+00	1.9E-09	1.6E-06
Surf. (<0.5 ft)	10K330250/VP-31A	TOTAL		2.6E-02	9.2E-02	2.4E-07	4.7E-07	1.5E+00	4.1E+00	5.5E-07	2.0E-06
All Depths	10K330250/VP-31A	Pb-210	1.55E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.6E-02	0.0E+00	6.2E-09	0.0E+00
All Depths	10K330250/VP-31A	Ra-226	3.50E-01	2.2E-02	0.0E+00	1.1E-07	0.0E+00	8.6E-01	0.0E+00	5.1E-07	0.0E+00
All Depths	10K330250/VP-31A	Th-230	9.44E+00	2.0E-03	1.7E-02	6.9E-09	8.2E-08	3.4E-01	9.8E-01	2.1E-08	3.8E-07
All Depths	10K330250/VP-31A	Th-232	8.90E-01	9.3E-04	6.9E-02	1.2E-07	3.6E-07	1.6E-01	2.8E+00	1.9E-09	1.6E-06
All Depths	10K330250/VP-31A	TOTAL		2.5E-02	8.6E-02	2.4E-07	4.4E-07	1.4E+00	3.8E+00	5.4E-07	1.9E-06

Attachment 12. Radiological Doses and Risks for each Property (page 40 of 60)

			Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope		Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	10K330324/VP-34	Pb-210	4.20E-02	3.5E-05	0.0E+00	3.5E-11	0.0E+00	1.2E-02	0.0E+00	1.7E-09	0.0E+00
Sub. (>0.5 ft)	10K330324/VP-34	Th-230	1.34E+00	2.9E-04	2.4E-03	9.9E-10	1.2E-08	4.9E-02	1.4E-01	3.0E-09	5.3E-08
Sub. (>0.5 ft)	10K330324/VP-34	TOTAL		3.2E-04	2.4E-03	1.0E-09	1.2E-08	6.1E-02	1.4E-01	4.7E-09	5.3E-08
All Depths	10K330324/VP-34	Pb-210	4.20E-02	3.5E-05	0.0E+00	3.5E-11	0.0E+00	1.2E-02	0.0E+00	1.7E-09	0.0E+00
All Depths	10K330324/VP-34	Th-230	1.34E+00	2.9E-04	2.4E-03	9.9E-10	1.2E-08	4.9E-02	1.4E-01	3.0E-09	5.3E-08
All Depths	10K330324/VP-34	TOTAL		3.2E-04	2.4E-03	1.0E-09	1.2E-08	6.1E-02	1.4E-01	4.7E-09	5.3E-08
Sub. (>0.5 ft)	10K330333/VP-33	Pb-210	4.19E-02	3.5E-05	0.0E+00	3.5E-11	0.0E+00	1.2E-02	0.0E+00	1.7E-09	0.0E+00
Sub. (>0.5 ft)	10K330333/VP-33	Th-230	1.33E+00	2.8E-04	2.4E-03	9.8E-10	1.2E-08	4.9E-02	1.4E-01	3.0E-09	5.3E-08
Sub. (>0.5 ft)	10K330333/VP-33	TOTAL		3.2E-04	2.4E-03	1.0E-09	1.2E-08	6.1E-02	1.4E-01	4.7E-09	5.3E-08
All Depths	10K330333/VP-33	Pb-210	4.19E-02	3.5E-05	0.0E+00	3.5E-11	0.0E+00	1.2E-02	0.0E+00	1.7E-09	0.0E+00
All Depths	10K330333/VP-33	Th-230	1.33E+00	2.8E-04	2.4E-03	9.8E-10	1.2E-08	4.9E-02	1.4E-01	3.0E-09	5.3E-08
All Depths	10K330333/VP-33	TOTAL		3.2E-04	2.4E-03	1.0E-09	1.2E-08	6.1E-02	1.4E-01	4.7E-09	5.3E-08
Sub. (>0.5 ft)	10K330342/VP-33	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
Sub. (>0.5 ft)	10K330342/VP-33	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08
Sub. (>0.5 ft)	10K330342/VP-33	TOTAL		1.2E-04	8.0E-04	3.5E-10	3.8E-09	2.5E-02	4.6E-02	2.2E-09	1.8E-08
All Depths	10K330342/VP-33	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
All Depths	10K330342/VP-33	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08
All Depths	10K330342/VP-33	TOTAL		1.2E-04	8.0E-04	3.5E-10	3.8E-09	2.5E-02	4.6E-02	2.2E-09	1.8E-08
Sub. (>0.5 ft)	10K330351/VP-28	Pb-210	5.46E-02	4.6E-05	0.0E+00	4.5E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
Sub. (>0.5 ft)	10K330351/VP-28	Th-230	2.24E+00	4.8E-04	4.1E-03	1.6E-09	2.0E-08	8.2E-02	2.3E-01	5.1E-09	8.9E-08
Sub. (>0.5 ft)	10K330351/VP-28	TOTAL		5.2E-04	4.1E-03	1.7E-09	2.0E-08	9.8E-02	2.3E-01	7.3E-09	8.9E-08
All Depths	10K330351/VP-28	Pb-210	5.46E-02	4.6E-05	0.0E+00	4.5E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
All Depths	10K330351/VP-28	Th-230	2.24E+00	4.8E-04	4.1E-03	1.6E-09	2.0E-08	8.2E-02	2.3E-01	5.1E-09	8.9E-08
All Depths	10K330351/VP-28	TOTAL		5.2E-04	4.1E-03	1.7E-09	2.0E-08	9.8E-02	2.3E-01	7.3E-09	8.9E-08
Surf. (<0.5 ft)	10K420010/VP-9(C)	Pb-210	8.19E-02	6.8E-05	0.0E+00	6.8E-11	0.0E+00	2.4E-02	0.0E+00	3.3E-09	0.0E+00
Surf. (<0.5 ft)	10K420010/VP-9(C)	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	10K420010/VP-9(C)	Th-230	4.19E+00	9.0E-04	7.6E-03	3.1E-09	3.7E-08	1.5E-01	4.3E-01	9.5E-09	1.7E-07
Surf. (<0.5 ft)	10K420010/VP-9(C)	Th-232	1.40E-01	1.5E-04	1.1E-02	1.9E-08	5.7E-08	2.5E-02	4.5E-01	3.0E-10	2.4E-07
Surf. (<0.5 ft)	10K420010/VP-9(C)	U-238	9.12E+00	7.8E-03	0.0E+00	2.9E-08	0.0E+00	4.2E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	10K420010/VP-9(C)	TOTAL		5.6E-02	1.9E-02	2.9E-07	9.3E-08	2.5E+00	8.8E-01	1.3E-06	4.1E-07
All Depths	10K420010/VP-9(C)	Pb-210	8.19E-02	6.8E-05	0.0E+00	6.8E-11	0.0E+00	2.4E-02	0.0E+00	3.3E-09	0.0E+00
All Depths	10K420010/VP-9(C)	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
All Depths	10K420010/VP-9(C)	Th-230	4.19E+00	9.0E-04	7.6E-03	3.1E-09	3.7E-08	1.5E-01	4.3E-01	9.5E-09	1.7E-07
All Depths	10K420010/VP-9(C)	Th-232	1.40E-01	1.5E-04	1.1E-02	1.9E-08	5.7E-08	2.5E-02	4.5E-01	3.0E-10	2.4E-07
All Depths	10K420010/VP-9(C)	U-238	9.12E+00	7.8E-03	0.0E+00	2.9E-08	0.0E+00	4.2E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	10K420010/VP-9(C)	TOTAL		5.6E-02	1.9E-02	2.9E-07	9.3E-08	2.5E+00	8.8E-01	1.3E-06	4.1E-07
Surf. (<0.5 ft)	10K430042/VP-63	Pb-210	3.64E-02	3.0E-05	0.0E+00	3.0E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
Surf. (<0.5 ft)	10K430042/VP-63	Th-230	9.40E-01	2.0E-04	1.7E-03	6.9E-10	8.2E-09	3.4E-02	9.7E-02	2.1E-09	3.8E-08
Surf. (<0.5 ft)	10K430042/VP-63	TOTAL		2.3E-04	1.7E-03	7.2E-10	8.2E-09	4.5E-02	9.7E-02	3.6E-09	3.8E-08
All Depths	10K430042/VP-63	Pb-210	3.64E-02	3.0E-05	0.0E+00	3.0E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
All Depths	10K430042/VP-63	Th-230	9.40E-01	2.0E-04	1.7E-03	6.9E-10	8.2E-09	3.4E-02	9.7E-02	2.1E-09	3.8E-08

Attachment 12. Radiological Doses and Risks for each Property (page 41 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K430042/VP-63	TOTAL		2.3E-04	1.7E-03	7.2E-10	8.2E-09	4.5E-02	9.7E-02	3.6E-09	3.8E-08
Sub. (>0.5 ft)	10K440074/VP-8(C)	Pb-210	3.25E-01	2.7E-04	0.0E+00	2.7E-10	0.0E+00	9.5E-02	0.0E+00	1.3E-08	0.0E+00
Sub. (>0.5 ft)	10K440074/VP-8(C)	Ra-226	8.80E-01	5.5E-02	0.0E+00	2.8E-07	0.0E+00	2.2E+00	0.0E+00	1.3E-06	0.0E+00
Sub. (>0.5 ft)	10K440074/VP-8(C)	Th-230	2.15E+01	4.6E-03	3.9E-02	1.6E-08	1.9E-07	7.9E-01	2.2E+00	4.9E-08	8.6E-07
Sub. (>0.5 ft)	10K440074/VP-8(C)	Th-232	6.10E-01	6.4E-04	4.7E-02	8.1E-08	2.5E-07	1.1E-01	2.0E+00	1.3E-09	1.1E-06
Sub. (>0.5 ft)	10K440074/VP-8(C)	U-238	6.29E+00	5.4E-03	0.0E+00	2.0E-08	0.0E+00	2.9E-01	0.0E+00	1.1E-07	0.0E+00
Sub. (>0.5 ft)	10K440074/VP-8(C)	TOTAL		6.6E-02	8.7E-02	3.9E-07	4.3E-07	3.4E+00	4.2E+00	1.4E-06	1.9E-06
Surf. (<0.5 ft)	10K440074/VP-8(C)	Pb-210	1.74E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	5.1E-02	0.0E+00	7.0E-09	0.0E+00
Surf. (<0.5 ft)	10K440074/VP-8(C)	Ra-226	8.50E-01	5.3E-02	0.0E+00	2.7E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
Surf. (<0.5 ft)	10K440074/VP-8(C)	Th-230	1.07E+01	2.3E-03	2.0E-02	7.9E-09	9.4E-08	3.9E-01	1.1E+00	2.4E-08	4.3E-07
Surf. (<0.5 ft)	10K440074/VP-8(C)	Th-232	1.55E+00	1.6E-03	1.2E-01	2.1E-07	6.3E-07	2.8E-01	5.0E+00	3.3E-09	2.7E-06
Surf. (<0.5 ft)	10K440074/VP-8(C)	U-238	3.02E+00	2.6E-03	0.0E+00	9.5E-09	0.0E+00	1.4E-01	0.0E+00	5.2E-08	0.0E+00
Surf. (<0.5 ft)	10K440074/VP-8(C)	TOTAL		6.0E-02	1.4E-01	4.9E-07	7.2E-07	2.9E+00	6.1E+00	1.3E-06	3.1E-06
All Depths	10K440074/VP-8(C)	Pb-210	1.61E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.7E-02	0.0E+00	6.5E-09	0.0E+00
All Depths	10K440074/VP-8(C)	Ra-226	6.80E-01	4.3E-02	0.0E+00	2.1E-07	0.0E+00	1.7E+00	0.0E+00	9.9E-07	0.0E+00
All Depths	10K440074/VP-8(C)	Th-230	9.84E+00	2.1E-03	1.8E-02	7.2E-09	8.6E-08	3.6E-01	1.0E+00	2.2E-08	3.9E-07
All Depths	10K440074/VP-8(C)	Th-232	1.09E+00	1.1E-03	8.5E-02	1.5E-07	4.4E-07	2.0E-01	3.5E+00	2.4E-09	1.9E-06
All Depths	10K440074/VP-8(C)	U-238	3.02E+00	2.6E-03	0.0E+00	9.5E-09	0.0E+00	1.4E-01	0.0E+00	5.2E-08	0.0E+00
All Depths	10K440074/VP-8(C)	TOTAL		4.9E-02	1.0E-01	3.8E-07	5.3E-07	2.4E+00	4.5E+00	1.1E-06	2.3E-06
Sub. (>0.5 ft)	10K440096	Ac-227	1.54E-01	2.5E-03	0.0E+00	5.2E-09	0.0E+00	2.0E-01	0.0E+00	3.6E-08	0.0E+00
Sub. (>0.5 ft)	10K440096	Pa-231	2.16E-01	6.1E-04	0.0E+00	1.4E-09	0.0E+00	1.1E-01	0.0E+00	2.8E-09	0.0E+00
Sub. (>0.5 ft)	10K440096	Pb-210	7.28E-01	6.1E-04	0.0E+00	6.1E-10	0.0E+00	2.1E-01	0.0E+00	2.9E-08	0.0E+00
Sub. (>0.5 ft)	10K440096	Ra-226	8.40E-01	5.3E-02	0.0E+00	2.6E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	10K440096	Th-230	5.03E+01	1.1E-02	9.2E-02	3.7E-08	4.4E-07	1.8E+00	5.2E+00	1.1E-07	2.0E-06
Sub. (>0.5 ft)	10K440096	Th-232	3.30E-01	3.4E-04	2.6E-02	4.4E-08	1.3E-07	6.0E-02	1.1E+00	7.1E-10	5.8E-07
Sub. (>0.5 ft)	10K440096	U-238	5.41E+00	4.6E-03	0.0E+00	1.7E-08	0.0E+00	2.5E-01	0.0E+00	9.3E-08	0.0E+00
Sub. (>0.5 ft)	10K440096	TOTAL		7.2E-02	1.2E-01	3.7E-07	5.7E-07	4.7E+00	6.3E+00	1.5E-06	2.6E-06
Surf. (<0.5 ft)	10K440096	Pb-210	1.02E-01	8.5E-05	0.0E+00	8.5E-11	0.0E+00	3.0E-02	0.0E+00	4.1E-09	0.0E+00
Surf. (<0.5 ft)	10K440096	Ra-226	5.20E-01	3.3E-02	0.0E+00	1.6E-07	0.0E+00	1.3E+00	0.0E+00	7.5E-07	0.0E+00
Surf. (<0.5 ft)	10K440096	Th-230	5.65E+00	1.2E-03	1.0E-02	4.2E-09	4.9E-08	2.1E-01	5.9E-01	1.3E-08	2.3E-07
Surf. (<0.5 ft)	10K440096	Th-232	8.70E-01	9.1E-04	6.8E-02	1.2E-07	3.5E-07	1.6E-01	2.8E+00	1.9E-09	1.5E-06
Surf. (<0.5 ft)	10K440096	U-238	3.62E+00	3.1E-03	0.0E+00	1.1E-08	0.0E+00	1.6E-01	0.0E+00	6.3E-08	0.0E+00
Surf. (<0.5 ft)	10K440096	TOTAL		3.8E-02	7.8E-02	2.9E-07	4.0E-07	1.8E+00	3.4E+00	8.3E-07	1.7E-06
All Depths	10K440096	Pb-210	1.27E-01	1.1E-04	0.0E+00	1.1E-10	0.0E+00	3.7E-02	0.0E+00	5.1E-09	0.0E+00
All Depths	10K440096	Ra-226	4.80E-01	3.0E-02	0.0E+00	1.5E-07	0.0E+00	1.2E+00	0.0E+00	7.0E-07	0.0E+00
All Depths	10K440096	Th-230	7.41E+00	1.6E-03	1.4E-02	5.4E-09	6.5E-08	2.7E-01	7.7E-01	1.7E-08	3.0E-07
All Depths	10K440096	Th-232	6.90E-01	7.2E-04	5.4E-02	9.2E-08	2.8E-07	1.3E-01	2.2E+00	1.5E-09	1.2E-06
All Depths	10K440096	U-238	3.62E+00	3.1E-03	0.0E+00	1.1E-08	0.0E+00	1.6E-01	0.0E+00	6.3E-08	0.0E+00
All Depths	10K440096	TOTAL		3.6E-02	6.7E-02	2.6E-07	3.4E-07	1.8E+00	3.0E+00	7.8E-07	1.5E-06
Surf. (<0.5 ft)	10K440104/VP-6(C)	Pb-210	2.66E-02	2.2E-05	0.0E+00	2.2E-11	0.0E+00	7.8E-03	0.0E+00	1.1E-09	0.0E+00
Surf. (<0.5 ft)	10K440104/VP-6(C)	Ra-226	4.50E-01	2.8E-02	0.0E+00	1.4E-07	0.0E+00	1.1E+00	0.0E+00	6.5E-07	0.0E+00
Surf. (<0.5 ft)	10K440104/VP-6(C)	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
Surf. (<0.5 ft)	10K440104/VP-6(C)	Th-232	6.90E-01	7.2E-04	5.4E-02	9.2E-08	2.8E-07	1.3E-01	2.2E+00	1.5E-09	1.2E-06
Surf. (<0.5 ft)	10K440104/VP-6(C)	U-238	5.62E+00	4.8E-03	0.0E+00	1.8E-08	0.0E+00	2.6E-01	0.0E+00	9.7E-08	0.0E+00
Surf. (<0.5 ft)	10K440104/VP-6(C)	TOTAL		3.4E-02	5.4E-02	2.5E-07	2.8E-07	1.5E+00	2.2E+00	7.5E-07	1.2E-06

Attachment 12. Radiological Doses and Risks for each Property (page 42 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
All Depths	10K440104/VP-6(C)	Pb-210	2.66E-02	2.2E-05	0.0E+00	2.2E-11	0.0E+00	7.8E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	10K440104/VP-6(C)	Ra-226	4.50E-01	2.8E-02	0.0E+00	1.4E-07	0.0E+00	1.1E+00	0.0E+00	6.5E-07	0.0E+00
All Depths	10K440104/VP-6(C)	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
All Depths	10K440104/VP-6(C)	Th-232	6.90E-01	7.2E-04	5.4E-02	9.2E-08	2.8E-07	1.3E-01	2.2E+00	1.5E-09	1.2E-06
All Depths	10K440104/VP-6(C)	U-238	5.62E+00	4.8E-03	0.0E+00	1.8E-08	0.0E+00	2.6E-01	0.0E+00	9.7E-08	0.0E+00
All Depths	10K440104/VP-6(C)	TOTAL		3.4E-02	5.4E-02	2.5E-07	2.8E-07	1.5E+00	2.2E+00	7.5E-07	1.2E-06
Surf. (<0.5 ft)	10K440113/VP-7(C)	Pb-210	7.28E-02	6.1E-05	0.0E+00	6.1E-11	0.0E+00	2.1E-02	0.0E+00	2.9E-09	0.0E+00
Surf. (<0.5 ft)	10K440113/VP-7(C)	Ra-226	6.50E-01	4.1E-02	0.0E+00	2.0E-07	0.0E+00	1.6E+00	0.0E+00	9.4E-07	0.0E+00
Surf. (<0.5 ft)	10K440113/VP-7(C)	Th-230	3.54E+00	7.6E-04	6.4E-03	2.6E-09	3.1E-08	1.3E-01	3.7E-01	8.1E-09	1.4E-07
Surf. (<0.5 ft)	10K440113/VP-7(C)	Th-232	1.89E+00	2.0E-03	1.5E-01	2.5E-07	7.6E-07	3.4E-01	6.1E+00	4.1E-09	3.3E-06
Surf. (<0.5 ft)	10K440113/VP-7(C)	U-238	3.04E+01	2.6E-02	0.0E+00	9.5E-08	0.0E+00	1.4E+00	0.0E+00	5.3E-07	0.0E+00
Surf. (<0.5 ft)	10K440113/VP-7(C)	TOTAL		7.0E-02	1.5E-01	5.5E-07	7.9E-07	3.5E+00	6.4E+00	1.5E-06	3.4E-06
All Depths	10K440113/VP-7(C)	Pb-210	7.28E-02	6.1E-05	0.0E+00	6.1E-11	0.0E+00	2.1E-02	0.0E+00	2.9E-09	0.0E+00
All Depths	10K440113/VP-7(C)	Ra-226	6.50E-01	4.1E-02	0.0E+00	2.0E-07	0.0E+00	1.6E+00	0.0E+00	9.4E-07	0.0E+00
All Depths	10K440113/VP-7(C)	Th-230	3.54E+00	7.6E-04	6.4E-03	2.6E-09	3.1E-08	1.3E-01	3.7E-01	8.1E-09	1.4E-07
All Depths	10K440113/VP-7(C)	Th-232	1.89E+00	2.0E-03	1.5E-01	2.5E-07	7.6E-07	3.4E-01	6.1E+00	4.1E-09	3.3E-06
All Depths	10K440113/VP-7(C)	U-238	3.04E+01	2.6E-02	0.0E+00	9.5E-08	0.0E+00	1.4E+00	0.0E+00	5.3E-07	0.0E+00
All Depths	10K440113/VP-7(C)	TOTAL		7.0E-02	1.5E-01	5.5E-07	7.9E-07	3.5E+00	6.4E+00	1.5E-06	3.4E-06
Sub. (>0.5 ft)	10K510067/VP-6(L)	Pb-210	9.17E-02	7.6E-05	0.0E+00	7.6E-11	0.0E+00	2.7E-02	0.0E+00	3.7E-09	0.0E+00
Sub. (>0.5 ft)	10K510067/VP-6(L)	Ra-226	7.60E-01	4.8E-02	0.0E+00	2.4E-07	0.0E+00	1.9E+00	0.0E+00	1.1E-06	0.0E+00
Sub. (>0.5 ft)	10K510067/VP-6(L)	Th-230	4.89E+00	1.0E-03	8.9E-03	3.6E-09	4.3E-08	1.8E-01	5.1E-01	1.1E-08	2.0E-07
Sub. (>0.5 ft)	10K510067/VP-6(L)	Th-232	2.06E+00	2.1E-03	1.6E-01	2.7E-07	8.3E-07	3.7E-01	6.6E+00	4.4E-09	3.6E-06
Sub. (>0.5 ft)	10K510067/VP-6(L)	U-238	8.12E+00	6.9E-03	0.0E+00	2.5E-08	0.0E+00	3.7E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	10K510067/VP-6(L)	TOTAL		5.8E-02	1.7E-01	5.4E-07	8.8E-07	2.8E+00	7.1E+00	1.3E-06	3.8E-06
Surf. (<0.5 ft)	10K510067/VP-6(L)	Pb-210	8.78E-02	7.3E-05	0.0E+00	7.3E-11	0.0E+00	2.6E-02	0.0E+00	3.5E-09	0.0E+00
Surf. (<0.5 ft)	10K510067/VP-6(L)	Ra-226	5.30E-01	3.3E-02	0.0E+00	1.7E-07	0.0E+00	1.3E+00	0.0E+00	7.7E-07	0.0E+00
Surf. (<0.5 ft)	10K510067/VP-6(L)	Th-230	4.61E+00	9.9E-04	8.4E-03	3.4E-09	4.0E-08	1.7E-01	4.8E-01	1.0E-08	1.8E-07
Surf. (<0.5 ft)	10K510067/VP-6(L)	Th-232	8.90E-01	9.3E-04	6.9E-02	1.2E-07	3.6E-07	1.6E-01	2.8E+00	1.9E-09	1.6E-06
Surf. (<0.5 ft)	10K510067/VP-6(L)	U-238	7.73E+00	6.6E-03	0.0E+00	2.4E-08	0.0E+00	3.5E-01	0.0E+00	1.3E-07	0.0E+00
Surf. (<0.5 ft)	10K510067/VP-6(L)	TOTAL		4.2E-02	7.8E-02	3.1E-07	4.0E-07	2.0E+00	3.3E+00	9.2E-07	1.7E-06
All Depths	10K510067/VP-6(L)	Pb-210	8.23E-02	6.9E-05	0.0E+00	6.8E-11	0.0E+00	2.4E-02	0.0E+00	3.3E-09	0.0E+00
All Depths	10K510067/VP-6(L)	Ra-226	5.30E-01	3.3E-02	0.0E+00	1.7E-07	0.0E+00	1.3E+00	0.0E+00	7.7E-07	0.0E+00
All Depths	10K510067/VP-6(L)	Th-230	4.22E+00	9.0E-04	7.7E-03	3.1E-09	3.7E-08	1.5E-01	4.4E-01	9.6E-09	1.7E-07
All Depths	10K510067/VP-6(L)	Th-232	1.00E+00	1.0E-03	7.8E-02	1.3E-07	4.0E-07	1.8E-01	3.2E+00	2.2E-09	1.7E-06
All Depths	10K510067/VP-6(L)	U-238	7.63E+00	6.5E-03	0.0E+00	2.4E-08	0.0E+00	3.5E-01	0.0E+00	1.3E-07	0.0E+00
All Depths	10K510067/VP-6(L)	TOTAL		4.2E-02	8.5E-02	3.3E-07	4.4E-07	2.0E+00	3.6E+00	9.1E-07	1.9E-06
Sub. (>0.5 ft)	10K520022/VP-3(L)	Ac-227	7.63E-02	1.2E-03	0.0E+00	2.6E-09	0.0E+00	1.0E-01	0.0E+00	1.8E-08	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Pa-231	1.27E-01	3.6E-04	0.0E+00	8.4E-10	0.0E+00	6.6E-02	0.0E+00	1.6E-09	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Pb-210	5.73E-01	4.8E-04	0.0E+00	4.8E-10	0.0E+00	1.7E-01	0.0E+00	2.3E-08	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Ra-226	1.01E+00	6.3E-02	0.0E+00	3.2E-07	0.0E+00	2.5E+00	0.0E+00	1.5E-06	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	Th-230	3.92E+01	8.4E-03	7.1E-02	2.9E-08	3.4E-07	1.4E+00	4.1E+00	8.9E-08	1.6E-06
Sub. (>0.5 ft)	10K520022/VP-3(L)	Th-232	1.08E+00	1.1E-03	8.4E-02	1.4E-07	4.4E-07	2.0E-01	3.5E+00	2.3E-09	1.9E-06
Sub. (>0.5 ft)	10K520022/VP-3(L)	U-238	1.02E+01	8.7E-03	0.0E+00	3.2E-08	0.0E+00	4.7E-01	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	10K520022/VP-3(L)	TOTAL		8.4E-02	1.6E-01	5.3E-07	7.8E-07	4.9E+00	7.5E+00	1.8E-06	3.4E-06

Attachment 12. Radiological Doses and Risks for each Property (page 43 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K520022/VP-3(L)	Ac-227	2.35E-01	3.8E-03	0.0E+00	7.9E-09	0.0E+00	3.1E-01	0.0E+00	5.4E-08	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Pa-231	3.08E-01	8.7E-04	0.0E+00	2.0E-09	0.0E+00	1.6E-01	0.0E+00	4.0E-09	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Pb-210	8.89E-01	7.4E-04	0.0E+00	7.4E-10	0.0E+00	2.6E-01	0.0E+00	3.6E-08	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Ra-226	1.14E+00	7.2E-02	0.0E+00	3.6E-07	0.0E+00	2.8E+00	0.0E+00	1.7E-06	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	Th-230	6.18E+01	1.3E-02	1.1E-01	4.5E-08	5.4E-07	2.3E+00	6.4E+00	1.4E-07	2.5E-06
Surf. (<0.5 ft)	10K520022/VP-3(L)	Th-232	1.09E+00	1.1E-03	8.5E-02	1.5E-07	4.4E-07	2.0E-01	3.5E+00	2.4E-09	1.9E-06
Surf. (<0.5 ft)	10K520022/VP-3(L)	U-238	8.78E+00	7.5E-03	0.0E+00	2.8E-08	0.0E+00	4.0E-01	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	10K520022/VP-3(L)	TOTAL		9.9E-02	2.0E-01	5.9E-07	9.8E-07	6.4E+00	9.9E+00	2.0E-06	4.4E-06
All Depths	10K520022/VP-3(L)	Ac-227	5.74E-02	9.2E-04	0.0E+00	1.9E-09	0.0E+00	7.6E-02	0.0E+00	1.3E-08	0.0E+00
All Depths	10K520022/VP-3(L)	Pa-231	1.06E-01	3.0E-04	0.0E+00	6.9E-10	0.0E+00	5.5E-02	0.0E+00	1.4E-09	0.0E+00
All Depths	10K520022/VP-3(L)	Pb-210	5.35E-01	4.5E-04	0.0E+00	4.4E-10	0.0E+00	1.6E-01	0.0E+00	2.1E-08	0.0E+00
All Depths	10K520022/VP-3(L)	Ra-226	9.80E-01	6.1E-02	0.0E+00	3.1E-07	0.0E+00	2.4E+00	0.0E+00	1.4E-06	0.0E+00
All Depths	10K520022/VP-3(L)	Th-230	3.65E+01	7.8E-03	6.7E-02	2.7E-08	3.2E-07	1.3E+00	3.8E+00	8.3E-08	1.5E-06
All Depths	10K520022/VP-3(L)	Th-232	1.03E+00	1.1E-03	8.0E-02	1.4E-07	4.2E-07	1.9E-01	3.3E+00	2.2E-09	1.8E-06
All Depths	10K520022/VP-3(L)	U-238	9.72E+00	8.3E-03	0.0E+00	3.0E-08	0.0E+00	4.4E-01	0.0E+00	1.7E-07	0.0E+00
All Depths	10K520022/VP-3(L)	TOTAL		8.0E-02	1.5E-01	5.1E-07	7.3E-07	4.7E+00	7.1E+00	1.7E-06	3.3E-06
Sub. (>0.5 ft)	10K520033/VP-5(L)	Pb-210	2.58E-02	2.1E-05	0.0E+00	2.1E-11	0.0E+00	7.5E-03	0.0E+00	1.0E-09	0.0E+00
Sub. (>0.5 ft)	10K520033/VP-5(L)	Ra-226	8.50E-01	5.3E-02	0.0E+00	2.7E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	10K520033/VP-5(L)	Th-230	1.80E-01	3.9E-05	3.3E-04	1.3E-10	1.6E-09	6.6E-03	1.9E-02	4.1E-10	7.2E-09
Sub. (>0.5 ft)	10K520033/VP-5(L)	Th-232	1.48E+00	1.5E-03	1.2E-01	2.0E-07	6.0E-07	2.7E-01	4.7E+00	3.2E-09	2.6E-06
Sub. (>0.5 ft)	10K520033/VP-5(L)	U-238	1.04E+01	8.9E-03	0.0E+00	3.3E-08	0.0E+00	4.7E-01	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	10K520033/VP-5(L)	TOTAL		6.4E-02	1.2E-01	5.0E-07	6.0E-07	2.8E+00	4.8E+00	1.4E-06	2.6E-06
Surf. (<0.5 ft)	10K520033/VP-5(L)	Pb-210	1.10E-01	9.1E-05	0.0E+00	9.1E-11	0.0E+00	3.2E-02	0.0E+00	4.4E-09	0.0E+00
Surf. (<0.5 ft)	10K520033/VP-5(L)	Ra-226	6.70E-01	4.2E-02	0.0E+00	2.1E-07	0.0E+00	1.6E+00	0.0E+00	9.7E-07	0.0E+00
Surf. (<0.5 ft)	10K520033/VP-5(L)	Th-230	6.17E+00	1.3E-03	1.1E-02	4.5E-09	5.4E-08	2.3E-01	6.4E-01	1.4E-08	2.5E-07
Surf. (<0.5 ft)	10K520033/VP-5(L)	Th-232	8.50E-01	8.9E-04	6.6E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.5E-06
Surf. (<0.5 ft)	10K520033/VP-5(L)	U-238	8.18E+00	7.0E-03	0.0E+00	2.6E-08	0.0E+00	3.7E-01	0.0E+00	1.4E-07	0.0E+00
Surf. (<0.5 ft)	10K520033/VP-5(L)	TOTAL		5.1E-02	7.7E-02	3.5E-07	4.0E-07	2.4E+00	3.4E+00	1.1E-06	1.7E-06
All Depths	10K520033/VP-5(L)	Pb-210	3.29E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.6E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10K520033/VP-5(L)	Ra-226	7.70E-01	4.8E-02	0.0E+00	2.4E-07	0.0E+00	1.9E+00	0.0E+00	1.1E-06	0.0E+00
All Depths	10K520033/VP-5(L)	Th-230	6.90E-01	1.5E-04	1.3E-03	5.1E-10	6.0E-09	2.5E-02	7.2E-02	1.6E-09	2.8E-08
All Depths	10K520033/VP-5(L)	Th-232	1.33E+00	1.4E-03	1.0E-01	1.8E-07	5.4E-07	2.4E-01	4.3E+00	2.9E-09	2.3E-06
All Depths	10K520033/VP-5(L)	U-238	9.92E+00	8.5E-03	0.0E+00	3.1E-08	0.0E+00	4.5E-01	0.0E+00	1.7E-07	0.0E+00
All Depths	10K520033/VP-5(L)	TOTAL		5.8E-02	1.0E-01	4.5E-07	5.4E-07	2.6E+00	4.3E+00	1.3E-06	2.3E-06
Sub. (>0.5 ft)	10K520044/VP-4(L)	Pb-210	1.82E-01	1.5E-04	0.0E+00	1.5E-10	0.0E+00	5.3E-02	0.0E+00	7.3E-09	0.0E+00
Sub. (>0.5 ft)	10K520044/VP-4(L)	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Sub. (>0.5 ft)	10K520044/VP-4(L)	Th-230	1.13E+01	2.4E-03	2.1E-02	8.3E-09	9.9E-08	4.1E-01	1.2E+00	2.6E-08	4.5E-07
Sub. (>0.5 ft)	10K520044/VP-4(L)	Th-232	9.90E-01	1.0E-03	7.7E-02	1.3E-07	4.0E-07	1.8E-01	3.2E+00	2.1E-09	1.7E-06
Sub. (>0.5 ft)	10K520044/VP-4(L)	U-238	8.36E+00	7.1E-03	0.0E+00	2.6E-08	0.0E+00	3.8E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	10K520044/VP-4(L)	TOTAL		5.8E-02	9.8E-02	4.0E-07	5.0E-07	2.9E+00	4.3E+00	1.3E-06	2.2E-06
Surf. (<0.5 ft)	10K520044/VP-4(L)	Ac-227	3.76E-01	6.1E-03	0.0E+00	1.3E-08	0.0E+00	5.0E-01	0.0E+00	8.7E-08	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Pa-231	4.70E-01	1.3E-03	0.0E+00	3.1E-09	0.0E+00	2.4E-01	0.0E+00	6.1E-09	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Pb-210	1.17E+00	9.8E-04	0.0E+00	9.7E-10	0.0E+00	3.4E-01	0.0E+00	4.7E-08	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Ra-226	2.13E+00	1.3E-01	0.0E+00	6.7E-07	0.0E+00	5.2E+00	0.0E+00	3.1E-06	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	Th-230	8.20E+01	1.8E-02	1.5E-01	6.0E-08	7.1E-07	3.0E+00	8.5E+00	1.9E-07	3.3E-06
Surf. (<0.5 ft)	10K520044/VP-4(L)	Th-232	7.00E-01	7.3E-04	5.4E-02	9.3E-08	2.8E-07	1.3E-01	2.2E+00	1.5E-09	1.2E-06

Attachment 12. Radiological Doses and Risks for each Property (page 44 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K520044/VP-4(L)	U-238	8.51E+00	7.3E-03	0.0E+00	2.7E-08	0.0E+00	3.9E-01	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	10K520044/VP-4(L)	TOTAL		1.7E-01	2.0E-01	8.7E-07	1.0E-06	9.8E+00	1.1E+01	3.6E-06	4.5E-06
All Depths	10K520044/VP-4(L)	Pb-210	2.98E-01	2.5E-04	0.0E+00	2.5E-10	0.0E+00	8.7E-02	0.0E+00	1.2E-08	0.0E+00
All Depths	10K520044/VP-4(L)	Ra-226	9.20E-01	5.8E-02	0.0E+00	2.9E-07	0.0E+00	2.3E+00	0.0E+00	1.3E-06	0.0E+00
All Depths	10K520044/VP-4(L)	Th-230	1.96E+01	4.2E-03	3.6E-02	1.4E-08	1.7E-07	7.2E-01	2.0E+00	4.5E-08	7.8E-07
All Depths	10K520044/VP-4(L)	Th-232	8.60E-01	9.0E-04	6.7E-02	1.1E-07	3.5E-07	1.6E-01	2.8E+00	1.9E-09	1.5E-06
All Depths	10K520044/VP-4(L)	U-238	8.20E+00	7.0E-03	0.0E+00	2.6E-08	0.0E+00	3.7E-01	0.0E+00	1.4E-07	0.0E+00
All Depths	10K520044/VP-4(L)	TOTAL		7.0E-02	1.0E-01	4.4E-07	5.2E-07	3.6E+00	4.8E+00	1.5E-06	2.3E-06
Sub. (>0.5 ft)	10K520066/VP-37	Pb-210	8.83E-02	7.4E-05	0.0E+00	7.3E-11	0.0E+00	2.6E-02	0.0E+00	3.5E-09	0.0E+00
Sub. (>0.5 ft)	10K520066/VP-37	Ra-226	6.10E-01	3.8E-02	0.0E+00	1.9E-07	0.0E+00	1.5E+00	0.0E+00	8.8E-07	0.0E+00
Sub. (>0.5 ft)	10K520066/VP-37	Th-230	4.65E+00	1.0E-03	8.5E-03	3.4E-09	4.1E-08	1.7E-01	4.8E-01	1.1E-08	1.9E-07
Sub. (>0.5 ft)	10K520066/VP-37	Th-232	1.06E+00	1.1E-03	8.2E-02	1.4E-07	4.3E-07	1.9E-01	3.4E+00	2.3E-09	1.8E-06
Sub. (>0.5 ft)	10K520066/VP-37	U-238	7.85E+00	6.7E-03	0.0E+00	2.5E-08	0.0E+00	3.6E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	10K520066/VP-37	TOTAL		4.7E-02	9.1E-02	3.6E-07	4.7E-07	2.2E+00	3.9E+00	1.0E-06	2.0E-06
Surf. (<0.5 ft)	10K520066/VP-37	Ac-227	7.07E-01	1.1E-02	0.0E+00	2.4E-08	0.0E+00	9.4E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Pa-231	8.48E-01	2.4E-03	0.0E+00	5.6E-09	0.0E+00	4.4E-01	0.0E+00	1.1E-08	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Pb-210	1.83E+00	1.5E-03	0.0E+00	1.5E-09	0.0E+00	5.4E-01	0.0E+00	7.4E-08	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Ra-226	8.90E-01	5.6E-02	0.0E+00	2.8E-07	0.0E+00	2.2E+00	0.0E+00	1.3E-06	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	Th-230	1.29E+02	2.8E-02	2.4E-01	9.5E-08	1.1E-06	4.7E+00	1.3E+01	2.9E-07	5.2E-06
Surf. (<0.5 ft)	10K520066/VP-37	Th-232	1.51E+00	1.6E-03	1.2E-01	2.0E-07	6.1E-07	2.7E-01	4.8E+00	3.3E-09	2.6E-06
Surf. (<0.5 ft)	10K520066/VP-37	U-234	4.42E-01	4.1E-05	0.0E+00	4.1E-11	0.0E+00	7.6E-03	0.0E+00	1.1E-09	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	U-235	8.12E-03	3.6E-05	0.0E+00	1.0E-10	0.0E+00	1.5E-03	0.0E+00	5.0E-10	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	U-238	1.02E+01	8.7E-03	0.0E+00	3.2E-08	0.0E+00	4.7E-01	0.0E+00	1.8E-07	0.0E+00
Surf. (<0.5 ft)	10K520066/VP-37	TOTAL		1.1E-01	3.5E-01	6.4E-07	1.7E-06	9.6E+00	1.8E+01	2.0E-06	7.8E-06
All Depths	10K520066/VP-37	Pb-210	3.43E-01	2.9E-04	0.0E+00	2.9E-10	0.0E+00	1.0E-01	0.0E+00	1.4E-08	0.0E+00
All Depths	10K520066/VP-37	Ra-226	5.90E-01	3.7E-02	0.0E+00	1.9E-07	0.0E+00	1.4E+00	0.0E+00	8.5E-07	0.0E+00
All Depths	10K520066/VP-37	Th-230	2.28E+01	4.9E-03	4.2E-02	1.7E-08	2.0E-07	8.3E-01	2.4E+00	5.2E-08	9.1E-07
All Depths	10K520066/VP-37	Th-232	1.04E+00	1.1E-03	8.1E-02	1.4E-07	4.2E-07	1.9E-01	3.3E+00	2.2E-09	1.8E-06
All Depths	10K520066/VP-37	U-238	7.88E+00	6.7E-03	0.0E+00	2.5E-08	0.0E+00	3.6E-01	0.0E+00	1.4E-07	0.0E+00
All Depths	10K520066/VP-37	TOTAL		5.0E-02	1.2E-01	3.7E-07	6.2E-07	2.9E+00	5.7E+00	1.1E-06	2.7E-06
Surf. (<0.5 ft)	10K520165	Pb-210	1.54E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.5E-02	0.0E+00	6.2E-09	0.0E+00
Surf. (<0.5 ft)	10K520165	Ra-226	1.45E+00	9.1E-02	0.0E+00	4.6E-07	0.0E+00	3.6E+00	0.0E+00	2.1E-06	0.0E+00
Surf. (<0.5 ft)	10K520165	Th-230	9.34E+00	2.0E-03	1.7E-02	6.9E-09	8.1E-08	3.4E-01	9.7E-01	2.1E-08	3.7E-07
Surf. (<0.5 ft)	10K520165	Th-232	2.59E+00	2.7E-03	2.0E-01	3.5E-07	1.0E-06	4.7E-01	8.3E+00	5.6E-09	4.5E-06
Surf. (<0.5 ft)	10K520165	U-238	1.06E+01	9.1E-03	0.0E+00	3.3E-08	0.0E+00	4.8E-01	0.0E+00	1.8E-07	0.0E+00
Surf. (<0.5 ft)	10K520165	TOTAL		1.0E-01	2.2E-01	8.4E-07	1.1E-06	4.9E+00	9.3E+00	2.3E-06	4.9E-06
All Depths	10K520165	Pb-210	1.54E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.5E-02	0.0E+00	6.2E-09	0.0E+00
All Depths	10K520165	Ra-226	1.45E+00	9.1E-02	0.0E+00	4.6E-07	0.0E+00	3.6E+00	0.0E+00	2.1E-06	0.0E+00
All Depths	10K520165	Th-230	9.34E+00	2.0E-03	1.7E-02	6.9E-09	8.1E-08	3.4E-01	9.7E-01	2.1E-08	3.7E-07
All Depths	10K520165	Th-232	2.59E+00	2.7E-03	2.0E-01	3.5E-07	1.0E-06	4.7E-01	8.3E+00	5.6E-09	4.5E-06
All Depths	10K520165	U-238	1.06E+01	9.1E-03	0.0E+00	3.3E-08	0.0E+00	4.8E-01	0.0E+00	1.8E-07	0.0E+00
All Depths	10K520165	TOTAL		1.0E-01	2.2E-01	8.4E-07	1.1E-06	4.9E+00	9.3E+00	2.3E-06	4.9E-06
Surf. (<0.5 ft)	10K530076	Pb-210	8.82E-02	7.4E-05	0.0E+00	7.3E-11	0.0E+00	2.6E-02	0.0E+00	3.5E-09	0.0E+00
Surf. (<0.5 ft)	10K530076	Th-230	4.64E+00	9.9E-04	8.5E-03	3.4E-09	4.0E-08	1.7E-01	4.8E-01	1.1E-08	1.9E-07
Surf. (<0.5 ft)	10K530076	TOTAL		1.1E-03	8.5E-03	3.5E-09	4.0E-08	2.0E-01	4.8E-01	1.4E-08	1.9E-07

Attachment 12. Radiological Doses and Risks for each Property (page 45 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K530076	Pb-210	8.82E-02	7.4E-05	0.0E+00	7.3E-11	0.0E+00	2.6E-02	0.0E+00	3.5E-09	0.0E+00
All Depths	10K530076	Th-230	4.64E+00	9.9E-04	8.5E-03	3.4E-09	4.0E-08	1.7E-01	4.8E-01	1.1E-08	1.9E-07
All Depths	10K530076	TOTAL		1.1E-03	8.5E-03	3.5E-09	4.0E-08	2.0E-01	4.8E-01	1.4E-08	1.9E-07
Sub. (>0.5 ft)	10K530087	Pb-210	8.29E-02	6.9E-05	0.0E+00	6.9E-11	0.0E+00	2.4E-02	0.0E+00	3.3E-09	0.0E+00
Sub. (>0.5 ft)	10K530087	Ra-226	5.00E-01	3.1E-02	0.0E+00	1.6E-07	0.0E+00	1.2E+00	0.0E+00	7.2E-07	0.0E+00
Sub. (>0.5 ft)	10K530087	Th-230	4.26E+00	9.1E-04	7.8E-03	3.1E-09	3.7E-08	1.6E-01	4.4E-01	9.7E-09	1.7E-07
Sub. (>0.5 ft)	10K530087	Th-232	6.50E-01	6.8E-04	5.1E-02	8.7E-08	2.6E-07	1.2E-01	2.1E+00	1.4E-09	1.1E-06
Sub. (>0.5 ft)	10K530087	U-238	7.71E+00	6.6E-03	0.0E+00	2.4E-08	0.0E+00	3.5E-01	0.0E+00	1.3E-07	0.0E+00
Sub. (>0.5 ft)	10K530087	TOTAL		4.0E-02	5.8E-02	2.7E-07	3.0E-07	1.9E+00	2.5E+00	8.7E-07	1.3E-06
Surf. (<0.5 ft)	10K530087	Ac-227	2.30E+00	3.7E-02	0.0E+00	7.7E-08	0.0E+00	3.0E+00	0.0E+00	5.3E-07	0.0E+00
Surf. (<0.5 ft)	10K530087	Pa-231	2.66E+00	7.5E-03	0.0E+00	1.7E-08	0.0E+00	1.4E+00	0.0E+00	3.5E-08	0.0E+00
Surf. (<0.5 ft)	10K530087	Pb-210	5.01E+00	4.2E-03	0.0E+00	4.2E-09	0.0E+00	1.5E+00	0.0E+00	2.0E-07	0.0E+00
Surf. (<0.5 ft)	10K530087	Ra-226	2.47E+00	1.5E-01	0.0E+00	7.8E-07	0.0E+00	6.1E+00	0.0E+00	3.6E-06	0.0E+00
Surf. (<0.5 ft)	10K530087	Th-230	3.56E+02	7.6E-02	6.5E-01	2.6E-07	3.1E-06	1.3E+01	3.7E+01	8.1E-07	1.4E-05
Surf. (<0.5 ft)	10K530087	Th-232	1.50E+00	1.6E-03	1.2E-01	2.0E-07	6.1E-07	2.7E-01	4.8E+00	3.2E-09	2.6E-06
Surf. (<0.5 ft)	10K530087	U-234	3.17E+00	2.9E-04	0.0E+00	2.9E-10	0.0E+00	5.4E-02	0.0E+00	7.5E-09	0.0E+00
Surf. (<0.5 ft)	10K530087	U-235	1.26E-01	5.6E-04	0.0E+00	1.6E-09	0.0E+00	2.3E-02	0.0E+00	7.8E-09	0.0E+00
Surf. (<0.5 ft)	10K530087	U-238	1.10E+01	9.4E-03	0.0E+00	3.5E-08	0.0E+00	5.0E-01	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	10K530087	TOTAL		2.9E-01	7.7E-01	1.4E-06	3.7E-06	2.6E+01	4.2E+01	5.4E-06	1.7E-05
All Depths	10K530087	Ac-227	1.80E-01	2.9E-03	0.0E+00	6.1E-09	0.0E+00	2.4E-01	0.0E+00	4.2E-08	0.0E+00
All Depths	10K530087	Pa-231	2.46E-01	6.9E-04	0.0E+00	1.6E-09	0.0E+00	1.3E-01	0.0E+00	3.2E-09	0.0E+00
All Depths	10K530087	Pb-210	7.80E-01	6.5E-04	0.0E+00	6.5E-10	0.0E+00	2.3E-01	0.0E+00	3.1E-08	0.0E+00
All Depths	10K530087	Ra-226	1.15E+00	7.2E-02	0.0E+00	3.6E-07	0.0E+00	2.8E+00	0.0E+00	1.7E-06	0.0E+00
All Depths	10K530087	Th-230	5.40E+01	1.2E-02	9.8E-02	4.0E-08	4.7E-07	2.0E+00	5.6E+00	1.2E-07	2.2E-06
All Depths	10K530087	Th-232	9.30E-01	9.7E-04	7.2E-02	1.2E-07	3.8E-07	1.7E-01	3.0E+00	2.0E-09	1.6E-06
All Depths	10K530087	U-238	8.65E+00	7.4E-03	0.0E+00	2.7E-08	0.0E+00	3.9E-01	0.0E+00	1.5E-07	0.0E+00
All Depths	10K530087	TOTAL		9.6E-02	1.7E-01	5.6E-07	8.5E-07	6.0E+00	8.6E+00	2.0E-06	3.8E-06
Sub. (>0.5 ft)	10K530098/VP-1(L)	Pb-210	9.91E-02	8.3E-05	0.0E+00	8.2E-11	0.0E+00	2.9E-02	0.0E+00	4.0E-09	0.0E+00
Sub. (>0.5 ft)	10K530098/VP-1(L)	Ra-226	6.60E-01	4.1E-02	0.0E+00	2.1E-07	0.0E+00	1.6E+00	0.0E+00	9.6E-07	0.0E+00
Sub. (>0.5 ft)	10K530098/VP-1(L)	Th-230	5.42E+00	1.2E-03	9.9E-03	4.0E-09	4.7E-08	2.0E-01	5.6E-01	1.2E-08	2.2E-07
Sub. (>0.5 ft)	10K530098/VP-1(L)	Th-232	8.40E-01	8.8E-04	6.5E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.5E-06
Sub. (>0.5 ft)	10K530098/VP-1(L)	U-238	4.62E+00	3.9E-03	0.0E+00	1.4E-08	0.0E+00	2.1E-01	0.0E+00	8.0E-08	0.0E+00
Sub. (>0.5 ft)	10K530098/VP-1(L)	TOTAL		4.7E-02	7.5E-02	3.4E-07	3.9E-07	2.2E+00	3.3E+00	1.1E-06	1.7E-06
Surf. (<0.5 ft)	10K530098/VP-1(L)	Ac-227	1.03E+00	1.7E-02	0.0E+00	3.5E-08	0.0E+00	1.4E+00	0.0E+00	2.4E-07	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Pa-231	1.22E+00	3.4E-03	0.0E+00	8.0E-09	0.0E+00	6.3E-01	0.0E+00	1.6E-08	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Pb-210	2.48E+00	2.1E-03	0.0E+00	2.1E-09	0.0E+00	7.3E-01	0.0E+00	9.9E-08	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Ra-226	1.49E+00	9.3E-02	0.0E+00	4.7E-07	0.0E+00	3.7E+00	0.0E+00	2.2E-06	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	Th-230	1.75E+02	3.8E-02	3.2E-01	1.3E-07	1.5E-06	6.4E+00	1.8E+01	4.0E-07	7.0E-06
Surf. (<0.5 ft)	10K530098/VP-1(L)	Th-232	3.08E+00	3.2E-03	2.4E-01	4.1E-07	1.2E-06	5.6E-01	9.9E+00	6.6E-09	5.4E-06
Surf. (<0.5 ft)	10K530098/VP-1(L)	U-234	9.94E-01	9.2E-05	0.0E+00	9.1E-11	0.0E+00	1.7E-02	0.0E+00	2.4E-09	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	U-235	3.20E-02	1.4E-04	0.0E+00	4.1E-10	0.0E+00	5.8E-03	0.0E+00	2.0E-09	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	U-238	1.11E+01	9.5E-03	0.0E+00	3.5E-08	0.0E+00	5.1E-01	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	10K530098/VP-1(L)	TOTAL		1.7E-01	5.6E-01	1.1E-06	2.8E-06	1.4E+01	2.8E+01	3.1E-06	1.2E-05
All Depths	10K530098/VP-1(L)	Ac-227	2.74E-01	4.4E-03	0.0E+00	9.3E-09	0.0E+00	3.6E-01	0.0E+00	6.4E-08	0.0E+00
All Depths	10K530098/VP-1(L)	Pa-231	3.54E-01	1.0E-03	0.0E+00	2.3E-09	0.0E+00	1.8E-01	0.0E+00	4.6E-09	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 46 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10K530098/VP-1(L)	Pb-210	9.69E-01	8.1E-04	0.0E+00	8.1E-10	0.0E+00	2.8E-01	0.0E+00	3.9E-08	0.0E+00
All Depths	10K530098/VP-1(L)	Ra-226	9.20E-01	5.8E-02	0.0E+00	2.9E-07	0.0E+00	2.3E+00	0.0E+00	1.3E-06	0.0E+00
All Depths	10K530098/VP-1(L)	Th-230	6.75E+01	1.4E-02	1.2E-01	5.0E-08	5.9E-07	2.5E+00	7.0E+00	1.5E-07	2.7E-06
All Depths	10K530098/VP-1(L)	Th-232	9.70E-01	1.0E-03	7.5E-02	1.3E-07	3.9E-07	1.8E-01	3.1E+00	2.1E-09	1.7E-06
All Depths	10K530098/VP-1(L)	U-238	4.62E+00	3.9E-03	0.0E+00	1.4E-08	0.0E+00	2.1E-01	0.0E+00	8.0E-08	0.0E+00
All Depths	10K530098/VP-1(L)	TOTAL		8.3E-02	2.0E-01	4.9E-07	9.8E-07	5.9E+00	1.0E+01	1.7E-06	4.4E-06
Sub. (>0.5 ft)	10K540031/VP-41	Pb-210	3.30E-02	2.8E-05	0.0E+00	2.7E-11	0.0E+00	9.7E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	10K540031/VP-41	Th-230	7.00E-01	1.5E-04	1.3E-03	5.1E-10	6.1E-09	2.6E-02	7.3E-02	1.6E-09	2.8E-08
Sub. (>0.5 ft)	10K540031/VP-41	TOTAL		1.8E-04	1.3E-03	5.4E-10	6.1E-09	3.5E-02	7.3E-02	2.9E-09	2.8E-08
All Depths	10K540031/VP-41	Pb-210	3.30E-02	2.8E-05	0.0E+00	2.7E-11	0.0E+00	9.7E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10K540031/VP-41	Th-230	7.00E-01	1.5E-04	1.3E-03	5.1E-10	6.1E-09	2.6E-02	7.3E-02	1.6E-09	2.8E-08
All Depths	10K540031/VP-41	TOTAL		1.8E-04	1.3E-03	5.4E-10	6.1E-09	3.5E-02	7.3E-02	2.9E-09	2.8E-08
Sub. (>0.5 ft)	10K540075/VP-43	Pb-210	2.14E-02	1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.3E-03	0.0E+00	8.6E-10	0.0E+00
Sub. (>0.5 ft)	10K540075/VP-43	TOTAL		1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.3E-03	0.0E+00	8.6E-10	0.0E+00
All Depths	10K540075/VP-43	Pb-210	2.14E-02	1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.3E-03	0.0E+00	8.6E-10	0.0E+00
All Depths	10K540075/VP-43	TOTAL		1.8E-05	0.0E+00	1.8E-11	0.0E+00	6.3E-03	0.0E+00	8.6E-10	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	Pb-210	4.96E-02	4.1E-05	0.0E+00	4.1E-11	0.0E+00	1.5E-02	0.0E+00	2.0E-09	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	Ra-226	5.50E-01	3.4E-02	0.0E+00	1.7E-07	0.0E+00	1.4E+00	0.0E+00	8.0E-07	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	Th-230	1.88E+00	4.0E-04	3.4E-03	1.4E-09	1.6E-08	6.9E-02	1.9E-01	4.3E-09	7.5E-08
Sub. (>0.5 ft)	10K540097/VP-38	Th-232	1.10E+00	1.1E-03	8.6E-02	1.5E-07	4.4E-07	2.0E-01	3.5E+00	2.4E-09	1.9E-06
Sub. (>0.5 ft)	10K540097/VP-38	U-238	9.02E+00	7.7E-03	0.0E+00	2.8E-08	0.0E+00	4.1E-01	0.0E+00	1.6E-07	0.0E+00
Sub. (>0.5 ft)	10K540097/VP-38	TOTAL		4.4E-02	8.9E-02	3.5E-07	4.6E-07	2.0E+00	3.7E+00	9.6E-07	2.0E-06
Surf. (<0.5 ft)	10K540097/VP-38	Pb-210	1.89E-01	1.6E-04	0.0E+00	1.6E-10	0.0E+00	5.5E-02	0.0E+00	7.6E-09	0.0E+00
Surf. (<0.5 ft)	10K540097/VP-38	Ra-226	1.10E+00	6.9E-02	0.0E+00	3.5E-07	0.0E+00	2.7E+00	0.0E+00	1.6E-06	0.0E+00
Surf. (<0.5 ft)	10K540097/VP-38	Th-230	1.18E+01	2.5E-03	2.2E-02	8.7E-09	1.0E-07	4.3E-01	1.2E+00	2.7E-08	4.7E-07
Surf. (<0.5 ft)	10K540097/VP-38	Th-232	1.05E+00	1.1E-03	8.2E-02	1.4E-07	4.2E-07	1.9E-01	3.4E+00	2.3E-09	1.8E-06
Surf. (<0.5 ft)	10K540097/VP-38	U-238	9.42E+00	8.1E-03	0.0E+00	3.0E-08	0.0E+00	4.3E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	10K540097/VP-38	TOTAL		8.1E-02	1.0E-01	5.2E-07	5.3E-07	3.8E+00	4.6E+00	1.8E-06	2.3E-06
All Depths	10K540097/VP-38	Pb-210	6.43E-02	5.4E-05	0.0E+00	5.3E-11	0.0E+00	1.9E-02	0.0E+00	2.6E-09	0.0E+00
All Depths	10K540097/VP-38	Ra-226	6.20E-01	3.9E-02	0.0E+00	1.9E-07	0.0E+00	1.5E+00	0.0E+00	9.0E-07	0.0E+00
All Depths	10K540097/VP-38	Th-230	2.93E+00	6.3E-04	5.3E-03	2.2E-09	2.6E-08	1.1E-01	3.0E-01	6.7E-09	1.2E-07
All Depths	10K540097/VP-38	Th-232	1.06E+00	1.1E-03	8.2E-02	1.4E-07	4.3E-07	1.9E-01	3.4E+00	2.3E-09	1.8E-06
All Depths	10K540097/VP-38	U-238	8.92E+00	7.6E-03	0.0E+00	2.8E-08	0.0E+00	4.1E-01	0.0E+00	1.5E-07	0.0E+00
All Depths	10K540097/VP-38	TOTAL		4.8E-02	8.8E-02	3.7E-07	4.5E-07	2.2E+00	3.7E+00	1.1E-06	2.0E-06
Sub. (>0.5 ft)	10K610178/VP-35	Pb-210	3.09E-02	2.6E-05	0.0E+00	2.6E-11	0.0E+00	9.1E-03	0.0E+00	1.2E-09	0.0E+00
Sub. (>0.5 ft)	10K610178/VP-35	Ra-226	7.30E-01	4.6E-02	0.0E+00	2.3E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Sub. (>0.5 ft)	10K610178/VP-35	Th-230	5.50E-01	1.2E-04	1.0E-03	4.0E-10	4.8E-09	2.0E-02	5.7E-02	1.3E-09	2.2E-08
Sub. (>0.5 ft)	10K610178/VP-35	Th-232	1.61E+00	1.7E-03	1.3E-01	2.1E-07	6.5E-07	2.9E-01	5.2E+00	3.5E-09	2.8E-06
Sub. (>0.5 ft)	10K610178/VP-35	U-238	1.00E+01	8.6E-03	0.0E+00	3.1E-08	0.0E+00	4.6E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	10K610178/VP-35	TOTAL		5.6E-02	1.3E-01	4.8E-07	6.6E-07	2.6E+00	5.2E+00	1.2E-06	2.8E-06
Surf. (<0.5 ft)	10K610178/VP-35	Pb-210	3.25E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.5E-03	0.0E+00	1.3E-09	0.0E+00
Surf. (<0.5 ft)	10K610178/VP-35	Ra-226	6.70E-01	4.2E-02	0.0E+00	2.1E-07	0.0E+00	1.6E+00	0.0E+00	9.7E-07	0.0E+00
Surf. (<0.5 ft)	10K610178/VP-35	Th-230	6.60E-01	1.4E-04	1.2E-03	4.9E-10	5.7E-09	2.4E-02	6.8E-02	1.5E-09	2.6E-08

Attachment 12. Radiological Doses and Risks for each Property (page 47 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10K610178/VP-35	Th-232	9.90E-01	1.0E-03	7.7E-02	1.3E-07	4.0E-07	1.8E-01	3.2E+00	2.1E-09	1.7E-06
Surf. (<0.5 ft)	10K610178/VP-35	U-238	8.67E+00	7.4E-03	0.0E+00	2.7E-08	0.0E+00	4.0E-01	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	10K610178/VP-35	TOTAL		5.1E-02	7.8E-02	3.7E-07	4.1E-07	2.3E+00	3.2E+00	1.1E-06	1.8E-06
All Depths	10K610178/VP-35	Pb-210	3.18E-02	2.7E-05	0.0E+00	2.6E-11	0.0E+00	9.3E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10K610178/VP-35	Ra-226	6.60E-01	4.1E-02	0.0E+00	2.1E-07	0.0E+00	1.6E+00	0.0E+00	9.6E-07	0.0E+00
All Depths	10K610178/VP-35	Th-230	6.10E-01	1.3E-04	1.1E-03	4.5E-10	5.3E-09	2.2E-02	6.3E-02	1.4E-09	2.4E-08
All Depths	10K610178/VP-35	Th-232	1.01E+00	1.1E-03	7.9E-02	1.3E-07	4.1E-07	1.8E-01	3.2E+00	2.2E-09	1.8E-06
All Depths	10K610178/VP-35	U-238	8.72E+00	7.5E-03	0.0E+00	2.7E-08	0.0E+00	4.0E-01	0.0E+00	1.5E-07	0.0E+00
All Depths	10K610178/VP-35	TOTAL		5.0E-02	8.0E-02	3.7E-07	4.1E-07	2.2E+00	3.3E+00	1.1E-06	1.8E-06
Sub. (>0.5 ft)	10K610189/VP-36	Pb-210	3.23E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.5E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	10K610189/VP-36	Th-230	6.50E-01	1.4E-04	1.2E-03	4.8E-10	5.7E-09	2.4E-02	6.7E-02	1.5E-09	2.6E-08
Sub. (>0.5 ft)	10K610189/VP-36	TOTAL		1.7E-04	1.2E-03	5.0E-10	5.7E-09	3.3E-02	6.7E-02	2.8E-09	2.6E-08
All Depths	10K610189/VP-36	Pb-210	3.23E-02	2.7E-05	0.0E+00	2.7E-11	0.0E+00	9.5E-03	0.0E+00	1.3E-09	0.0E+00
All Depths	10K610189/VP-36	Th-230	6.50E-01	1.4E-04	1.2E-03	4.8E-10	5.7E-09	2.4E-02	6.7E-02	1.5E-09	2.6E-08
All Depths	10K610189/VP-36	TOTAL		1.7E-04	1.2E-03	5.0E-10	5.7E-09	3.3E-02	6.7E-02	2.8E-09	2.6E-08
Surf. (<0.5 ft)	10K620412	Pb-210	9.24E-02	7.7E-05	0.0E+00	7.7E-11	0.0E+00	2.7E-02	0.0E+00	3.7E-09	0.0E+00
Surf. (<0.5 ft)	10K620412	Ra-226	6.50E-01	4.1E-02	0.0E+00	2.0E-07	0.0E+00	1.6E+00	0.0E+00	9.4E-07	0.0E+00
Surf. (<0.5 ft)	10K620412	Th-230	4.94E+00	1.1E-03	9.0E-03	3.6E-09	4.3E-08	1.8E-01	5.1E-01	1.1E-08	2.0E-07
Surf. (<0.5 ft)	10K620412	Th-232	1.90E-01	2.0E-04	1.5E-02	2.5E-08	7.7E-08	3.4E-02	6.1E-01	4.1E-10	3.3E-07
Surf. (<0.5 ft)	10K620412	U-238	1.32E+00	1.1E-03	0.0E+00	4.1E-09	0.0E+00	6.0E-02	0.0E+00	2.3E-08	0.0E+00
Surf. (<0.5 ft)	10K620412	TOTAL		4.3E-02	2.4E-02	2.4E-07	1.2E-07	1.9E+00	1.1E+00	9.8E-07	5.3E-07
All Depths	10K620412	Pb-210	9.24E-02	7.7E-05	0.0E+00	7.7E-11	0.0E+00	2.7E-02	0.0E+00	3.7E-09	0.0E+00
All Depths	10K620412	Ra-226	6.50E-01	4.1E-02	0.0E+00	2.0E-07	0.0E+00	1.6E+00	0.0E+00	9.4E-07	0.0E+00
All Depths	10K620412	Th-230	4.94E+00	1.1E-03	9.0E-03	3.6E-09	4.3E-08	1.8E-01	5.1E-01	1.1E-08	2.0E-07
All Depths	10K620412	Th-232	1.90E-01	2.0E-04	1.5E-02	2.5E-08	7.7E-08	3.4E-02	6.1E-01	4.1E-10	3.3E-07
All Depths	10K620412	U-238	1.32E+00	1.1E-03	0.0E+00	4.1E-09	0.0E+00	6.0E-02	0.0E+00	2.3E-08	0.0E+00
All Depths	10K620412	TOTAL		4.3E-02	2.4E-02	2.4E-07	1.2E-07	1.9E+00	1.1E+00	9.8E-07	5.3E-07
Surf. (<0.5 ft)	10K620452	Pb-210	1.12E-02	9.3E-06	0.0E+00	9.3E-12	0.0E+00	3.3E-03	0.0E+00	4.5E-10	0.0E+00
Surf. (<0.5 ft)	10K620452	TOTAL		9.3E-06	0.0E+00	9.3E-12	0.0E+00	3.3E-03	0.0E+00	4.5E-10	0.0E+00
All Depths	10K620452	Pb-210	1.12E-02	9.3E-06	0.0E+00	9.3E-12	0.0E+00	3.3E-03	0.0E+00	4.5E-10	0.0E+00
All Depths	10K620452	TOTAL		9.3E-06	0.0E+00	9.3E-12	0.0E+00	3.3E-03	0.0E+00	4.5E-10	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	Pb-210	3.50E-02	2.9E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	Ra-226	5.80E-01	3.6E-02	0.0E+00	1.8E-07	0.0E+00	1.4E+00	0.0E+00	8.4E-07	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	Th-230	8.40E-01	1.8E-04	1.5E-03	6.2E-10	7.3E-09	3.1E-02	8.7E-02	1.9E-09	3.4E-08
Sub. (>0.5 ft)	10K630363/VP-39	Th-232	1.03E+00	1.1E-03	8.0E-02	1.4E-07	4.2E-07	1.9E-01	3.3E+00	2.2E-09	1.8E-06
Sub. (>0.5 ft)	10K630363/VP-39	U-238	9.12E+00	7.8E-03	0.0E+00	2.9E-08	0.0E+00	4.2E-01	0.0E+00	1.6E-07	0.0E+00
Sub. (>0.5 ft)	10K630363/VP-39	TOTAL		4.5E-02	8.2E-02	3.5E-07	4.2E-07	2.1E+00	3.4E+00	1.0E-06	1.8E-06
Surf. (<0.5 ft)	10K630363/VP-39	Pb-210	1.72E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	5.0E-02	0.0E+00	6.9E-09	0.0E+00
Surf. (<0.5 ft)	10K630363/VP-39	Ra-226	2.80E-01	1.8E-02	0.0E+00	8.8E-08	0.0E+00	6.9E-01	0.0E+00	4.1E-07	0.0E+00
Surf. (<0.5 ft)	10K630363/VP-39	Th-230	1.06E+01	2.3E-03	1.9E-02	7.8E-09	9.3E-08	3.9E-01	1.1E+00	2.4E-08	4.2E-07
Surf. (<0.5 ft)	10K630363/VP-39	Th-232	6.60E-01	6.9E-04	5.1E-02	8.8E-08	2.7E-07	1.2E-01	2.1E+00	1.4E-09	1.2E-06
Surf. (<0.5 ft)	10K630363/VP-39	U-238	6.71E+00	5.7E-03	0.0E+00	2.1E-08	0.0E+00	3.1E-01	0.0E+00	1.2E-07	0.0E+00
Surf. (<0.5 ft)	10K630363/VP-39	TOTAL		2.6E-02	7.1E-02	2.0E-07	3.6E-07	1.6E+00	3.2E+00	5.5E-07	1.6E-06

Attachment 12. Radiological Doses and Risks for each Property (page 48 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
All Depths	10K630363/VP-39	Pb-210	6.22E-02	5.2E-05	0.0E+00	5.2E-11	0.0E+00	1.8E-02	0.0E+00	2.5E-09	0.0E+00
All Depths	10K630363/VP-39	Ra-226	4.80E-01	3.0E-02	0.0E+00	1.5E-07	0.0E+00	1.2E+00	0.0E+00	7.0E-07	0.0E+00
All Depths	10K630363/VP-39	Th-230	2.78E+00	5.9E-04	5.1E-03	2.0E-09	2.4E-08	1.0E-01	2.9E-01	6.3E-09	1.1E-07
All Depths	10K630363/VP-39	Th-232	9.00E-01	9.4E-04	7.0E-02	1.2E-07	3.6E-07	1.6E-01	2.9E+00	1.9E-09	1.6E-06
All Depths	10K630363/VP-39	U-238	8.37E+00	7.2E-03	0.0E+00	2.6E-08	0.0E+00	3.8E-01	0.0E+00	1.4E-07	0.0E+00
All Depths	10K630363/VP-39	TOTAL		3.9E-02	7.5E-02	3.0E-07	3.9E-07	1.8E+00	3.2E+00	8.5E-07	1.7E-06
Sub. (>0.5 ft)	10L220893/VP-1	Pb-210	2.52E-02	2.1E-05	0.0E+00	2.1E-11	0.0E+00	7.4E-03	0.0E+00	1.0E-09	0.0E+00
Sub. (>0.5 ft)	10L220893/VP-1	Th-230	1.40E-01	3.0E-05	2.6E-04	1.0E-10	1.2E-09	5.1E-03	1.5E-02	3.2E-10	5.6E-09
Sub. (>0.5 ft)	10L220893/VP-1	TOTAL		5.1E-05	2.6E-04	1.2E-10	1.2E-09	1.2E-02	1.5E-02	1.3E-09	5.6E-09
All Depths	10L220893/VP-1	Pb-210	2.52E-02	2.1E-05	0.0E+00	2.1E-11	0.0E+00	7.4E-03	0.0E+00	1.0E-09	0.0E+00
All Depths	10L220893/VP-1	Th-230	1.40E-01	3.0E-05	2.6E-04	1.0E-10	1.2E-09	5.1E-03	1.5E-02	3.2E-10	5.6E-09
All Depths	10L220893/VP-1	TOTAL		5.1E-05	2.6E-04	1.2E-10	1.2E-09	1.2E-02	1.5E-02	1.3E-09	5.6E-09
Sub. (>0.5 ft)	10L240093/VP-2	Pb-210	2.86E-02	2.4E-05	0.0E+00	2.4E-11	0.0E+00	8.4E-03	0.0E+00	1.1E-09	0.0E+00
Sub. (>0.5 ft)	10L240093/VP-2	Th-230	3.80E-01	8.1E-05	6.9E-04	2.8E-10	3.3E-09	1.4E-02	3.9E-02	8.6E-10	1.5E-08
Sub. (>0.5 ft)	10L240093/VP-2	TOTAL		1.1E-04	6.9E-04	3.0E-10	3.3E-09	2.2E-02	3.9E-02	2.0E-09	1.5E-08
All Depths	10L240093/VP-2	Pb-210	2.86E-02	2.4E-05	0.0E+00	2.4E-11	0.0E+00	8.4E-03	0.0E+00	1.1E-09	0.0E+00
All Depths	10L240093/VP-2	Th-230	3.80E-01	8.1E-05	6.9E-04	2.8E-10	3.3E-09	1.4E-02	3.9E-02	8.6E-10	1.5E-08
All Depths	10L240093/VP-2	TOTAL		1.1E-04	6.9E-04	3.0E-10	3.3E-09	2.2E-02	3.9E-02	2.0E-09	1.5E-08
Sub. (>0.5 ft)	10L310011/VP-13	Ac-227	1.60E-01	2.6E-03	0.0E+00	5.4E-09	0.0E+00	2.1E-01	0.0E+00	3.7E-08	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Pa-231	2.23E-01	6.3E-04	0.0E+00	1.5E-09	0.0E+00	1.2E-01	0.0E+00	2.9E-09	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Pb-210	7.41E-01	6.2E-04	0.0E+00	6.2E-10	0.0E+00	2.2E-01	0.0E+00	3.0E-08	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Ra-226	1.45E+00	9.1E-02	0.0E+00	4.6E-07	0.0E+00	3.6E+00	0.0E+00	2.1E-06	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	Th-230	5.12E+01	1.1E-02	9.3E-02	3.8E-08	4.5E-07	1.9E+00	5.3E+00	1.2E-07	2.0E-06
Sub. (>0.5 ft)	10L310011/VP-13	Th-232	1.29E+00	1.3E-03	1.0E-01	1.7E-07	5.2E-07	2.3E-01	4.1E+00	2.8E-09	2.2E-06
Sub. (>0.5 ft)	10L310011/VP-13	U-238	9.42E+00	8.1E-03	0.0E+00	3.0E-08	0.0E+00	4.3E-01	0.0E+00	1.6E-07	0.0E+00
Sub. (>0.5 ft)	10L310011/VP-13	TOTAL		1.2E-01	1.9E-01	7.0E-07	9.7E-07	6.6E+00	9.4E+00	2.5E-06	4.3E-06
Surf. (<0.5 ft)	10L310011/VP-13	Pb-210	2.94E-01	2.5E-04	0.0E+00	2.4E-10	0.0E+00	8.6E-02	0.0E+00	1.2E-08	0.0E+00
Surf. (<0.5 ft)	10L310011/VP-13	Ra-226	7.50E-01	4.7E-02	0.0E+00	2.4E-07	0.0E+00	1.8E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	10L310011/VP-13	Th-230	1.93E+01	4.1E-03	3.5E-02	1.4E-08	1.7E-07	7.1E-01	2.0E+00	4.4E-08	7.7E-07
Surf. (<0.5 ft)	10L310011/VP-13	Th-232	1.90E-01	2.0E-04	1.5E-02	2.5E-08	7.7E-08	3.4E-02	6.1E-01	4.1E-10	3.3E-07
Surf. (<0.5 ft)	10L310011/VP-13	TOTAL		5.2E-02	5.0E-02	2.8E-07	2.5E-07	2.7E+00	2.6E+00	1.1E-06	1.1E-06
All Depths	10L310011/VP-13	Ac-227	1.54E-01	2.5E-03	0.0E+00	5.2E-09	0.0E+00	2.0E-01	0.0E+00	3.6E-08	0.0E+00
All Depths	10L310011/VP-13	Pa-231	2.16E-01	6.1E-04	0.0E+00	1.4E-09	0.0E+00	1.1E-01	0.0E+00	2.8E-09	0.0E+00
All Depths	10L310011/VP-13	Pb-210	7.28E-01	6.1E-04	0.0E+00	6.1E-10	0.0E+00	2.1E-01	0.0E+00	2.9E-08	0.0E+00
All Depths	10L310011/VP-13	Ra-226	1.36E+00	8.5E-02	0.0E+00	4.3E-07	0.0E+00	3.3E+00	0.0E+00	2.0E-06	0.0E+00
All Depths	10L310011/VP-13	Th-230	5.03E+01	1.1E-02	9.2E-02	3.7E-08	4.4E-07	1.8E+00	5.2E+00	1.1E-07	2.0E-06
All Depths	10L310011/VP-13	Th-232	1.20E+00	1.3E-03	9.3E-02	1.6E-07	4.9E-07	2.2E-01	3.8E+00	2.6E-09	2.1E-06
All Depths	10L310011/VP-13	U-238	9.82E+00	8.4E-03	0.0E+00	3.1E-08	0.0E+00	4.5E-01	0.0E+00	1.7E-07	0.0E+00
All Depths	10L310011/VP-13	TOTAL		1.1E-01	1.9E-01	6.6E-07	9.2E-07	6.4E+00	9.1E+00	2.3E-06	4.1E-06
Sub. (>0.5 ft)	10L330022/VP-8	Pb-210	1.61E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.7E-02	0.0E+00	6.5E-09	0.0E+00
Sub. (>0.5 ft)	10L330022/VP-8	Th-230	9.84E+00	2.1E-03	1.8E-02	7.2E-09	8.6E-08	3.6E-01	1.0E+00	2.2E-08	3.9E-07
Sub. (>0.5 ft)	10L330022/VP-8	TOTAL		2.2E-03	1.8E-02	7.4E-09	8.6E-08	4.1E-01	1.0E+00	2.9E-08	3.9E-07

Attachment 12. Radiological Doses and Risks for each Property (page 49 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	10L330022/VP-8	Pb-210	1.61E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.7E-02	0.0E+00	6.5E-09	0.0E+00
All Depths	10L330022/VP-8	Th-230	9.84E+00	2.1E-03	1.8E-02	7.2E-09	8.6E-08	3.6E-01	1.0E+00	2.2E-08	3.9E-07
All Depths	10L330022/VP-8	TOTAL		2.2E-03	1.8E-02	7.4E-09	8.6E-08	4.1E-01	1.0E+00	2.9E-08	3.9E-07
Sub. (>0.5 ft)	10L330031/VP-7	Pb-210	1.60E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.7E-02	0.0E+00	6.4E-09	0.0E+00
Sub. (>0.5 ft)	10L330031/VP-7	Th-230	9.74E+00	2.1E-03	1.8E-02	7.2E-09	8.5E-08	3.6E-01	1.0E+00	2.2E-08	3.9E-07
Sub. (>0.5 ft)	10L330031/VP-7	TOTAL		2.2E-03	1.8E-02	7.3E-09	8.5E-08	4.0E-01	1.0E+00	2.9E-08	3.9E-07
All Depths	10L330031/VP-7	Pb-210	1.60E-01	1.3E-04	0.0E+00	1.3E-10	0.0E+00	4.7E-02	0.0E+00	6.4E-09	0.0E+00
All Depths	10L330031/VP-7	Th-230	9.74E+00	2.1E-03	1.8E-02	7.2E-09	8.5E-08	3.6E-01	1.0E+00	2.2E-08	3.9E-07
All Depths	10L330031/VP-7	TOTAL		2.2E-03	1.8E-02	7.3E-09	8.5E-08	4.0E-01	1.0E+00	2.9E-08	3.9E-07
Sub. (>0.5 ft)	10L330040/VP-6	Pb-210	3.57E-02	3.0E-05	0.0E+00	3.0E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
Sub. (>0.5 ft)	10L330040/VP-6	Th-230	8.90E-01	1.9E-04	1.6E-03	6.5E-10	7.8E-09	3.2E-02	9.2E-02	2.0E-09	3.6E-08
Sub. (>0.5 ft)	10L330040/VP-6	TOTAL		2.2E-04	1.6E-03	6.8E-10	7.8E-09	4.3E-02	9.2E-02	3.5E-09	3.6E-08
All Depths	10L330040/VP-6	Pb-210	3.57E-02	3.0E-05	0.0E+00	3.0E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
All Depths	10L330040/VP-6	Th-230	8.90E-01	1.9E-04	1.6E-03	6.5E-10	7.8E-09	3.2E-02	9.2E-02	2.0E-09	3.6E-08
All Depths	10L330040/VP-6	TOTAL		2.2E-04	1.6E-03	6.8E-10	7.8E-09	4.3E-02	9.2E-02	3.5E-09	3.6E-08
Sub. (>0.5 ft)	10L330073/VP-9	Pb-210	1.68E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	4.9E-02	0.0E+00	6.7E-09	0.0E+00
Sub. (>0.5 ft)	10L330073/VP-9	Th-230	1.03E+01	2.2E-03	1.9E-02	7.6E-09	9.0E-08	3.8E-01	1.1E+00	2.4E-08	4.1E-07
Sub. (>0.5 ft)	10L330073/VP-9	TOTAL		2.4E-03	1.9E-02	7.7E-09	9.0E-08	4.3E-01	1.1E+00	3.0E-08	4.1E-07
All Depths	10L330073/VP-9	Pb-210	1.68E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	4.9E-02	0.0E+00	6.7E-09	0.0E+00
All Depths	10L330073/VP-9	Th-230	1.03E+01	2.2E-03	1.9E-02	7.6E-09	9.0E-08	3.8E-01	1.1E+00	2.4E-08	4.1E-07
All Depths	10L330073/VP-9	TOTAL		2.4E-03	1.9E-02	7.7E-09	9.0E-08	4.3E-01	1.1E+00	3.0E-08	4.1E-07
Sub. (>0.5 ft)	10L330114/VP-4,5	Pb-210	3.49E-02	2.9E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
Sub. (>0.5 ft)	10L330114/VP-4,5	Th-230	8.30E-01	1.8E-04	1.5E-03	6.1E-10	7.2E-09	3.0E-02	8.6E-02	1.9E-09	3.3E-08
Sub. (>0.5 ft)	10L330114/VP-4,5	TOTAL		2.1E-04	1.5E-03	6.4E-10	7.2E-09	4.0E-02	8.6E-02	3.3E-09	3.3E-08
All Depths	10L330114/VP-4,5	Pb-210	3.49E-02	2.9E-05	0.0E+00	2.9E-11	0.0E+00	1.0E-02	0.0E+00	1.4E-09	0.0E+00
All Depths	10L330114/VP-4,5	Th-230	8.30E-01	1.8E-04	1.5E-03	6.1E-10	7.2E-09	3.0E-02	8.6E-02	1.9E-09	3.3E-08
All Depths	10L330114/VP-4,5	TOTAL		2.1E-04	1.5E-03	6.4E-10	7.2E-09	4.0E-02	8.6E-02	3.3E-09	3.3E-08
Sub. (>0.5 ft)	10L330123/VP-3	Pb-210	5.46E-02	4.6E-05	0.0E+00	4.5E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
Sub. (>0.5 ft)	10L330123/VP-3	Th-230	2.24E+00	4.8E-04	4.1E-03	1.6E-09	2.0E-08	8.2E-02	2.3E-01	5.1E-09	8.9E-08
Sub. (>0.5 ft)	10L330123/VP-3	TOTAL		5.2E-04	4.1E-03	1.7E-09	2.0E-08	9.8E-02	2.3E-01	7.3E-09	8.9E-08
All Depths	10L330123/VP-3	Pb-210	5.46E-02	4.6E-05	0.0E+00	4.5E-11	0.0E+00	1.6E-02	0.0E+00	2.2E-09	0.0E+00
All Depths	10L330123/VP-3	Th-230	2.24E+00	4.8E-04	4.1E-03	1.6E-09	2.0E-08	8.2E-02	2.3E-01	5.1E-09	8.9E-08
All Depths	10L330123/VP-3	TOTAL		5.2E-04	4.1E-03	1.7E-09	2.0E-08	9.8E-02	2.3E-01	7.3E-09	8.9E-08
Sub. (>0.5 ft)	10L340041/VP-40A	Pb-210	3.23E-01	2.7E-04	0.0E+00	2.7E-10	0.0E+00	9.5E-02	0.0E+00	1.3E-08	0.0E+00
Sub. (>0.5 ft)	10L340041/VP-40A	Ra-226	2.13E+00	1.3E-01	0.0E+00	6.7E-07	0.0E+00	5.2E+00	0.0E+00	3.1E-06	0.0E+00
Sub. (>0.5 ft)	10L340041/VP-40A	Th-230	2.14E+01	4.6E-03	3.9E-02	1.6E-08	1.9E-07	7.8E-01	2.2E+00	4.9E-08	8.6E-07
Sub. (>0.5 ft)	10L340041/VP-40A	Th-232	7.90E-01	8.2E-04	6.1E-02	1.1E-07	3.2E-07	1.4E-01	2.5E+00	1.7E-09	1.4E-06
Sub. (>0.5 ft)	10L340041/VP-40A	U-238	8.10E+00	6.9E-03	0.0E+00	2.5E-08	0.0E+00	3.7E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	10L340041/VP-40A	TOTAL		1.5E-01	1.0E-01	8.2E-07	5.1E-07	6.6E+00	4.8E+00	3.3E-06	2.2E-06
Surf. (<0.5 ft)	10L340041/VP-40A	Ac-227	1.20E-01	1.9E-03	0.0E+00	4.1E-09	0.0E+00	1.6E-01	0.0E+00	2.8E-08	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 50 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	10L340041/VP-40A	Pb-210	4.69E+00	3.9E-03	0.0E+00	3.9E-09	0.0E+00	1.4E+00	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	Ra-226	1.34E+01	8.4E-01	0.0E+00	4.2E-06	0.0E+00	3.3E+01	0.0E+00	1.9E-05	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	Th-230	3.33E+02	7.1E-02	6.1E-01	2.5E-07	2.9E-06	1.2E+01	3.5E+01	7.6E-07	1.3E-05
Surf. (<0.5 ft)	10L340041/VP-40A	Th-232	9.50E-01	9.9E-04	7.4E-02	1.3E-07	3.8E-07	1.7E-01	3.0E+00	2.1E-09	1.7E-06
Surf. (<0.5 ft)	10L340041/VP-40A	U-234	2.89E+00	2.7E-04	0.0E+00	2.6E-10	0.0E+00	5.0E-02	0.0E+00	6.9E-09	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	U-235	1.28E-01	5.7E-04	0.0E+00	1.6E-09	0.0E+00	2.3E-02	0.0E+00	7.9E-09	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	U-238	1.19E+01	1.0E-02	0.0E+00	3.7E-08	0.0E+00	5.4E-01	0.0E+00	2.1E-07	0.0E+00
Surf. (<0.5 ft)	10L340041/VP-40A	TOTAL		9.3E-01	6.8E-01	4.6E-06	3.3E-06	4.7E+01	3.8E+01	2.1E-05	1.5E-05
All Depths	10L340041/VP-40A	Ac-227	1.20E-01	1.9E-03	0.0E+00	4.1E-09	0.0E+00	1.6E-01	0.0E+00	2.8E-08	0.0E+00
All Depths	10L340041/VP-40A	Pb-210	2.53E+00	2.1E-03	0.0E+00	2.1E-09	0.0E+00	7.4E-01	0.0E+00	1.0E-07	0.0E+00
All Depths	10L340041/VP-40A	Ra-226	6.61E+00	4.1E-01	0.0E+00	2.1E-06	0.0E+00	1.6E+01	0.0E+00	9.6E-06	0.0E+00
All Depths	10L340041/VP-40A	Th-230	1.79E+02	3.8E-02	3.3E-01	1.3E-07	1.6E-06	6.5E+00	1.9E+01	4.1E-07	7.2E-06
All Depths	10L340041/VP-40A	Th-232	8.30E-01	8.6E-04	6.5E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.4E-06
All Depths	10L340041/VP-40A	U-234	1.04E+00	9.7E-05	0.0E+00	9.6E-11	0.0E+00	1.8E-02	0.0E+00	2.5E-09	0.0E+00
All Depths	10L340041/VP-40A	U-235	1.28E-01	5.7E-04	0.0E+00	1.6E-09	0.0E+00	2.3E-02	0.0E+00	7.9E-09	0.0E+00
All Depths	10L340041/VP-40A	U-238	9.42E+00	8.1E-03	0.0E+00	3.0E-08	0.0E+00	4.3E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	10L340041/VP-40A	TOTAL		4.7E-01	3.9E-01	2.4E-06	1.9E-06	2.4E+01	2.1E+01	1.0E-05	8.6E-06
Sub. (>0.5 ft)	10L340142/VP-12	Pb-210	1.16E-01	9.7E-05	0.0E+00	9.6E-11	0.0E+00	3.4E-02	0.0E+00	4.6E-09	0.0E+00
Sub. (>0.5 ft)	10L340142/VP-12	Ra-226	8.40E-01	5.3E-02	0.0E+00	2.6E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	10L340142/VP-12	Th-230	6.61E+00	1.4E-03	1.2E-02	4.9E-09	5.8E-08	2.4E-01	6.9E-01	1.5E-08	2.6E-07
Sub. (>0.5 ft)	10L340142/VP-12	Th-232	8.00E-01	8.3E-04	6.2E-02	1.1E-07	3.2E-07	1.5E-01	2.6E+00	1.7E-09	1.4E-06
Sub. (>0.5 ft)	10L340142/VP-12	U-238	1.02E+01	8.7E-03	0.0E+00	3.2E-08	0.0E+00	4.7E-01	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	10L340142/VP-12	TOTAL		6.4E-02	7.4E-02	4.1E-07	3.8E-07	2.9E+00	3.2E+00	1.4E-06	1.7E-06
Surf. (<0.5 ft)	10L340142/VP-12	Ac-227	1.75E+00	2.8E-02	0.0E+00	5.9E-08	0.0E+00	2.3E+00	0.0E+00	4.1E-07	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Pa-231	2.04E+00	5.7E-03	0.0E+00	1.3E-08	0.0E+00	1.1E+00	0.0E+00	2.6E-08	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Pb-210	3.92E+00	3.3E-03	0.0E+00	3.3E-09	0.0E+00	1.1E+00	0.0E+00	1.6E-07	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Ra-226	2.45E+00	1.5E-01	0.0E+00	7.7E-07	0.0E+00	6.0E+00	0.0E+00	3.6E-06	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	Th-230	2.78E+02	6.0E-02	5.1E-01	2.0E-07	2.4E-06	1.0E+01	2.9E+01	6.3E-07	1.1E-05
Surf. (<0.5 ft)	10L340142/VP-12	Th-232	8.10E-01	8.4E-04	6.3E-02	1.1E-07	3.3E-07	1.5E-01	2.6E+00	1.7E-09	1.4E-06
Surf. (<0.5 ft)	10L340142/VP-12	U-234	2.23E+00	2.1E-04	0.0E+00	2.0E-10	0.0E+00	3.8E-02	0.0E+00	5.3E-09	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	U-235	8.56E-02	3.8E-04	0.0E+00	1.1E-09	0.0E+00	1.6E-02	0.0E+00	5.3E-09	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	U-238	8.61E+00	7.4E-03	0.0E+00	2.7E-08	0.0E+00	3.9E-01	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	10L340142/VP-12	TOTAL		2.6E-01	5.7E-01	1.2E-06	2.8E-06	2.1E+01	3.1E+01	4.9E-06	1.3E-05
All Depths	10L340142/VP-12	Ac-227	9.10E-03	1.5E-04	0.0E+00	3.1E-10	0.0E+00	1.2E-02	0.0E+00	2.1E-09	0.0E+00
All Depths	10L340142/VP-12	Pa-231	5.04E-02	1.4E-04	0.0E+00	3.3E-10	0.0E+00	2.6E-02	0.0E+00	6.5E-10	0.0E+00
All Depths	10L340142/VP-12	Pb-210	4.38E-01	3.7E-04	0.0E+00	3.6E-10	0.0E+00	1.3E-01	0.0E+00	1.8E-08	0.0E+00
All Depths	10L340142/VP-12	Ra-226	9.20E-01	5.8E-02	0.0E+00	2.9E-07	0.0E+00	2.3E+00	0.0E+00	1.3E-06	0.0E+00
All Depths	10L340142/VP-12	Th-230	2.96E+01	6.3E-03	5.4E-02	2.2E-08	2.6E-07	1.1E+00	3.1E+00	6.7E-08	1.2E-06
All Depths	10L340142/VP-12	Th-232	7.10E-01	7.4E-04	5.5E-02	9.5E-08	2.9E-07	1.3E-01	2.3E+00	1.5E-09	1.2E-06
All Depths	10L340142/VP-12	U-238	9.32E+00	8.0E-03	0.0E+00	2.9E-08	0.0E+00	4.2E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	10L340142/VP-12	TOTAL		7.3E-02	1.1E-01	4.4E-07	5.5E-07	4.1E+00	5.3E+00	1.6E-06	2.4E-06
Sub. (>0.5 ft)	10L340151/VP-10,11	Pb-210	7.70E-02	6.4E-05	0.0E+00	6.4E-11	0.0E+00	2.3E-02	0.0E+00	3.1E-09	0.0E+00
Sub. (>0.5 ft)	10L340151/VP-10,11	Th-230	3.84E+00	8.2E-04	7.0E-03	2.8E-09	3.3E-08	1.4E-01	4.0E-01	8.7E-09	1.5E-07
Sub. (>0.5 ft)	10L340151/VP-10,11	TOTAL		8.9E-04	7.0E-03	2.9E-09	3.3E-08	1.6E-01	4.0E-01	1.2E-08	1.5E-07
All Depths	10L340151/VP-10,11	Pb-210	7.70E-02	6.4E-05	0.0E+00	6.4E-11	0.0E+00	2.3E-02	0.0E+00	3.1E-09	0.0E+00
All Depths	10L340151/VP-10,11	Th-230	3.84E+00	8.2E-04	7.0E-03	2.8E-09	3.3E-08	1.4E-01	4.0E-01	8.7E-09	1.5E-07

Attachment 12. Radiological Doses and Risks for each Property (page 51 of 60)

Data Group	Property	Isotope	Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
All Depths	10L340151/VP-10,11	TOTAL		8.9E-04	7.0E-03	2.9E-09	3.3E-08	1.6E-01	4.0E-01	1.2E-08	1.5E-07
Sub. (>0.5 ft)	11K510035/VP-14	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
Sub. (>0.5 ft)	11K510035/VP-14	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08
Sub. (>0.5 ft)	11K510035/VP-14	TOTAL		1.2E-04	8.0E-04	3.5E-10	3.8E-09	2.5E-02	4.6E-02	2.2E-09	1.8E-08
All Depths	11K510035/VP-14	Pb-210	2.94E-02	2.5E-05	0.0E+00	2.4E-11	0.0E+00	8.6E-03	0.0E+00	1.2E-09	0.0E+00
All Depths	11K510035/VP-14	Th-230	4.40E-01	9.4E-05	8.0E-04	3.2E-10	3.8E-09	1.6E-02	4.6E-02	1.0E-09	1.8E-08
All Depths	11K510035/VP-14	TOTAL		1.2E-04	8.0E-04	3.5E-10	3.8E-09	2.5E-02	4.6E-02	2.2E-09	1.8E-08
Sub. (>0.5 ft)	11K520056/VP-15	Pb-210	3.72E-02	3.1E-05	0.0E+00	3.1E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
Sub. (>0.5 ft)	11K520056/VP-15	Th-230	1.00E+00	2.1E-04	1.8E-03	7.4E-10	8.7E-09	3.6E-02	1.0E-01	2.3E-09	4.0E-08
Sub. (>0.5 ft)	11K520056/VP-15	TOTAL		2.5E-04	1.8E-03	7.7E-10	8.7E-09	4.7E-02	1.0E-01	3.8E-09	4.0E-08
All Depths	11K520056/VP-15	Pb-210	3.72E-02	3.1E-05	0.0E+00	3.1E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
All Depths	11K520056/VP-15	Th-230	1.00E+00	2.1E-04	1.8E-03	7.4E-10	8.7E-09	3.6E-02	1.0E-01	2.3E-09	4.0E-08
All Depths	11K520056/VP-15	TOTAL		2.5E-04	1.8E-03	7.7E-10	8.7E-09	4.7E-02	1.0E-01	3.8E-09	4.0E-08
Surf. (<0.5 ft)	11K630221	Ac-227	8.10E-02	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.1E-01	0.0E+00	1.9E-08	0.0E+00
Surf. (<0.5 ft)	11K630221	Pb-210	1.69E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	5.0E-02	0.0E+00	6.8E-09	0.0E+00
Surf. (<0.5 ft)	11K630221	Th-230	1.04E+01	2.2E-03	1.9E-02	7.7E-09	9.1E-08	3.8E-01	1.1E+00	2.4E-08	4.2E-07
Surf. (<0.5 ft)	11K630221	TOTAL		3.7E-03	1.9E-02	1.1E-08	9.1E-08	5.4E-01	1.1E+00	4.9E-08	4.2E-07
All Depths	11K630221	Ac-227	8.10E-02	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.1E-01	0.0E+00	1.9E-08	0.0E+00
All Depths	11K630221	Pb-210	1.69E-01	1.4E-04	0.0E+00	1.4E-10	0.0E+00	5.0E-02	0.0E+00	6.8E-09	0.0E+00
All Depths	11K630221	Th-230	1.04E+01	2.2E-03	1.9E-02	7.7E-09	9.1E-08	3.8E-01	1.1E+00	2.4E-08	4.2E-07
All Depths	11K630221	TOTAL		3.7E-03	1.9E-02	1.1E-08	9.1E-08	5.4E-01	1.1E+00	4.9E-08	4.2E-07
Sub. (>0.5 ft)	11L520011	Pb-210	3.36E-02	2.8E-05	0.0E+00	2.8E-11	0.0E+00	9.8E-03	0.0E+00	1.3E-09	0.0E+00
Sub. (>0.5 ft)	11L520011	Ra-226	8.50E-01	5.3E-02	0.0E+00	2.7E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	11L520011	Th-230	7.40E-01	1.6E-04	1.3E-03	5.4E-10	6.4E-09	2.7E-02	7.7E-02	1.7E-09	3.0E-08
Sub. (>0.5 ft)	11L520011	Th-232	6.90E-01	7.2E-04	5.4E-02	9.2E-08	2.8E-07	1.3E-01	2.2E+00	1.5E-09	1.2E-06
Sub. (>0.5 ft)	11L520011	U-238	1.84E+01	1.6E-02	0.0E+00	5.8E-08	0.0E+00	8.4E-01	0.0E+00	3.2E-07	0.0E+00
Sub. (>0.5 ft)	11L520011	TOTAL		7.0E-02	5.5E-02	4.2E-07	2.9E-07	3.1E+00	2.3E+00	1.6E-06	1.2E-06
Surf. (<0.5 ft)	11L520011	Pb-210	4.48E-02	3.7E-05	0.0E+00	3.7E-11	0.0E+00	1.3E-02	0.0E+00	1.8E-09	0.0E+00
Surf. (<0.5 ft)	11L520011	Th-230	1.54E+00	3.3E-04	2.8E-03	1.1E-09	1.3E-08	5.6E-02	1.6E-01	3.5E-09	6.1E-08
Surf. (<0.5 ft)	11L520011	TOTAL		3.7E-04	2.8E-03	1.2E-09	1.3E-08	6.9E-02	1.6E-01	5.3E-09	6.1E-08
All Depths	11L520011	Pb-210	3.63E-02	3.0E-05	0.0E+00	3.0E-11	0.0E+00	1.1E-02	0.0E+00	1.5E-09	0.0E+00
All Depths	11L520011	Ra-226	8.50E-01	5.3E-02	0.0E+00	2.7E-07	0.0E+00	2.1E+00	0.0E+00	1.2E-06	0.0E+00
All Depths	11L520011	Th-230	9.30E-01	2.0E-04	1.7E-03	6.8E-10	8.1E-09	3.4E-02	9.6E-02	2.1E-09	3.7E-08
All Depths	11L520011	Th-232	6.90E-01	7.2E-04	5.4E-02	9.2E-08	2.8E-07	1.3E-01	2.2E+00	1.5E-09	1.2E-06
All Depths	11L520011	U-238	1.84E+01	1.6E-02	0.0E+00	5.8E-08	0.0E+00	8.4E-01	0.0E+00	3.2E-07	0.0E+00
All Depths	11L520011	TOTAL		7.0E-02	5.5E-02	4.2E-07	2.9E-07	3.1E+00	2.3E+00	1.6E-06	1.2E-06
Surf. (<0.5 ft)	CWC	Ac-227	1.73E+00	2.8E-02	0.0E+00	5.8E-08	0.0E+00	2.3E+00	0.0E+00	4.0E-07	0.0E+00
Surf. (<0.5 ft)	CWC	Pa-231	2.09E+00	5.9E-03	0.0E+00	1.4E-08	0.0E+00	1.1E+00	0.0E+00	2.7E-08	0.0E+00
Surf. (<0.5 ft)	CWC	Pb-210	4.22E+00	3.5E-03	0.0E+00	3.5E-09	0.0E+00	1.2E+00	0.0E+00	1.7E-07	0.0E+00
Surf. (<0.5 ft)	CWC	Ra-226	7.10E-01	4.5E-02	0.0E+00	2.2E-07	0.0E+00	1.7E+00	0.0E+00	1.0E-06	0.0E+00
Surf. (<0.5 ft)	CWC	Th-228	7.90E-01	4.5E-02	0.0E+00	7.4E-08	0.0E+00	1.7E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	CWC	Th-230	1.31E+00	2.8E-04	2.4E-03	9.6E-10	1.1E-08	4.8E-02	1.4E-01	3.0E-09	5.2E-08

Attachment 12. Radiological Doses and Risks for each Property (page 52 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	CWC	Th-232	8.60E-01	9.0E-04	6.7E-02	1.1E-07	3.5E-07	1.6E-01	2.8E+00	1.9E-09	1.5E-06
Surf. (<0.5 ft)	CWC	U-234	4.56E+00	4.2E-04	0.0E+00	4.2E-10	0.0E+00	7.8E-02	0.0E+00	1.1E-08	0.0E+00
Surf. (<0.5 ft)	CWC	U-235	2.02E-01	8.9E-04	0.0E+00	2.6E-09	0.0E+00	3.7E-02	0.0E+00	1.2E-08	0.0E+00
Surf. (<0.5 ft)	CWC	U-238	4.51E+00	3.9E-03	0.0E+00	1.4E-08	0.0E+00	2.1E-01	0.0E+00	7.8E-08	0.0E+00
Surf. (<0.5 ft)	CWC	TOTAL		1.3E-01	6.9E-02	5.1E-07	3.6E-07	8.6E+00	2.9E+00	2.8E-06	1.6E-06
All Depths	CWC	Ac-227	1.73E+00	2.8E-02	0.0E+00	5.8E-08	0.0E+00	2.3E+00	0.0E+00	4.0E-07	0.0E+00
All Depths	CWC	Pa-231	2.09E+00	5.9E-03	0.0E+00	1.4E-08	0.0E+00	1.1E+00	0.0E+00	2.7E-08	0.0E+00
All Depths	CWC	Pb-210	4.22E+00	3.5E-03	0.0E+00	3.5E-09	0.0E+00	1.2E+00	0.0E+00	1.7E-07	0.0E+00
All Depths	CWC	Ra-226	7.10E-01	4.5E-02	0.0E+00	2.2E-07	0.0E+00	1.7E+00	0.0E+00	1.0E-06	0.0E+00
All Depths	CWC	Th-228	7.90E-01	4.5E-02	0.0E+00	7.4E-08	0.0E+00	1.7E+00	0.0E+00	1.1E-06	0.0E+00
All Depths	CWC	Th-230	1.31E+00	2.8E-04	2.4E-03	9.6E-10	1.1E-08	4.8E-02	1.4E-01	3.0E-09	5.2E-08
All Depths	CWC	Th-232	8.60E-01	9.0E-04	6.7E-02	1.1E-07	3.5E-07	1.6E-01	2.8E+00	1.9E-09	1.5E-06
All Depths	CWC	U-234	4.56E+00	4.2E-04	0.0E+00	4.2E-10	0.0E+00	7.8E-02	0.0E+00	1.1E-08	0.0E+00
All Depths	CWC	U-235	2.02E-01	8.9E-04	0.0E+00	2.6E-09	0.0E+00	3.7E-02	0.0E+00	1.2E-08	0.0E+00
All Depths	CWC	U-238	4.51E+00	3.9E-03	0.0E+00	1.4E-08	0.0E+00	2.1E-01	0.0E+00	7.8E-08	0.0E+00
All Depths	CWC	TOTAL		1.3E-01	6.9E-02	5.1E-07	3.6E-07	8.6E+00	2.9E+00	2.8E-06	1.6E-06
All Depths	Futura	Ac-227	5.04E+01	8.1E-01	0.0E+00	1.7E-06	0.0E+00	6.7E+01	0.0E+00	1.2E-05	0.0E+00
All Depths	Futura	Pa-231	5.96E+01	1.7E-01	0.0E+00	3.9E-07	0.0E+00	3.1E+01	0.0E+00	7.7E-07	0.0E+00
All Depths	Futura	Pb-210	1.10E+02	9.2E-02	0.0E+00	9.2E-08	0.0E+00	3.2E+01	0.0E+00	4.4E-06	0.0E+00
All Depths	Futura	Ra-226	4.50E+01	2.8E+00	0.0E+00	1.4E-05	0.0E+00	1.1E+02	0.0E+00	6.5E-05	0.0E+00
All Depths	Futura	Th-228	1.15E+00	6.5E-02	0.0E+00	1.1E-07	0.0E+00	2.5E+00	0.0E+00	1.5E-06	0.0E+00
All Depths	Futura	Th-230	1.00E+02	2.1E-02	1.8E-01	7.4E-08	8.7E-07	3.7E+00	1.0E+01	2.3E-07	4.0E-06
All Depths	Futura	Th-232	1.22E+00	1.3E-03	9.5E-02	1.6E-07	4.9E-07	2.2E-01	3.9E+00	2.6E-09	2.1E-06
All Depths	Futura	U-234	5.31E+01	4.9E-03	0.0E+00	4.9E-09	0.0E+00	9.1E-01	0.0E+00	1.3E-07	0.0E+00
All Depths	Futura	U-235	2.43E+00	1.1E-02	0.0E+00	3.1E-08	0.0E+00	4.4E-01	0.0E+00	1.5E-07	0.0E+00
All Depths	Futura	U-238	5.30E+01	4.5E-02	0.0E+00	1.7E-07	0.0E+00	2.4E+00	0.0E+00	9.2E-07	0.0E+00
All Depths	Futura	TOTAL		4.0E+00	2.8E-01	1.7E-05	1.4E-06	2.5E+02	1.4E+01	8.5E-05	6.1E-06
All Depths	HISS	Ac-227	1.47E+00	2.4E-02	0.0E+00	5.0E-08	0.0E+00	2.0E+00	0.0E+00	3.4E-07	0.0E+00
All Depths	HISS	Pa-231	1.48E+00	4.2E-03	0.0E+00	9.7E-09	0.0E+00	7.7E-01	0.0E+00	1.9E-08	0.0E+00
All Depths	HISS	Pb-210	2.30E+01	1.9E-02	0.0E+00	1.9E-08	0.0E+00	6.7E+00	0.0E+00	9.3E-07	0.0E+00
All Depths	HISS	Ra-226	8.55E+00	5.4E-01	0.0E+00	2.7E-06	0.0E+00	2.1E+01	0.0E+00	1.2E-05	0.0E+00
All Depths	HISS	Ra-228	9.00E-03	3.0E-04	0.0E+00	2.1E-09	0.0E+00	1.2E-02	0.0E+00	6.5E-09	0.0E+00
All Depths	HISS	Th-230	5.02E+01	1.1E-02	9.2E-02	3.7E-08	4.4E-07	1.8E+00	5.2E+00	1.1E-07	2.0E-06
All Depths	HISS	Th-232	6.80E-01	7.1E-04	5.3E-02	9.1E-08	2.7E-07	1.2E-01	2.2E+00	1.5E-09	1.2E-06
All Depths	HISS	U-234	1.60E+01	1.5E-03	0.0E+00	1.5E-09	0.0E+00	2.7E-01	0.0E+00	3.8E-08	0.0E+00
All Depths	HISS	U-235	1.53E+00	6.8E-03	0.0E+00	1.9E-08	0.0E+00	2.8E-01	0.0E+00	9.4E-08	0.0E+00
All Depths	HISS	U-238	1.59E+01	1.4E-02	0.0E+00	5.0E-08	0.0E+00	7.3E-01	0.0E+00	2.8E-07	0.0E+00
All Depths	HISS	TOTAL		6.2E-01	1.4E-01	3.0E-06	7.1E-07	3.4E+01	7.4E+00	1.4E-05	3.2E-06
Sub. (>0.5 ft)	IA-1	Ac-227	5.76E-01	9.3E-03	0.0E+00	1.9E-08	0.0E+00	7.6E-01	0.0E+00	1.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-1	Pa-231	1.13E+00	3.2E-03	0.0E+00	7.4E-09	0.0E+00	5.9E-01	0.0E+00	1.5E-08	0.0E+00
Sub. (>0.5 ft)	IA-1	Pb-210	3.60E+02	3.0E-01	0.0E+00	3.0E-07	0.0E+00	1.1E+02	0.0E+00	1.4E-05	0.0E+00
Sub. (>0.5 ft)	IA-1	Ra-226	2.11E+02	1.3E+01	0.0E+00	6.6E-05	0.0E+00	5.2E+02	0.0E+00	3.1E-04	0.0E+00
Sub. (>0.5 ft)	IA-1	Th-228	2.40E-01	1.4E-02	0.0E+00	2.3E-08	0.0E+00	5.3E-01	0.0E+00	3.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-1	Th-230	2.60E+01	5.6E-03	4.7E-02	1.9E-08	2.3E-07	9.5E-01	2.7E+00	5.9E-08	1.0E-06
Sub. (>0.5 ft)	IA-1	Th-232	5.37E+00	5.6E-03	4.2E-01	7.2E-07	2.2E-06	9.7E-01	1.7E+01	1.2E-08	9.4E-06
Sub. (>0.5 ft)	IA-1	U-234	1.09E+02	1.0E-02	0.0E+00	1.0E-08	0.0E+00	1.9E+00	0.0E+00	2.6E-07	0.0E+00
Sub. (>0.5 ft)	IA-1	U-235	9.32E-02	4.1E-04	0.0E+00	1.2E-09	0.0E+00	1.7E-02	0.0E+00	5.8E-09	0.0E+00
Sub. (>0.5 ft)	IA-1	U-238	1.09E+02	9.3E-02	0.0E+00	3.4E-07	0.0E+00	5.0E+00	0.0E+00	1.9E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 53 of 60)

			Exposure Point Conc. (pCi/g)	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope		Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	IA-1	TOTAL		1.4E+01	4.7E-01	6.8E-05	2.4E-06	6.3E+02	2.0E+01	3.2E-04	1.0E-05
Surf. (<5 ft)	IA-1	Ac-227	5.38E+02	8.7E+00	0.0E+00	1.8E-05	0.0E+00	7.1E+02	0.0E+00	1.2E-04	0.0E+00
Surf. (<5 ft)	IA-1	Pa-231	5.85E+02	1.6E+00	0.0E+00	3.8E-06	0.0E+00	3.0E+02	0.0E+00	7.6E-06	0.0E+00
Surf. (<5 ft)	IA-1	Pb-210	9.95E+02	8.3E-01	0.0E+00	8.3E-07	0.0E+00	2.9E+02	0.0E+00	4.0E-05	0.0E+00
Surf. (<5 ft)	IA-1	Ra-226	5.84E+02	3.7E+01	0.0E+00	1.8E-04	0.0E+00	1.4E+03	0.0E+00	8.5E-04	0.0E+00
Surf. (<5 ft)	IA-1	Ra-228	3.36E+00	1.1E-01	0.0E+00	7.8E-07	0.0E+00	4.5E+00	0.0E+00	2.4E-06	0.0E+00
Surf. (<5 ft)	IA-1	Th-228	1.20E+01	6.8E-01	0.0E+00	1.1E-06	0.0E+00	2.7E+01	0.0E+00	1.6E-05	0.0E+00
Surf. (<5 ft)	IA-1	Th-230	9.26E+01	2.0E-02	1.7E-01	6.8E-08	8.1E-07	3.4E+00	9.6E+00	2.1E-07	3.7E-06
Surf. (<5 ft)	IA-1	Th-232	1.44E+01	1.5E-02	1.1E+00	1.9E-06	5.8E-06	2.6E+00	4.6E+01	3.1E-08	2.5E-05
Surf. (<5 ft)	IA-1	U-234	2.86E+02	2.7E-02	0.0E+00	2.6E-08	0.0E+00	4.9E+00	0.0E+00	6.8E-07	0.0E+00
Surf. (<5 ft)	IA-1	U-235	1.31E+01	5.8E-02	0.0E+00	1.7E-07	0.0E+00	2.4E+00	0.0E+00	8.1E-07	0.0E+00
Surf. (<5 ft)	IA-1	U-238	2.86E+02	2.4E-01	0.0E+00	9.0E-07	0.0E+00	1.3E+01	0.0E+00	4.9E-06	0.0E+00
Surf. (<5 ft)	IA-1	TOTAL		4.9E+01	1.3E+00	2.1E-04	6.6E-06	2.8E+03	5.6E+01	1.0E-03	2.9E-05
Sub. (>0.5 ft)	IA-10	Ac-227	3.80E+00	6.1E-02	0.0E+00	1.3E-07	0.0E+00	5.0E+00	0.0E+00	8.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	Pa-231	4.16E+00	1.2E-02	0.0E+00	2.7E-08	0.0E+00	2.2E+00	0.0E+00	5.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	Pb-210	7.41E+00	6.2E-03	0.0E+00	6.2E-09	0.0E+00	2.2E+00	0.0E+00	3.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	Ra-226	3.31E+00	2.1E-01	0.0E+00	1.0E-06	0.0E+00	8.1E+00	0.0E+00	4.8E-06	0.0E+00
Sub. (>0.5 ft)	IA-10	Th-228	5.54E-01	3.1E-02	0.0E+00	5.2E-08	0.0E+00	1.2E+00	0.0E+00	7.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	Th-230	6.17E+00	1.3E-03	1.1E-02	4.5E-09	5.4E-08	2.3E-01	6.4E-01	1.4E-08	2.5E-07
Sub. (>0.5 ft)	IA-10	Th-232	9.30E-01	9.7E-04	7.2E-02	1.2E-07	3.8E-07	1.7E-01	3.0E+00	2.0E-09	1.6E-06
Sub. (>0.5 ft)	IA-10	U-234	9.77E+00	9.1E-04	0.0E+00	9.0E-10	0.0E+00	1.7E-01	0.0E+00	2.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	U-235	4.41E-01	1.9E-03	0.0E+00	5.6E-09	0.0E+00	8.0E-02	0.0E+00	2.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-10	U-238	9.72E+00	8.3E-03	0.0E+00	3.0E-08	0.0E+00	4.4E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-10	TOTAL		3.3E-01	8.4E-02	1.4E-06	4.3E-07	2.0E+01	3.6E+00	7.0E-06	1.9E-06
Surf. (<0.5 ft)	IA-10	Ac-227	8.00E-03	1.3E-04	0.0E+00	2.7E-10	0.0E+00	1.1E-02	0.0E+00	1.9E-09	0.0E+00
Surf. (<0.5 ft)	IA-10	Pa-231	1.10E-01	3.1E-04	0.0E+00	7.2E-10	0.0E+00	5.7E-02	0.0E+00	1.4E-09	0.0E+00
Surf. (<0.5 ft)	IA-10	Pb-210	2.19E+00	1.8E-03	0.0E+00	1.8E-09	0.0E+00	6.4E-01	0.0E+00	8.8E-08	0.0E+00
Surf. (<0.5 ft)	IA-10	Ra-226	2.40E-01	1.5E-02	0.0E+00	7.5E-08	0.0E+00	5.9E-01	0.0E+00	3.5E-07	0.0E+00
Surf. (<0.5 ft)	IA-10	Th-228	1.05E+00	6.0E-02	0.0E+00	9.9E-08	0.0E+00	2.3E+00	0.0E+00	1.4E-06	0.0E+00
Surf. (<0.5 ft)	IA-10	Th-230	2.78E+00	5.9E-04	5.1E-03	2.0E-09	2.4E-08	1.0E-01	2.9E-01	6.3E-09	1.1E-07
Surf. (<0.5 ft)	IA-10	Th-232	4.10E-01	4.3E-04	3.2E-02	5.5E-08	1.7E-07	7.4E-02	1.3E+00	8.8E-10	7.2E-07
Surf. (<0.5 ft)	IA-10	U-234	4.32E+00	4.0E-04	0.0E+00	4.0E-10	0.0E+00	7.4E-02	0.0E+00	1.0E-08	0.0E+00
Surf. (<0.5 ft)	IA-10	U-235	1.18E-01	5.2E-04	0.0E+00	1.5E-09	0.0E+00	2.2E-02	0.0E+00	7.3E-09	0.0E+00
Surf. (<0.5 ft)	IA-10	U-238	4.27E+00	3.6E-03	0.0E+00	1.3E-08	0.0E+00	1.9E-01	0.0E+00	7.4E-08	0.0E+00
Surf. (<0.5 ft)	IA-10	TOTAL		8.2E-02	3.7E-02	2.5E-07	1.9E-07	4.1E+00	1.6E+00	1.9E-06	8.3E-07
Surf. (<5 ft)	IA-11	Th-230	2.40E-01	5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
Surf. (<5 ft)	IA-11	TOTAL		5.1E-05	4.4E-04	1.8E-10	2.1E-09	8.8E-03	2.5E-02	5.5E-10	9.6E-09
Sub. (>0.5 ft)	IA-12	Ac-227	2.02E+00	3.3E-02	0.0E+00	6.8E-08	0.0E+00	2.7E+00	0.0E+00	4.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Pa-231	2.12E+00	6.0E-03	0.0E+00	1.4E-08	0.0E+00	1.1E+00	0.0E+00	2.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-12	Pb-210	4.35E+00	3.6E-03	0.0E+00	3.6E-09	0.0E+00	1.3E+00	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Ra-226	1.51E+00	9.5E-02	0.0E+00	4.7E-07	0.0E+00	3.7E+00	0.0E+00	2.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-12	Ra-228	2.33E-01	7.9E-03	0.0E+00	5.4E-08	0.0E+00	3.1E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Th-228	5.40E-01	3.1E-02	0.0E+00	5.1E-08	0.0E+00	1.2E+00	0.0E+00	7.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	Th-230	7.32E+01	1.6E-02	1.3E-01	5.4E-08	6.4E-07	2.7E+00	7.6E+00	1.7E-07	2.9E-06
Sub. (>0.5 ft)	IA-12	Th-232	9.00E-01	9.4E-04	7.0E-02	1.2E-07	3.6E-07	1.6E-01	2.9E+00	1.9E-09	1.6E-06
Sub. (>0.5 ft)	IA-12	U-234	8.34E+00	7.7E-04	0.0E+00	7.6E-10	0.0E+00	1.4E-01	0.0E+00	2.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-12	U-235	1.69E+00	7.5E-03	0.0E+00	2.1E-08	0.0E+00	3.1E-01	0.0E+00	1.0E-07	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 54 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Sub. (>0.5 ft)	IA-12	U-238	8.29E+00	7.1E-03	0.0E+00	2.6E-08	0.0E+00	3.8E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-12	TOTAL		2.1E-01	2.0E-01	8.9E-07	1.0E-06	1.4E+01	1.0E+01	4.2E-06	4.5E-06
Surf. (<0.5 ft)	IA-12	Ac-227	3.67E+00	5.9E-02	0.0E+00	1.2E-07	0.0E+00	4.9E+00	0.0E+00	8.5E-07	0.0E+00
Surf. (<0.5 ft)	IA-12	Pa-231	4.02E+00	1.1E-02	0.0E+00	2.6E-08	0.0E+00	2.1E+00	0.0E+00	5.2E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	Pb-210	7.17E+00	6.0E-03	0.0E+00	6.0E-09	0.0E+00	2.1E+00	0.0E+00	2.9E-07	0.0E+00
Surf. (<0.5 ft)	IA-12	Ra-226	3.17E+00	2.0E-01	0.0E+00	9.9E-07	0.0E+00	7.8E+00	0.0E+00	4.6E-06	0.0E+00
Surf. (<0.5 ft)	IA-12	Th-228	2.74E-01	1.6E-02	0.0E+00	2.6E-08	0.0E+00	6.1E-01	0.0E+00	3.6E-07	0.0E+00
Surf. (<0.5 ft)	IA-12	Th-230	3.17E+02	6.8E-02	5.8E-01	2.3E-07	2.8E-06	1.2E+01	3.3E+01	7.2E-07	1.3E-05
Surf. (<0.5 ft)	IA-12	Th-232	6.00E-01	6.3E-04	4.7E-02	8.0E-08	2.4E-07	1.1E-01	1.9E+00	1.3E-09	1.0E-06
Surf. (<0.5 ft)	IA-12	U-234	1.12E+01	1.0E-03	0.0E+00	1.0E-09	0.0E+00	1.9E-01	0.0E+00	2.7E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	U-235	5.06E-01	2.2E-03	0.0E+00	6.4E-09	0.0E+00	9.2E-02	0.0E+00	3.1E-08	0.0E+00
Surf. (<0.5 ft)	IA-12	U-238	1.11E+01	9.5E-03	0.0E+00	3.5E-08	0.0E+00	5.1E-01	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	IA-12	TOTAL		3.7E-01	6.2E-01	1.5E-06	3.0E-06	3.0E+01	3.5E+01	7.1E-06	1.4E-05
Sub. (>0.5 ft)	IA-13	Ac-227	1.65E+00	2.7E-02	0.0E+00	5.6E-08	0.0E+00	2.2E+00	0.0E+00	3.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	Pa-231	1.82E+00	5.1E-03	0.0E+00	1.2E-08	0.0E+00	9.5E-01	0.0E+00	2.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	Pb-210	3.43E+00	2.9E-03	0.0E+00	2.9E-09	0.0E+00	1.0E+00	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	Ra-226	9.70E-01	6.1E-02	0.0E+00	3.0E-07	0.0E+00	2.4E+00	0.0E+00	1.4E-06	0.0E+00
Sub. (>0.5 ft)	IA-13	Th-228	6.05E-01	3.4E-02	0.0E+00	5.7E-08	0.0E+00	1.3E+00	0.0E+00	8.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	Th-230	1.58E+00	3.4E-04	2.9E-03	1.2E-09	1.4E-08	5.8E-02	1.6E-01	3.6E-09	6.3E-08
Sub. (>0.5 ft)	IA-13	Th-232	9.90E-01	1.0E-03	7.7E-02	1.3E-07	4.0E-07	1.8E-01	3.2E+00	2.1E-09	1.7E-06
Sub. (>0.5 ft)	IA-13	U-234	9.67E+00	9.0E-04	0.0E+00	8.9E-10	0.0E+00	1.7E-01	0.0E+00	2.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	U-235	4.37E-01	1.9E-03	0.0E+00	5.5E-09	0.0E+00	8.0E-02	0.0E+00	2.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-13	U-238	9.62E+00	8.2E-03	0.0E+00	3.0E-08	0.0E+00	4.4E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-13	TOTAL		1.4E-01	8.0E-02	6.0E-07	4.1E-07	8.8E+00	3.3E+00	3.0E-06	1.8E-06
Surf. (<0.5 ft)	IA-13	Ac-227	1.73E-01	2.8E-03	0.0E+00	5.8E-09	0.0E+00	2.3E-01	0.0E+00	4.0E-08	0.0E+00
Surf. (<0.5 ft)	IA-13	Pa-231	3.19E-01	9.0E-04	0.0E+00	2.1E-09	0.0E+00	1.7E-01	0.0E+00	4.1E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	Pb-210	2.70E+00	2.3E-03	0.0E+00	2.2E-09	0.0E+00	7.9E-01	0.0E+00	1.1E-07	0.0E+00
Surf. (<0.5 ft)	IA-13	Ra-226	5.40E-01	3.4E-02	0.0E+00	1.7E-07	0.0E+00	1.3E+00	0.0E+00	7.8E-07	0.0E+00
Surf. (<0.5 ft)	IA-13	Th-228	2.00E-02	1.1E-03	0.0E+00	1.9E-09	0.0E+00	4.4E-02	0.0E+00	2.7E-08	0.0E+00
Surf. (<0.5 ft)	IA-13	Th-230	1.37E+01	2.9E-03	2.5E-02	1.0E-08	1.2E-07	5.0E-01	1.4E+00	3.1E-08	5.5E-07
Surf. (<0.5 ft)	IA-13	Th-232	4.30E-01	4.5E-04	3.3E-02	5.7E-08	1.7E-07	7.8E-02	1.4E+00	9.3E-10	7.5E-07
Surf. (<0.5 ft)	IA-13	U-234	2.90E+00	2.7E-04	0.0E+00	2.7E-10	0.0E+00	5.0E-02	0.0E+00	6.9E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	U-235	1.33E-01	5.9E-04	0.0E+00	1.7E-09	0.0E+00	2.4E-02	0.0E+00	8.2E-09	0.0E+00
Surf. (<0.5 ft)	IA-13	U-238	2.85E+00	2.4E-03	0.0E+00	8.9E-09	0.0E+00	1.3E-01	0.0E+00	4.9E-08	0.0E+00
Surf. (<0.5 ft)	IA-13	TOTAL		4.8E-02	5.8E-02	2.6E-07	2.9E-07	3.3E+00	2.8E+00	1.1E-06	1.3E-06
Sub. (>0.5 ft)	IA-2	Ac-227	6.93E+00	1.1E-01	0.0E+00	2.3E-07	0.0E+00	9.2E+00	0.0E+00	1.6E-06	0.0E+00
Sub. (>0.5 ft)	IA-2	Pa-231	9.09E+00	2.6E-02	0.0E+00	6.0E-08	0.0E+00	4.7E+00	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	Pb-210	4.83E+01	4.0E-02	0.0E+00	4.0E-08	0.0E+00	1.4E+01	0.0E+00	1.9E-06	0.0E+00
Sub. (>0.5 ft)	IA-2	Ra-226	2.74E+01	1.7E+00	0.0E+00	8.6E-06	0.0E+00	6.7E+01	0.0E+00	4.0E-05	0.0E+00
Sub. (>0.5 ft)	IA-2	Ra-228	1.63E-01	5.5E-03	0.0E+00	3.8E-08	0.0E+00	2.2E-01	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	Th-228	4.00E-01	2.3E-02	0.0E+00	3.8E-08	0.0E+00	8.9E-01	0.0E+00	5.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	Th-230	4.54E+02	9.7E-02	8.3E-01	3.3E-07	4.0E-06	1.7E+01	4.7E+01	1.0E-06	1.8E-05
Sub. (>0.5 ft)	IA-2	Th-232	1.24E+00	1.3E-03	9.6E-02	1.7E-07	5.0E-07	2.2E-01	4.0E+00	2.7E-09	2.2E-06
Sub. (>0.5 ft)	IA-2	U-234	4.88E+01	4.5E-03	0.0E+00	4.5E-09	0.0E+00	8.4E-01	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	U-235	2.22E+00	9.8E-03	0.0E+00	2.8E-08	0.0E+00	4.0E-01	0.0E+00	1.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	U-238	4.87E+01	4.2E-02	0.0E+00	1.5E-07	0.0E+00	2.2E+00	0.0E+00	8.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-2	TOTAL		2.1E+00	9.2E-01	9.7E-06	4.5E-06	1.2E+02	5.1E+01	4.6E-05	2.0E-05

Attachment 12. Radiological Doses and Risks for each Property (page 55 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	IA-2	Ac-227	3.07E+01	4.9E-01	0.0E+00	1.0E-06	0.0E+00	4.1E+01	0.0E+00	7.1E-06	0.0E+00
Surf. (<5 ft)	IA-2	Pa-231	4.12E+01	1.2E-01	0.0E+00	2.7E-07	0.0E+00	2.1E+01	0.0E+00	5.3E-07	0.0E+00
Surf. (<5 ft)	IA-2	Pb-210	1.16E+02	9.7E-02	0.0E+00	9.6E-08	0.0E+00	3.4E+01	0.0E+00	4.7E-06	0.0E+00
Surf. (<5 ft)	IA-2	Ra-226	6.72E+01	4.2E+00	0.0E+00	2.1E-05	0.0E+00	1.6E+02	0.0E+00	9.7E-05	0.0E+00
Surf. (<5 ft)	IA-2	Ra-228	7.63E-01	2.6E-02	0.0E+00	1.8E-07	0.0E+00	1.0E+00	0.0E+00	5.5E-07	0.0E+00
Surf. (<5 ft)	IA-2	Th-228	7.40E-01	4.2E-02	0.0E+00	7.0E-08	0.0E+00	1.6E+00	0.0E+00	9.8E-07	0.0E+00
Surf. (<5 ft)	IA-2	Th-230	1.38E+03	2.9E-01	2.5E+00	1.0E-06	1.2E-05	5.0E+01	1.4E+02	3.1E-06	5.5E-05
Surf. (<5 ft)	IA-2	Th-232	2.04E+00	2.1E-03	1.6E-01	2.7E-07	8.2E-07	3.7E-01	6.5E+00	4.4E-09	3.6E-06
Surf. (<5 ft)	IA-2	U-234	9.70E+01	9.0E-03	0.0E+00	8.9E-09	0.0E+00	1.7E+00	0.0E+00	2.3E-07	0.0E+00
Surf. (<5 ft)	IA-2	U-235	9.62E+00	4.2E-02	0.0E+00	1.2E-07	0.0E+00	1.8E+00	0.0E+00	5.9E-07	0.0E+00
Surf. (<5 ft)	IA-2	U-238	9.69E+01	8.3E-02	0.0E+00	3.0E-07	0.0E+00	4.4E+00	0.0E+00	1.7E-06	0.0E+00
Surf. (<5 ft)	IA-2	TOTAL		5.4E+00	2.7E+00	2.4E-05	1.3E-05	3.2E+02	1.5E+02	1.2E-04	5.9E-05
Sub. (>0.5 ft)	IA-3	Ac-227	6.77E+00	1.1E-01	0.0E+00	2.3E-07	0.0E+00	9.0E+00	0.0E+00	1.6E-06	0.0E+00
Sub. (>0.5 ft)	IA-3	Pa-231	4.06E+00	1.1E-02	0.0E+00	2.7E-08	0.0E+00	2.1E+00	0.0E+00	5.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	Pb-210	1.97E+02	1.6E-01	0.0E+00	1.6E-07	0.0E+00	5.8E+01	0.0E+00	7.9E-06	0.0E+00
Sub. (>0.5 ft)	IA-3	Ra-226	1.15E+02	7.2E+00	0.0E+00	3.6E-05	0.0E+00	2.8E+02	0.0E+00	1.7E-04	0.0E+00
Sub. (>0.5 ft)	IA-3	Ra-228	3.30E-02	1.1E-03	0.0E+00	7.6E-09	0.0E+00	4.4E-02	0.0E+00	2.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	Th-228	6.00E-02	3.4E-03	0.0E+00	5.6E-09	0.0E+00	1.3E-01	0.0E+00	8.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-3	Th-230	3.45E+02	7.4E-02	6.3E-01	2.5E-07	3.0E-06	1.3E+01	3.6E+01	7.9E-07	1.4E-05
Sub. (>0.5 ft)	IA-3	Th-232	1.63E+00	1.7E-03	1.3E-01	2.2E-07	6.6E-07	3.0E-01	5.2E+00	3.5E-09	2.8E-06
Sub. (>0.5 ft)	IA-3	U-234	7.10E+01	6.6E-03	0.0E+00	6.5E-09	0.0E+00	1.2E+00	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-3	U-235	1.64E+00	7.2E-03	0.0E+00	2.1E-08	0.0E+00	3.0E-01	0.0E+00	1.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-3	U-238	7.09E+01	6.1E-02	0.0E+00	2.2E-07	0.0E+00	3.2E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-3	TOTAL		7.6E+00	7.6E-01	3.7E-05	3.7E-06	3.7E+02	4.1E+01	1.8E-04	1.7E-05
Surf. (<5 ft)	IA-3	Ac-227	1.05E+01	1.7E-01	0.0E+00	3.5E-07	0.0E+00	1.4E+01	0.0E+00	2.4E-06	0.0E+00
Surf. (<5 ft)	IA-3	Pa-231	7.67E+00	2.2E-02	0.0E+00	5.0E-08	0.0E+00	4.0E+00	0.0E+00	9.9E-08	0.0E+00
Surf. (<5 ft)	IA-3	Pb-210	2.70E+01	2.3E-02	0.0E+00	2.2E-08	0.0E+00	7.9E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<5 ft)	IA-3	Ra-226	1.49E+01	9.3E-01	0.0E+00	4.7E-06	0.0E+00	3.6E+01	0.0E+00	2.2E-05	0.0E+00
Surf. (<5 ft)	IA-3	Ra-228	1.23E-01	4.1E-03	0.0E+00	2.8E-08	0.0E+00	1.7E-01	0.0E+00	8.9E-08	0.0E+00
Surf. (<5 ft)	IA-3	Th-228	5.00E-02	2.8E-03	0.0E+00	4.7E-09	0.0E+00	1.1E-01	0.0E+00	6.7E-08	0.0E+00
Surf. (<5 ft)	IA-3	Th-230	4.80E+02	1.0E-01	8.8E-01	3.5E-07	4.2E-06	1.8E+01	5.0E+01	1.1E-06	1.9E-05
Surf. (<5 ft)	IA-3	Th-232	1.16E+00	1.2E-03	9.0E-02	1.5E-07	4.7E-07	2.1E-01	3.7E+00	2.5E-09	2.0E-06
Surf. (<5 ft)	IA-3	U-234	3.03E+01	2.8E-03	0.0E+00	2.8E-09	0.0E+00	5.2E-01	0.0E+00	7.2E-08	0.0E+00
Surf. (<5 ft)	IA-3	U-235	2.55E+00	1.1E-02	0.0E+00	3.2E-08	0.0E+00	4.6E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<5 ft)	IA-3	U-238	3.02E+01	2.6E-02	0.0E+00	9.5E-08	0.0E+00	1.4E+00	0.0E+00	5.2E-07	0.0E+00
Surf. (<5 ft)	IA-3	TOTAL		1.3E+00	9.7E-01	5.8E-06	4.7E-06	8.3E+01	5.4E+01	2.7E-05	2.1E-05
Sub. (>0.5 ft)	IA-4	Ac-227	1.26E+00	2.0E-02	0.0E+00	4.3E-08	0.0E+00	1.7E+00	0.0E+00	2.9E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	Pa-231	4.33E-01	1.2E-03	0.0E+00	2.8E-09	0.0E+00	2.3E-01	0.0E+00	5.6E-09	0.0E+00
Sub. (>0.5 ft)	IA-4	Pb-210	2.01E+02	1.7E-01	0.0E+00	1.7E-07	0.0E+00	5.9E+01	0.0E+00	8.1E-06	0.0E+00
Sub. (>0.5 ft)	IA-4	Ra-226	1.17E+02	7.3E+00	0.0E+00	3.7E-05	0.0E+00	2.9E+02	0.0E+00	1.7E-04	0.0E+00
Sub. (>0.5 ft)	IA-4	Th-228	1.80E-01	1.0E-02	0.0E+00	1.7E-08	0.0E+00	4.0E-01	0.0E+00	2.4E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	Th-230	1.80E+02	3.9E-02	3.3E-01	1.3E-07	1.6E-06	6.6E+00	1.9E+01	4.1E-07	7.2E-06
Sub. (>0.5 ft)	IA-4	Th-232	2.58E+00	2.7E-03	2.0E-01	3.4E-07	1.0E-06	4.7E-01	8.3E+00	5.6E-09	4.5E-06
Sub. (>0.5 ft)	IA-4	U-234	8.50E+01	7.9E-03	0.0E+00	7.8E-09	0.0E+00	1.5E+00	0.0E+00	2.0E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	U-235	5.85E+00	2.6E-02	0.0E+00	7.4E-08	0.0E+00	1.1E+00	0.0E+00	3.6E-07	0.0E+00
Sub. (>0.5 ft)	IA-4	U-238	8.49E+01	7.3E-02	0.0E+00	2.7E-07	0.0E+00	3.9E+00	0.0E+00	1.5E-06	0.0E+00
Sub. (>0.5 ft)	IA-4	TOTAL		7.7E+00	5.3E-01	3.8E-05	2.6E-06	3.6E+02	2.7E+01	1.8E-04	1.2E-05
Surf. (<5 ft)	IA-4	Ac-227	4.55E+00	7.3E-02	0.0E+00	1.5E-07	0.0E+00	6.0E+00	0.0E+00	1.1E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 56 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	IA-4	Pa-231	3.10E+00	8.7E-03	0.0E+00	2.0E-08	0.0E+00	1.6E+00	0.0E+00	4.0E-08	0.0E+00
Surf. (<5 ft)	IA-4	Pb-210	4.54E+02	3.8E-01	0.0E+00	3.8E-07	0.0E+00	1.3E+02	0.0E+00	1.8E-05	0.0E+00
Surf. (<5 ft)	IA-4	Ra-226	2.66E+02	1.7E+01	0.0E+00	8.3E-05	0.0E+00	6.5E+02	0.0E+00	3.9E-04	0.0E+00
Surf. (<5 ft)	IA-4	Ra-228	1.53E-01	5.2E-03	0.0E+00	3.5E-08	0.0E+00	2.1E-01	0.0E+00	1.1E-07	0.0E+00
Surf. (<5 ft)	IA-4	Th-228	6.80E-01	3.9E-02	0.0E+00	6.4E-08	0.0E+00	1.5E+00	0.0E+00	9.1E-07	0.0E+00
Surf. (<5 ft)	IA-4	Th-230	2.44E+03	5.2E-01	4.4E+00	1.8E-06	2.1E-05	8.9E+01	2.5E+02	5.5E-06	9.7E-05
Surf. (<5 ft)	IA-4	Th-232	2.89E+00	3.0E-03	2.2E-01	3.9E-07	1.2E-06	5.2E-01	9.3E+00	6.2E-09	5.0E-06
Surf. (<5 ft)	IA-4	U-234	7.13E+01	6.6E-03	0.0E+00	6.5E-09	0.0E+00	1.2E+00	0.0E+00	1.7E-07	0.0E+00
Surf. (<5 ft)	IA-4	U-235	3.00E+00	1.3E-02	0.0E+00	3.8E-08	0.0E+00	5.5E-01	0.0E+00	1.9E-07	0.0E+00
Surf. (<5 ft)	IA-4	U-238	7.12E+01	6.1E-02	0.0E+00	2.2E-07	0.0E+00	3.2E+00	0.0E+00	1.2E-06	0.0E+00
Surf. (<5 ft)	IA-4	TOTAL		1.8E+01	4.7E+00	8.7E-05	2.2E-05	8.9E+02	2.6E+02	4.1E-04	1.0E-04
Sub. (>0.5 ft)	IA-5	Ac-227	7.10E+00	1.1E-01	0.0E+00	2.4E-07	0.0E+00	9.4E+00	0.0E+00	1.6E-06	0.0E+00
Sub. (>0.5 ft)	IA-5	Pa-231	8.29E+00	2.3E-02	0.0E+00	5.4E-08	0.0E+00	4.3E+00	0.0E+00	1.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	Pb-210	3.28E+01	2.7E-02	0.0E+00	2.7E-08	0.0E+00	9.6E+00	0.0E+00	1.3E-06	0.0E+00
Sub. (>0.5 ft)	IA-5	Ra-226	1.83E+01	1.1E+00	0.0E+00	5.7E-06	0.0E+00	4.5E+01	0.0E+00	2.6E-05	0.0E+00
Sub. (>0.5 ft)	IA-5	Ra-228	6.00E-03	2.0E-04	0.0E+00	1.4E-09	0.0E+00	8.1E-03	0.0E+00	4.3E-09	0.0E+00
Sub. (>0.5 ft)	IA-5	Th-228	1.00E-01	5.7E-03	0.0E+00	9.4E-09	0.0E+00	2.2E-01	0.0E+00	1.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	Th-230	2.94E+02	6.3E-02	5.4E-01	2.2E-07	2.6E-06	1.1E+01	3.1E+01	6.7E-07	1.2E-05
Sub. (>0.5 ft)	IA-5	Th-232	1.22E+00	1.3E-03	9.5E-02	1.6E-07	4.9E-07	2.2E-01	3.9E+00	2.6E-09	2.1E-06
Sub. (>0.5 ft)	IA-5	U-234	3.25E+01	3.0E-03	0.0E+00	3.0E-09	0.0E+00	5.6E-01	0.0E+00	7.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-5	U-235	1.12E+00	4.9E-03	0.0E+00	1.4E-08	0.0E+00	2.0E-01	0.0E+00	6.9E-08	0.0E+00
Sub. (>0.5 ft)	IA-5	U-238	3.24E+01	2.8E-02	0.0E+00	1.0E-07	0.0E+00	1.5E+00	0.0E+00	5.6E-07	0.0E+00
Sub. (>0.5 ft)	IA-5	TOTAL		1.4E+00	6.3E-01	6.6E-06	3.1E-06	8.2E+01	3.4E+01	3.1E-05	1.4E-05
Surf. (<5 ft)	IA-5	Ac-227	2.18E+01	3.5E-01	0.0E+00	7.4E-07	0.0E+00	2.9E+01	0.0E+00	5.1E-06	0.0E+00
Surf. (<5 ft)	IA-5	Pa-231	2.57E+01	7.2E-02	0.0E+00	1.7E-07	0.0E+00	1.3E+01	0.0E+00	3.3E-07	0.0E+00
Surf. (<5 ft)	IA-5	Pb-210	5.00E+01	4.2E-02	0.0E+00	4.2E-08	0.0E+00	1.5E+01	0.0E+00	2.0E-06	0.0E+00
Surf. (<5 ft)	IA-5	Ra-226	2.84E+01	1.8E+00	0.0E+00	8.9E-06	0.0E+00	7.0E+01	0.0E+00	4.1E-05	0.0E+00
Surf. (<5 ft)	IA-5	Ra-228	2.23E-01	7.5E-03	0.0E+00	5.2E-08	0.0E+00	3.0E-01	0.0E+00	1.6E-07	0.0E+00
Surf. (<5 ft)	IA-5	Th-228	2.60E-01	1.5E-02	0.0E+00	2.4E-08	0.0E+00	5.8E-01	0.0E+00	3.5E-07	0.0E+00
Surf. (<5 ft)	IA-5	Th-230	6.60E+02	1.4E-01	1.2E+00	4.9E-07	5.8E-06	2.4E+01	6.8E+01	1.5E-06	2.6E-05
Surf. (<5 ft)	IA-5	Th-232	1.52E+00	1.6E-03	1.2E-01	2.0E-07	6.1E-07	2.8E-01	4.9E+00	3.3E-09	2.7E-06
Surf. (<5 ft)	IA-5	U-234	5.05E+01	4.7E-03	0.0E+00	4.6E-09	0.0E+00	8.7E-01	0.0E+00	1.2E-07	0.0E+00
Surf. (<5 ft)	IA-5	U-235	3.39E+00	1.5E-02	0.0E+00	4.3E-08	0.0E+00	6.2E-01	0.0E+00	2.1E-07	0.0E+00
Surf. (<5 ft)	IA-5	U-238	5.04E+01	4.3E-02	0.0E+00	1.6E-07	0.0E+00	2.3E+00	0.0E+00	8.7E-07	0.0E+00
Surf. (<5 ft)	IA-5	TOTAL		2.5E+00	1.3E+00	1.1E-05	6.4E-06	1.6E+02	7.3E+01	5.2E-05	2.9E-05
Sub. (>0.5 ft)	IA-6	Ac-227	1.11E+01	1.8E-01	0.0E+00	3.7E-07	0.0E+00	1.5E+01	0.0E+00	2.6E-06	0.0E+00
Sub. (>0.5 ft)	IA-6	Pa-231	1.16E+01	3.3E-02	0.0E+00	7.6E-08	0.0E+00	6.1E+00	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Pb-210	9.81E+00	8.2E-03	0.0E+00	8.2E-09	0.0E+00	2.9E+00	0.0E+00	3.9E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Ra-226	4.72E+00	3.0E-01	0.0E+00	1.5E-06	0.0E+00	1.2E+01	0.0E+00	6.8E-06	0.0E+00
Sub. (>0.5 ft)	IA-6	Ra-228	2.63E-01	8.9E-03	0.0E+00	6.1E-08	0.0E+00	3.5E-01	0.0E+00	1.9E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Th-228	4.30E-01	2.4E-02	0.0E+00	4.0E-08	0.0E+00	9.5E-01	0.0E+00	5.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	Th-230	2.85E+02	6.1E-02	5.2E-01	2.1E-07	2.5E-06	1.0E+01	3.0E+01	6.5E-07	1.1E-05
Sub. (>0.5 ft)	IA-6	Th-232	2.05E+00	2.1E-03	1.6E-01	2.7E-07	8.3E-07	3.7E-01	6.6E+00	4.4E-09	3.6E-06
Sub. (>0.5 ft)	IA-6	U-234	3.09E+01	2.9E-03	0.0E+00	2.8E-09	0.0E+00	5.3E-01	0.0E+00	7.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-6	U-235	2.73E+00	1.2E-02	0.0E+00	3.5E-08	0.0E+00	5.0E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	U-238	3.08E+01	2.6E-02	0.0E+00	9.7E-08	0.0E+00	1.4E+00	0.0E+00	5.3E-07	0.0E+00
Sub. (>0.5 ft)	IA-6	TOTAL		6.5E-01	6.8E-01	2.7E-06	3.3E-06	5.0E+01	3.6E+01	1.2E-05	1.5E-05
Surf. (<5 ft)	IA-6	Ac-227	1.77E+01	2.8E-01	0.0E+00	6.0E-07	0.0E+00	2.3E+01	0.0E+00	4.1E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 57 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	IA-6	Pa-231	1.86E+01	5.2E-02	0.0E+00	1.2E-07	0.0E+00	9.7E+00	0.0E+00	2.4E-07	0.0E+00
Surf. (<5 ft)	IA-6	Pb-210	1.64E+01	1.4E-02	0.0E+00	1.4E-08	0.0E+00	4.8E+00	0.0E+00	6.6E-07	0.0E+00
Surf. (<5 ft)	IA-6	Ra-226	8.57E+00	5.4E-01	0.0E+00	2.7E-06	0.0E+00	2.1E+01	0.0E+00	1.2E-05	0.0E+00
Surf. (<5 ft)	IA-6	Ra-228	3.93E-01	1.3E-02	0.0E+00	9.1E-08	0.0E+00	5.3E-01	0.0E+00	2.8E-07	0.0E+00
Surf. (<5 ft)	IA-6	Th-228	1.90E-01	1.1E-02	0.0E+00	1.8E-08	0.0E+00	4.2E-01	0.0E+00	2.5E-07	0.0E+00
Surf. (<5 ft)	IA-6	Th-230	4.62E+02	9.9E-02	8.4E-01	3.4E-07	4.0E-06	1.7E+01	4.8E+01	1.1E-06	1.8E-05
Surf. (<5 ft)	IA-6	Th-232	2.34E+00	2.4E-03	1.8E-01	3.1E-07	9.5E-07	4.2E-01	7.5E+00	5.0E-09	4.1E-06
Surf. (<5 ft)	IA-6	U-234	3.09E+01	2.9E-03	0.0E+00	2.8E-09	0.0E+00	5.3E-01	0.0E+00	7.3E-08	0.0E+00
Surf. (<5 ft)	IA-6	U-235	4.27E+00	1.9E-02	0.0E+00	5.4E-08	0.0E+00	7.8E-01	0.0E+00	2.6E-07	0.0E+00
Surf. (<5 ft)	IA-6	U-238	3.08E+01	2.6E-02	0.0E+00	9.7E-08	0.0E+00	1.4E+00	0.0E+00	5.3E-07	0.0E+00
Surf. (<5 ft)	IA-6	TOTAL		1.1E+00	1.0E+00	4.3E-06	5.0E-06	8.0E+01	5.5E+01	2.0E-05	2.3E-05
Sub. (>0.5 ft)	IA-7	Ac-227	1.16E-01	1.9E-03	0.0E+00	3.9E-09	0.0E+00	1.5E-01	0.0E+00	2.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	Pa-231	6.33E-01	1.8E-03	0.0E+00	4.2E-09	0.0E+00	3.3E-01	0.0E+00	8.2E-09	0.0E+00
Sub. (>0.5 ft)	IA-7	Pb-210	4.45E+00	3.7E-03	0.0E+00	3.7E-09	0.0E+00	1.3E+00	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-7	Ra-226	1.57E+00	9.8E-02	0.0E+00	4.9E-07	0.0E+00	3.9E+00	0.0E+00	2.3E-06	0.0E+00
Sub. (>0.5 ft)	IA-7	Th-228	1.30E-01	7.4E-03	0.0E+00	1.2E-08	0.0E+00	2.9E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-7	Th-230	1.11E+02	2.4E-02	2.0E-01	8.2E-08	9.7E-07	4.1E+00	1.2E+01	2.5E-07	4.4E-06
Sub. (>0.5 ft)	IA-7	Th-232	6.40E-01	6.7E-04	5.0E-02	8.5E-08	2.6E-07	1.2E-01	2.0E+00	1.4E-09	1.1E-06
Sub. (>0.5 ft)	IA-7	U-234	8.46E+00	7.8E-04	0.0E+00	7.8E-10	0.0E+00	1.5E-01	0.0E+00	2.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-7	U-235	7.52E-02	3.3E-04	0.0E+00	9.6E-10	0.0E+00	1.4E-02	0.0E+00	4.6E-09	0.0E+00
Sub. (>0.5 ft)	IA-7	U-238	8.41E+00	7.2E-03	0.0E+00	2.6E-08	0.0E+00	3.8E-01	0.0E+00	1.5E-07	0.0E+00
Sub. (>0.5 ft)	IA-7	TOTAL		1.5E-01	2.5E-01	7.1E-07	1.2E-06	1.1E+01	1.4E+01	3.1E-06	5.6E-06
Surf. (<5 ft)	IA-7	Ac-227	1.27E+02	2.0E+00	0.0E+00	4.3E-06	0.0E+00	1.7E+02	0.0E+00	2.9E-05	0.0E+00
Surf. (<5 ft)	IA-7	Pa-231	1.26E+02	3.5E-01	0.0E+00	8.3E-07	0.0E+00	6.6E+01	0.0E+00	1.6E-06	0.0E+00
Surf. (<5 ft)	IA-7	Pb-210	1.40E+02	1.2E-01	0.0E+00	1.2E-07	0.0E+00	4.1E+01	0.0E+00	5.6E-06	0.0E+00
Surf. (<5 ft)	IA-7	Ra-226	8.15E+01	5.1E+00	0.0E+00	2.6E-05	0.0E+00	2.0E+02	0.0E+00	1.2E-04	0.0E+00
Surf. (<5 ft)	IA-7	Ra-228	1.48E+00	5.0E-02	0.0E+00	3.4E-07	0.0E+00	2.0E+00	0.0E+00	1.1E-06	0.0E+00
Surf. (<5 ft)	IA-7	Th-228	1.53E+00	8.7E-02	0.0E+00	1.4E-07	0.0E+00	3.4E+00	0.0E+00	2.0E-06	0.0E+00
Surf. (<5 ft)	IA-7	Th-230	2.01E+03	4.3E-01	3.7E+00	1.5E-06	1.7E-05	7.3E+01	2.1E+02	4.6E-06	8.0E-05
Surf. (<5 ft)	IA-7	Th-232	1.50E+00	1.6E-03	1.2E-01	2.0E-07	6.1E-07	2.7E-01	4.8E+00	3.2E-09	2.6E-06
Surf. (<5 ft)	IA-7	U-234	2.76E+01	2.6E-03	0.0E+00	2.5E-09	0.0E+00	4.7E-01	0.0E+00	6.6E-08	0.0E+00
Surf. (<5 ft)	IA-7	U-235	1.02E+01	4.5E-02	0.0E+00	1.3E-07	0.0E+00	1.9E+00	0.0E+00	6.3E-07	0.0E+00
Surf. (<5 ft)	IA-7	U-238	2.75E+01	2.4E-02	0.0E+00	8.6E-08	0.0E+00	1.3E+00	0.0E+00	4.8E-07	0.0E+00
Surf. (<5 ft)	IA-7	TOTAL		8.3E+00	3.8E+00	3.3E-05	1.8E-05	5.6E+02	2.1E+02	1.6E-04	8.3E-05
Sub. (>0.5 ft)	IA-8	Ac-227	3.88E-01	6.2E-03	0.0E+00	1.3E-08	0.0E+00	5.1E-01	0.0E+00	9.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-8	Pa-231	6.03E-01	1.7E-03	0.0E+00	4.0E-09	0.0E+00	3.1E-01	0.0E+00	7.8E-09	0.0E+00
Sub. (>0.5 ft)	IA-8	Pb-210	7.02E+00	5.9E-03	0.0E+00	5.8E-09	0.0E+00	2.1E+00	0.0E+00	2.8E-07	0.0E+00
Sub. (>0.5 ft)	IA-8	Ra-226	3.08E+00	1.9E-01	0.0E+00	9.7E-07	0.0E+00	7.6E+00	0.0E+00	4.5E-06	0.0E+00
Sub. (>0.5 ft)	IA-8	Th-228	2.00E-01	1.1E-02	0.0E+00	1.9E-08	0.0E+00	4.4E-01	0.0E+00	2.7E-07	0.0E+00
Sub. (>0.5 ft)	IA-8	Th-230	1.73E+02	3.7E-02	3.2E-01	1.3E-07	1.5E-06	6.3E+00	1.8E+01	3.9E-07	6.9E-06
Sub. (>0.5 ft)	IA-8	Th-232	1.26E+00	1.3E-03	9.8E-02	1.7E-07	5.1E-07	2.3E-01	4.0E+00	2.7E-09	2.2E-06
Sub. (>0.5 ft)	IA-8	U-234	1.25E+01	1.2E-03	0.0E+00	1.1E-09	0.0E+00	2.1E-01	0.0E+00	3.0E-08	0.0E+00
Sub. (>0.5 ft)	IA-8	U-235	1.46E-01	6.5E-04	0.0E+00	1.9E-09	0.0E+00	2.7E-02	0.0E+00	9.0E-09	0.0E+00
Sub. (>0.5 ft)	IA-8	U-238	1.24E+01	1.1E-02	0.0E+00	3.9E-08	0.0E+00	5.7E-01	0.0E+00	2.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-8	TOTAL		2.7E-01	4.1E-01	1.3E-06	2.0E-06	1.8E+01	2.2E+01	5.8E-06	9.1E-06
Surf. (<0.5 ft)	IA-8	Ac-227	8.21E+01	1.3E+00	0.0E+00	2.8E-06	0.0E+00	1.1E+02	0.0E+00	1.9E-05	0.0E+00
Surf. (<0.5 ft)	IA-8	Pa-231	8.63E+01	2.4E-01	0.0E+00	5.7E-07	0.0E+00	4.5E+01	0.0E+00	1.1E-06	0.0E+00
Surf. (<0.5 ft)	IA-8	Pb-210	5.90E+01	4.9E-02	0.0E+00	4.9E-08	0.0E+00	1.7E+01	0.0E+00	2.4E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 58 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<0.5 ft)	IA-8	Ra-226	3.37E+01	2.1E+00	0.0E+00	1.1E-05	0.0E+00	8.3E+01	0.0E+00	4.9E-05	0.0E+00
Surf. (<0.5 ft)	IA-8	Ra-228	6.63E-01	2.2E-02	0.0E+00	1.5E-07	0.0E+00	8.9E-01	0.0E+00	4.8E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	Th-228	6.40E-01	3.6E-02	0.0E+00	6.0E-08	0.0E+00	1.4E+00	0.0E+00	8.5E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	Th-230	1.75E+03	3.7E-01	3.2E+00	1.3E-06	1.5E-05	6.4E+01	1.8E+02	4.0E-06	7.0E-05
Surf. (<0.5 ft)	IA-8	Th-232	9.20E-01	9.6E-04	7.2E-02	1.2E-07	3.7E-07	1.7E-01	2.9E+00	2.0E-09	1.6E-06
Surf. (<0.5 ft)	IA-8	U-234	2.48E+01	2.3E-03	0.0E+00	2.3E-09	0.0E+00	4.3E-01	0.0E+00	5.9E-08	0.0E+00
Surf. (<0.5 ft)	IA-8	U-235	2.01E+01	8.9E-02	0.0E+00	2.6E-07	0.0E+00	3.7E+00	0.0E+00	1.2E-06	0.0E+00
Surf. (<0.5 ft)	IA-8	U-238	2.47E+01	2.1E-02	0.0E+00	7.7E-08	0.0E+00	1.1E+00	0.0E+00	4.3E-07	0.0E+00
Surf. (<0.5 ft)	IA-8	TOTAL		4.3E+00	3.3E+00	1.6E-05	1.6E-05	3.3E+02	1.8E+02	7.8E-05	7.1E-05
Sub. (>0.5 ft)	IA-9	Ac-227	5.09E+00	8.2E-02	0.0E+00	1.7E-07	0.0E+00	6.8E+00	0.0E+00	1.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-9	Pa-231	5.86E+00	1.6E-02	0.0E+00	3.8E-08	0.0E+00	3.1E+00	0.0E+00	7.6E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	Pb-210	5.58E+00	4.7E-03	0.0E+00	4.6E-09	0.0E+00	1.6E+00	0.0E+00	2.2E-07	0.0E+00
Sub. (>0.5 ft)	IA-9	Ra-226	2.23E+00	1.4E-01	0.0E+00	7.0E-07	0.0E+00	5.5E+00	0.0E+00	3.2E-06	0.0E+00
Sub. (>0.5 ft)	IA-9	Ra-228	2.30E-02	7.8E-04	0.0E+00	5.3E-09	0.0E+00	3.1E-02	0.0E+00	1.7E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	Th-228	3.80E-01	2.2E-02	0.0E+00	3.6E-08	0.0E+00	8.4E-01	0.0E+00	5.1E-07	0.0E+00
Sub. (>0.5 ft)	IA-9	Th-230	1.03E+02	2.2E-02	1.9E-01	7.6E-08	9.0E-07	3.8E+00	1.1E+01	2.4E-07	4.1E-06
Sub. (>0.5 ft)	IA-9	Th-232	5.90E-01	6.1E-04	4.6E-02	7.9E-08	2.4E-07	1.1E-01	1.9E+00	1.3E-09	1.0E-06
Sub. (>0.5 ft)	IA-9	U-234	5.51E+00	5.1E-04	0.0E+00	5.1E-10	0.0E+00	9.5E-02	0.0E+00	1.3E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	U-235	8.19E-01	3.6E-03	0.0E+00	1.0E-08	0.0E+00	1.5E-01	0.0E+00	5.1E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	U-238	5.46E+00	4.7E-03	0.0E+00	1.7E-08	0.0E+00	2.5E-01	0.0E+00	9.4E-08	0.0E+00
Sub. (>0.5 ft)	IA-9	TOTAL		3.0E-01	2.3E-01	1.1E-06	1.1E-06	2.2E+01	1.3E+01	5.6E-06	5.2E-06
Surf. (<0.5 ft)	IA-9	Ac-227	2.63E+00	4.2E-02	0.0E+00	8.9E-08	0.0E+00	3.5E+00	0.0E+00	6.1E-07	0.0E+00
Surf. (<0.5 ft)	IA-9	Pa-231	3.50E+00	9.8E-03	0.0E+00	2.3E-08	0.0E+00	1.8E+00	0.0E+00	4.5E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	Pb-210	2.87E+00	2.4E-03	0.0E+00	2.4E-09	0.0E+00	8.4E-01	0.0E+00	1.2E-07	0.0E+00
Surf. (<0.5 ft)	IA-9	Ra-226	6.40E-01	4.0E-02	0.0E+00	2.0E-07	0.0E+00	1.6E+00	0.0E+00	9.3E-07	0.0E+00
Surf. (<0.5 ft)	IA-9	Th-228	1.50E-01	8.5E-03	0.0E+00	1.4E-08	0.0E+00	3.3E-01	0.0E+00	2.0E-07	0.0E+00
Surf. (<0.5 ft)	IA-9	Th-230	3.26E+01	7.0E-03	5.9E-02	2.4E-08	2.8E-07	1.2E+00	3.4E+00	7.4E-08	1.3E-06
Surf. (<0.5 ft)	IA-9	Th-232	5.40E-01	5.6E-04	4.2E-02	7.2E-08	2.2E-07	9.8E-02	1.7E+00	1.2E-09	9.4E-07
Surf. (<0.5 ft)	IA-9	U-234	4.88E+00	4.5E-04	0.0E+00	4.5E-10	0.0E+00	8.4E-02	0.0E+00	1.2E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	U-235	4.87E-01	2.2E-03	0.0E+00	6.2E-09	0.0E+00	8.9E-02	0.0E+00	3.0E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	U-238	4.83E+00	4.1E-03	0.0E+00	1.5E-08	0.0E+00	2.2E-01	0.0E+00	8.3E-08	0.0E+00
Surf. (<0.5 ft)	IA-9	TOTAL		1.2E-01	1.0E-01	4.5E-07	5.0E-07	9.7E+00	5.1E+00	2.1E-06	2.2E-06
Sub. (>0.5 ft)	Norfork Southern	Pb-210	2.35E-01	2.0E-04	0.0E+00	2.0E-10	0.0E+00	6.9E-02	0.0E+00	9.4E-09	0.0E+00
Sub. (>0.5 ft)	Norfork Southern	Ra-226	2.01E+00	1.3E-01	0.0E+00	6.3E-07	0.0E+00	4.9E+00	0.0E+00	2.9E-06	0.0E+00
Sub. (>0.5 ft)	Norfork Southern	Th-230	1.51E+01	3.2E-03	2.8E-02	1.1E-08	1.3E-07	5.5E-01	1.6E+00	3.4E-08	6.0E-07
Sub. (>0.5 ft)	Norfork Southern	Th-232	8.50E-01	8.9E-04	6.6E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.5E-06
Sub. (>0.5 ft)	Norfork Southern	U-238	1.01E+01	8.6E-03	0.0E+00	3.2E-08	0.0E+00	4.6E-01	0.0E+00	1.7E-07	0.0E+00
Sub. (>0.5 ft)	Norfork Southern	TOTAL		1.4E-01	9.4E-02	7.9E-07	4.8E-07	6.2E+00	4.3E+00	3.1E-06	2.1E-06
Surf. (<0.5 ft)	Norfork Southern	Ac-227	4.20E-03	6.8E-05	0.0E+00	1.4E-10	0.0E+00	5.6E-03	0.0E+00	9.7E-10	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Pa-231	4.48E-02	1.3E-04	0.0E+00	2.9E-10	0.0E+00	2.3E-02	0.0E+00	5.8E-10	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Pb-210	4.28E-01	3.6E-04	0.0E+00	3.6E-10	0.0E+00	1.3E-01	0.0E+00	1.7E-08	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Ra-226	1.98E+00	1.2E-01	0.0E+00	6.2E-07	0.0E+00	4.9E+00	0.0E+00	2.9E-06	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	Th-230	2.89E+01	6.2E-03	5.3E-02	2.1E-08	2.5E-07	1.1E+00	3.0E+00	6.6E-08	1.2E-06
Surf. (<0.5 ft)	Norfork Southern	Th-232	7.50E-01	7.8E-04	5.8E-02	1.0E-07	3.0E-07	1.4E-01	2.4E+00	1.6E-09	1.3E-06
Surf. (<0.5 ft)	Norfork Southern	U-238	1.01E+01	8.6E-03	0.0E+00	3.2E-08	0.0E+00	4.6E-01	0.0E+00	1.7E-07	0.0E+00
Surf. (<0.5 ft)	Norfork Southern	TOTAL		1.4E-01	1.1E-01	7.8E-07	5.6E-07	6.7E+00	5.4E+00	3.1E-06	2.5E-06
All Depths	Norfork Southern	Pb-210	2.44E-01	2.0E-04	0.0E+00	2.0E-10	0.0E+00	7.1E-02	0.0E+00	9.8E-09	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 59 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
All Depths	Norfork Southern	Ra-226	1.83E+00	1.1E-01	0.0E+00	5.7E-07	0.0E+00	4.5E+00	0.0E+00	2.7E-06	0.0E+00
All Depths	Norfork Southern	Th-230	1.57E+01	3.4E-03	2.9E-02	1.2E-08	1.4E-07	5.7E-01	1.6E+00	3.6E-08	6.3E-07
All Depths	Norfork Southern	Th-232	7.60E-01	7.9E-04	5.9E-02	1.0E-07	3.1E-07	1.4E-01	2.4E+00	1.6E-09	1.3E-06
All Depths	Norfork Southern	U-238	9.72E+00	8.3E-03	0.0E+00	3.0E-08	0.0E+00	4.4E-01	0.0E+00	1.7E-07	0.0E+00
All Depths	Norfork Southern	TOTAL		1.3E-01	8.8E-02	7.2E-07	4.4E-07	5.7E+00	4.1E+00	2.9E-06	2.0E-06
Sub. (>0.5 ft)	ROAD ROW	Pb-210	1.88E-01	1.6E-04	0.0E+00	1.6E-10	0.0E+00	5.5E-02	0.0E+00	7.5E-09	0.0E+00
Sub. (>0.5 ft)	ROAD ROW	Ra-226	1.02E+00	6.4E-02	0.0E+00	3.2E-07	0.0E+00	2.5E+00	0.0E+00	1.5E-06	0.0E+00
Sub. (>0.5 ft)	ROAD ROW	Th-230	1.17E+01	2.5E-03	2.1E-02	8.6E-09	1.0E-07	4.3E-01	1.2E+00	2.7E-08	4.7E-07
Sub. (>0.5 ft)	ROAD ROW	Th-232	1.17E+00	1.2E-03	9.1E-02	1.6E-07	4.7E-07	2.1E-01	3.7E+00	2.5E-09	2.0E-06
Sub. (>0.5 ft)	ROAD ROW	U-238	1.04E+01	8.9E-03	0.0E+00	3.3E-08	0.0E+00	4.7E-01	0.0E+00	1.8E-07	0.0E+00
Sub. (>0.5 ft)	ROAD ROW	TOTAL		7.7E-02	1.1E-01	5.2E-07	5.8E-07	3.7E+00	5.0E+00	1.7E-06	2.5E-06
Surf. (<0.5 ft)	ROAD ROW	Ac-227	8.10E-02	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.1E-01	0.0E+00	1.9E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Pa-231	5.42E-01	1.5E-03	0.0E+00	3.6E-09	0.0E+00	2.8E-01	0.0E+00	7.0E-09	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Pb-210	3.72E+00	3.1E-03	0.0E+00	3.1E-09	0.0E+00	1.1E+00	0.0E+00	1.5E-07	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Ra-226	5.04E+00	3.2E-01	0.0E+00	1.6E-06	0.0E+00	1.2E+01	0.0E+00	7.3E-06	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Ra-228	4.30E-02	1.4E-03	0.0E+00	1.0E-08	0.0E+00	5.8E-02	0.0E+00	3.1E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Th-228	3.30E-01	1.9E-02	0.0E+00	3.1E-08	0.0E+00	7.3E-01	0.0E+00	4.4E-07	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	Th-230	2.64E+02	5.7E-02	4.8E-01	1.9E-07	2.3E-06	9.6E+00	2.7E+01	6.0E-07	1.1E-05
Surf. (<0.5 ft)	ROAD ROW	Th-232	1.03E+00	1.1E-03	8.0E-02	1.4E-07	4.2E-07	1.9E-01	3.3E+00	2.2E-09	1.8E-06
Surf. (<0.5 ft)	ROAD ROW	U-234	2.06E+00	1.9E-04	0.0E+00	1.9E-10	0.0E+00	3.5E-02	0.0E+00	4.9E-09	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	U-235	1.78E-01	7.9E-04	0.0E+00	2.3E-09	0.0E+00	3.2E-02	0.0E+00	1.1E-08	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	U-238	1.06E+01	9.1E-03	0.0E+00	3.3E-08	0.0E+00	4.8E-01	0.0E+00	1.8E-07	0.0E+00
Surf. (<0.5 ft)	ROAD ROW	TOTAL		4.1E-01	5.6E-01	2.0E-06	2.7E-06	2.5E+01	3.1E+01	8.8E-06	1.2E-05
All Depths	ROAD ROW	Ac-227	8.10E-02	1.3E-03	0.0E+00	2.7E-09	0.0E+00	1.1E-01	0.0E+00	1.9E-08	0.0E+00
All Depths	ROAD ROW	Pa-231	5.42E-01	1.5E-03	0.0E+00	3.6E-09	0.0E+00	2.8E-01	0.0E+00	7.0E-09	0.0E+00
All Depths	ROAD ROW	Pb-210	6.99E-01	5.8E-04	0.0E+00	5.8E-10	0.0E+00	2.0E-01	0.0E+00	2.8E-08	0.0E+00
All Depths	ROAD ROW	Ra-226	1.84E+00	1.2E-01	0.0E+00	5.8E-07	0.0E+00	4.5E+00	0.0E+00	2.7E-06	0.0E+00
All Depths	ROAD ROW	Ra-228	4.30E-02	1.4E-03	0.0E+00	1.0E-08	0.0E+00	5.8E-02	0.0E+00	3.1E-08	0.0E+00
All Depths	ROAD ROW	Th-228	3.30E-01	1.9E-02	0.0E+00	3.1E-08	0.0E+00	7.3E-01	0.0E+00	4.4E-07	0.0E+00
All Depths	ROAD ROW	Th-230	4.82E+01	1.0E-02	8.8E-02	3.5E-08	4.2E-07	1.8E+00	5.0E+00	1.1E-07	1.9E-06
All Depths	ROAD ROW	Th-232	1.11E+00	1.2E-03	8.6E-02	1.5E-07	4.5E-07	2.0E-01	3.6E+00	2.4E-09	1.9E-06
All Depths	ROAD ROW	U-235	1.78E-01	7.9E-04	0.0E+00	2.3E-09	0.0E+00	3.2E-02	0.0E+00	1.1E-08	0.0E+00
All Depths	ROAD ROW	U-238	1.03E+01	8.8E-03	0.0E+00	3.2E-08	0.0E+00	4.7E-01	0.0E+00	1.8E-07	0.0E+00
All Depths	ROAD ROW	TOTAL		1.6E-01	1.7E-01	8.4E-07	8.7E-07	8.4E+00	8.6E+00	3.5E-06	3.9E-06
Sub. (>0.5 ft)	SLAPS	Ac-227	4.18E+00	6.7E-02	0.0E+00	1.4E-07	0.0E+00	5.5E+00	0.0E+00	9.7E-07	0.0E+00
Sub. (>0.5 ft)	SLAPS	Pa-231	4.57E+00	1.3E-02	0.0E+00	3.0E-08	0.0E+00	2.4E+00	0.0E+00	5.9E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	Pb-210	7.57E+01	6.3E-02	0.0E+00	6.3E-08	0.0E+00	2.2E+01	0.0E+00	3.0E-06	0.0E+00
Sub. (>0.5 ft)	SLAPS	Ra-226	4.35E+01	2.7E+00	0.0E+00	1.4E-05	0.0E+00	1.1E+02	0.0E+00	6.3E-05	0.0E+00
Sub. (>0.5 ft)	SLAPS	Ra-228	8.00E-03	2.7E-04	0.0E+00	1.9E-09	0.0E+00	1.1E-02	0.0E+00	5.8E-09	0.0E+00
Sub. (>0.5 ft)	SLAPS	Th-228	1.20E-01	6.8E-03	0.0E+00	1.1E-08	0.0E+00	2.7E-01	0.0E+00	1.6E-07	0.0E+00
Sub. (>0.5 ft)	SLAPS	Th-230	2.19E+02	4.7E-02	4.0E-01	1.6E-07	1.9E-06	8.0E+00	2.3E+01	5.0E-07	8.8E-06
Sub. (>0.5 ft)	SLAPS	Th-232	1.39E+00	1.4E-03	1.1E-01	1.9E-07	5.6E-07	2.5E-01	4.5E+00	3.0E-09	2.4E-06
Sub. (>0.5 ft)	SLAPS	U-234	4.12E+01	3.8E-03	0.0E+00	3.8E-09	0.0E+00	7.1E-01	0.0E+00	9.8E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	U-235	1.41E+00	6.2E-03	0.0E+00	1.8E-08	0.0E+00	2.6E-01	0.0E+00	8.7E-08	0.0E+00
Sub. (>0.5 ft)	SLAPS	U-238	4.11E+01	3.5E-02	0.0E+00	1.3E-07	0.0E+00	1.9E+00	0.0E+00	7.1E-07	0.0E+00
Sub. (>0.5 ft)	SLAPS	TOTAL		3.0E+00	5.1E-01	1.4E-05	2.5E-06	1.5E+02	2.7E+01	6.9E-05	1.1E-05
Surf. (<5 ft)	SLAPS	Ac-227	3.24E+01	5.2E-01	0.0E+00	1.1E-06	0.0E+00	4.3E+01	0.0E+00	7.5E-06	0.0E+00

Attachment 12. Radiological Doses and Risks for each Property (page 60 of 60)

			Exposure Point Conc.	RECREATIONAL/TRESPASSER				CONSTRUCTION			
Data Group	Property	Isotope	(pCi/g)	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000	Dose Year=0.0	Dose Year=1000	Risk Year=0.0	Risk Year=1000
Surf. (<5 ft)	SLAPS	Pa-231	3.39E+01	9.6E-02	0.0E+00	2.2E-07	0.0E+00	1.8E+01	0.0E+00	4.4E-07	0.0E+00
Surf. (<5 ft)	SLAPS	Pb-210	1.00E+02	8.3E-02	0.0E+00	8.3E-08	0.0E+00	2.9E+01	0.0E+00	4.0E-06	0.0E+00
Surf. (<5 ft)	SLAPS	Ra-226	5.78E+01	3.6E+00	0.0E+00	1.8E-05	0.0E+00	1.4E+02	0.0E+00	8.4E-05	0.0E+00
Surf. (<5 ft)	SLAPS	Ra-228	3.73E-01	1.3E-02	0.0E+00	8.6E-08	0.0E+00	5.0E-01	0.0E+00	2.7E-07	0.0E+00
Surf. (<5 ft)	SLAPS	Th-228	4.10E-01	2.3E-02	0.0E+00	3.9E-08	0.0E+00	9.1E-01	0.0E+00	5.5E-07	0.0E+00
Surf. (<5 ft)	SLAPS	Th-230	8.21E+02	1.8E-01	1.5E+00	6.0E-07	7.2E-06	3.0E+01	8.5E+01	1.9E-06	3.3E-05
Surf. (<5 ft)	SLAPS	Th-232	1.87E+00	1.9E-03	1.5E-01	2.5E-07	7.6E-07	3.4E-01	6.0E+00	4.0E-09	3.3E-06
Surf. (<5 ft)	SLAPS	U-234	4.85E+01	4.5E-03	0.0E+00	4.4E-09	0.0E+00	8.3E-01	0.0E+00	1.2E-07	0.0E+00
Surf. (<5 ft)	SLAPS	U-235	4.16E+00	1.8E-02	0.0E+00	5.3E-08	0.0E+00	7.6E-01	0.0E+00	2.6E-07	0.0E+00
Surf. (<5 ft)	SLAPS	U-238	4.84E+01	4.1E-02	0.0E+00	1.5E-07	0.0E+00	2.2E+00	0.0E+00	8.4E-07	0.0E+00
Surf. (<5 ft)	SLAPS	TOTAL		4.6E+00	1.6E+00	2.1E-05	7.9E-06	2.7E+02	9.1E+01	1.0E-04	3.6E-05
All Depths	Stone Container	Ac-227	2.78E+00	4.5E-02	0.0E+00	9.4E-08	0.0E+00	3.7E+00	0.0E+00	6.5E-07	0.0E+00
All Depths	Stone Container	Pa-231	3.34E+00	9.4E-03	0.0E+00	2.2E-08	0.0E+00	1.7E+00	0.0E+00	4.3E-08	0.0E+00
All Depths	Stone Container	Pb-210	6.53E+00	5.4E-03	0.0E+00	5.4E-09	0.0E+00	1.9E+00	0.0E+00	2.6E-07	0.0E+00
All Depths	Stone Container	Ra-226	1.67E+00	1.0E-01	0.0E+00	5.2E-07	0.0E+00	4.1E+00	0.0E+00	2.4E-06	0.0E+00
All Depths	Stone Container	Ra-228	8.30E-02	2.8E-03	0.0E+00	1.9E-08	0.0E+00	1.1E-01	0.0E+00	6.0E-08	0.0E+00
All Depths	Stone Container	Th-230	1.17E+02	2.5E-02	2.1E-01	8.6E-08	1.0E-06	4.3E+00	1.2E+01	2.7E-07	4.7E-06
All Depths	Stone Container	Th-232	8.40E-01	8.8E-04	6.5E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.5E-06
All Depths	Stone Container	U-234	9.17E+00	8.5E-04	0.0E+00	8.4E-10	0.0E+00	1.6E-01	0.0E+00	2.2E-08	0.0E+00
All Depths	Stone Container	U-235	4.14E-01	1.8E-03	0.0E+00	5.3E-09	0.0E+00	7.5E-02	0.0E+00	2.6E-08	0.0E+00
All Depths	Stone Container	U-238	9.12E+00	7.8E-03	0.0E+00	2.9E-08	0.0E+00	4.2E-01	0.0E+00	1.6E-07	0.0E+00
All Depths	Stone Container	TOTAL		2.0E-01	2.8E-01	9.0E-07	1.4E-06	1.7E+01	1.5E+01	3.9E-06	6.1E-06
Sub. (>0.5 ft)	Wabash/VP-2(C)	Pb-210	9.24E-02	7.7E-05	0.0E+00	7.7E-11	0.0E+00	2.7E-02	0.0E+00	3.7E-09	0.0E+00
Sub. (>0.5 ft)	Wabash/VP-2(C)	Ra-226	1.80E-01	1.1E-02	0.0E+00	5.6E-08	0.0E+00	4.4E-01	0.0E+00	2.6E-07	0.0E+00
Sub. (>0.5 ft)	Wabash/VP-2(C)	Th-230	4.94E+00	1.1E-03	9.0E-03	3.6E-09	4.3E-08	1.8E-01	5.1E-01	1.1E-08	2.0E-07
Sub. (>0.5 ft)	Wabash/VP-2(C)	Th-232	8.50E-01	8.9E-04	6.6E-02	1.1E-07	3.4E-07	1.5E-01	2.7E+00	1.8E-09	1.5E-06
Sub. (>0.5 ft)	Wabash/VP-2(C)	U-238	6.72E+00	5.7E-03	0.0E+00	2.1E-08	0.0E+00	3.1E-01	0.0E+00	1.2E-07	0.0E+00
Sub. (>0.5 ft)	Wabash/VP-2(C)	TOTAL		1.9E-02	7.5E-02	1.9E-07	3.9E-07	1.1E+00	3.2E+00	3.9E-07	1.7E-06
Surf. (<0.5 ft)	Wabash/VP-2(C)	Pb-210	9.35E-02	7.8E-05	0.0E+00	7.8E-11	0.0E+00	2.7E-02	0.0E+00	3.8E-09	0.0E+00
Surf. (<0.5 ft)	Wabash/VP-2(C)	Ra-226	1.13E+00	7.1E-02	0.0E+00	3.5E-07	0.0E+00	2.8E+00	0.0E+00	1.6E-06	0.0E+00
Surf. (<0.5 ft)	Wabash/VP-2(C)	Th-230	5.02E+00	1.1E-03	9.1E-03	3.7E-09	4.4E-08	1.8E-01	5.2E-01	1.1E-08	2.0E-07
Surf. (<0.5 ft)	Wabash/VP-2(C)	Th-232	1.37E+00	1.4E-03	1.1E-01	1.8E-07	5.5E-07	2.5E-01	4.4E+00	3.0E-09	2.4E-06
Surf. (<0.5 ft)	Wabash/VP-2(C)	U-238	1.12E+01	9.6E-03	0.0E+00	3.5E-08	0.0E+00	5.1E-01	0.0E+00	1.9E-07	0.0E+00
Surf. (<0.5 ft)	Wabash/VP-2(C)	TOTAL		8.3E-02	1.2E-01	5.8E-07	6.0E-07	3.7E+00	4.9E+00	1.8E-06	2.6E-06
All Depths	Wabash/VP-2(C)	Pb-210	8.65E-02	7.2E-05	0.0E+00	7.2E-11	0.0E+00	2.5E-02	0.0E+00	3.5E-09	0.0E+00
All Depths	Wabash/VP-2(C)	Ra-226	8.80E-01	5.5E-02	0.0E+00	2.8E-07	0.0E+00	2.2E+00	0.0E+00	1.3E-06	0.0E+00
All Depths	Wabash/VP-2(C)	Th-230	4.52E+00	9.7E-04	8.2E-03	3.3E-09	3.9E-08	1.6E-01	4.7E-01	1.0E-08	1.8E-07
All Depths	Wabash/VP-2(C)	Th-232	1.08E+00	1.1E-03	8.4E-02	1.4E-07	4.4E-07	2.0E-01	3.5E+00	2.3E-09	1.9E-06
All Depths	Wabash/VP-2(C)	U-238	9.72E+00	8.3E-03	0.0E+00	3.0E-08	0.0E+00	4.4E-01	0.0E+00	1.7E-07	0.0E+00
All Depths	Wabash/VP-2(C)	TOTAL		6.6E-02	9.2E-02	4.5E-07	4.8E-07	3.0E+00	3.9E+00	1.5E-06	2.1E-06

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 1 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Construction Worker													
Soil - All Depths	09K220205/VP-54	Manganese	10/10	4.69E+03	4.8E-01	4.0E-02	2.5E-02	5.4E-01					
Soil - All Depths	09K220205/VP-54	Inorganics Pathway Total			4.8E-01	4.0E-02	2.5E-02	5.4E-01					
Soil - All Depths	09K220205/VP-54	Pathway Total - Chemicals			4.8E-01	4.0E-02	2.5E-02	5.4E-01					
Soil - All Depths	Futura	Arsenic	1/1	3.20E+02	5.0E+00	4.1E-02		5.1E+00	3.2E-05	2.6E-07	5.3E-09	3.2E-05	H
Soil - All Depths	Futura	Barium	1/1	3.48E+03	2.3E-01	1.1E-02	1.9E-04	2.4E-01					H
Soil - All Depths	Futura	Cadmium	4/14	3.73E+00	1.8E-02	5.8E-02		7.6E-02			2.6E-11	2.6E-11	
Soil - All Depths	Futura	Molybdenum	5/14	2.01E+02	1.9E-01	1.7E-03		1.9E-01					H
Soil - All Depths	Futura	Nickel	1/1	1.73E+04	4.1E+00	5.0E-02		4.1E+00					H
Soil - All Depths	Futura	Selenium	1/14	2.15E+02	2.0E-01	1.5E-03		2.0E-01					H
Soil - All Depths	Futura	Vanadium	1/1	2.18E+03	1.5E+00	4.9E-01		1.9E+00					H
Soil - All Depths	Futura	Inorganics Pathway Total			1.1E+01	6.5E-01	1.9E-04	1.2E+01	3.2E-05	2.6E-07	5.3E-09	3.2E-05	H
Soil - All Depths	Futura	Pathway Total - Chemicals			1.1E+01	6.5E-01	1.9E-04	1.2E+01	3.2E-05	2.6E-07	5.3E-09	3.2E-05	H
Soil - All Depths	HISS	Antimony	1/13	5.70E+01	6.7E-01	1.1E-01		7.8E-01					H
Soil - All Depths	HISS	Arsenic	2/2	1.01E+03	1.6E+01	1.3E-01		1.6E+01	1.0E-04	8.2E-07	1.7E-08	1.0E-04	R,H
Soil - All Depths	HISS	Barium	2/2	4.36E+03	2.9E-01	1.4E-02	2.4E-04	3.1E-01					H
Soil - All Depths	HISS	Boron	1/1	1.01E+03	5.3E-02	1.9E-04	1.4E-05	5.3E-02					
Soil - All Depths	HISS	Cadmium	5/13	6.44E+00	3.0E-02	1.0E-01		1.3E-01			4.5E-11	4.5E-11	H
Soil - All Depths	HISS	Molybdenum	4/13	2.48E+02	2.3E-01	2.0E-03		2.3E-01					H
Soil - All Depths	HISS	Nickel	1/1	1.78E+03	4.2E-01	5.1E-03		4.2E-01					H
Soil - All Depths	HISS	Nitrate	1/1	1.03E+03	3.0E-03	2.0E-05		3.0E-03					
Soil - All Depths	HISS	Selenium	2/13	2.29E+02	2.2E-01	1.6E-03		2.2E-01					H
Soil - All Depths	HISS	Thallium	2/13	2.17E+02	1.3E+00	2.1E-02		1.3E+00					H
Soil - All Depths	HISS	Vanadium	1/1	7.12E+02	4.8E-01	1.6E-01		6.4E-01					H
Soil - All Depths	HISS	Inorganics Pathway Total			1.9E+01	5.4E-01	2.5E-04	2.0E+01	1.0E-04	8.2E-07	1.7E-08	1.0E-04	R,H
Soil - All Depths	HISS	Pathway Total - Chemicals			1.9E+01	5.4E-01	2.5E-04	2.0E+01	1.0E-04	8.2E-07	1.7E-08	1.0E-04	R,H
Surface Soil (<5 ft)	IA-1	PCB-1254	1/2	2.60E-01	2.4E-02	5.4E-03		3.0E-02	3.5E-08	7.7E-09	5.7E-13	4.3E-08	
Surface Soil (<5 ft)	IA-1	Organics Pathway Total			2.4E-02	5.4E-03		3.0E-02	3.5E-08	7.7E-09	5.7E-13	4.3E-08	
Surface Soil (<5 ft)	IA-1	Pathway Total - Chemicals			2.4E-02	5.4E-03		3.0E-02	3.5E-08	7.7E-09	5.7E-13	4.3E-08	
Surface Soil (<0.5 ft)	IA-10	Benz(a)anthracene	4/4	6.96E-01					3.4E-08	3.7E-09	2.4E-13	3.8E-08	
Surface Soil (<0.5 ft)	IA-10	Benzo(a)pyrene	4/4	7.34E-01					3.6E-07	3.9E-08	2.5E-12	4.0E-07	
Surface Soil (<0.5 ft)	IA-10	Benzo(b)fluoranthene	4/4	6.47E-01					3.2E-08	3.4E-09	2.2E-13	3.5E-08	
Surface Soil (<0.5 ft)	IA-10	Indeno(1,2,3-cd)pyrene	4/4	7.77E-01					3.8E-08	4.1E-09	2.7E-13	4.2E-08	
Surface Soil (<0.5 ft)	IA-10	Organics Pathway Total							4.6E-07	5.0E-08	3.2E-12	5.1E-07	
Surface Soil (<0.5 ft)	IA-10	Pathway Total - Chemicals							4.6E-07	5.0E-08	3.2E-12	5.1E-07	
Surface Soil (<0.5 ft)	IA-13	Arsenic	6/6	1.99E+01	3.1E-01	2.5E-03		3.1E-01	2.0E-06	1.6E-08	3.3E-10	2.0E-06	
Surface Soil (<0.5 ft)	IA-13	Thallium	1/6	1.05E+00	6.2E-03	1.0E-04		6.3E-03					
Surface Soil (<0.5 ft)	IA-13	Uranium	1/6	9.31E+00	1.5E-02	5.7E-05		1.5E-02					
Surface Soil (<0.5 ft)	IA-13	Inorganics Pathway Total			3.3E-01	2.7E-03		3.3E-01	2.0E-06	1.6E-08	3.3E-10	2.0E-06	
Surface Soil (<0.5 ft)	IA-13	Pathway Total - Chemicals			3.3E-01	2.7E-03		3.3E-01	2.0E-06	1.6E-08	3.3E-10	2.0E-06	
Surface Soil (<5 ft)	IA-2	Arsenic	2/2	2.37E+02	3.7E+00	3.0E-02		3.7E+00	2.4E-05	1.9E-07	3.9E-09	2.4E-05	H
Surface Soil (<5 ft)	IA-2	Cadmium	4/12	2.31E+00	1.1E-02	3.6E-02		4.7E-02			1.6E-11	1.6E-11	
Surface Soil (<5 ft)	IA-2	Molybdenum	3/12	5.76E+01	5.4E-02	4.7E-04		5.5E-02					

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 2 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<5 ft)	IA-2	Vanadium	2/2	8.62E+02	5.8E-01	1.9E-01		7.7E-01					H
Surface Soil (<5 ft)	IA-2	Inorganics Pathway Total			4.4E+00	2.6E-01		4.6E+00	2.4E-05	1.9E-07	4.0E-09	2.4E-05	H
Surface Soil (<5 ft)	IA-2	Pathway Total - Chemicals			4.4E+00	2.6E-01		4.6E+00	2.4E-05	1.9E-07	4.0E-09	2.4E-05	H
Surface Soil (<5 ft)	IA-3	Antimony	2/7	2.49E+01	2.9E-01	4.9E-02		3.4E-01					H
Surface Soil (<5 ft)	IA-3	Cadmium	2/7	2.14E+01	1.0E-01	3.3E-01		4.3E-01			1.5E-10	1.5E-10	H
Surface Soil (<5 ft)	IA-3	Chromium	4/4	2.72E+03	6.4E-01	1.1E-01	7.4E-03	7.5E-01			1.2E-07	1.2E-07	H
Surface Soil (<5 ft)	IA-3	Molybdenum	3/7	2.83E+01	2.7E-02	2.3E-04		2.7E-02					
Surface Soil (<5 ft)	IA-3	Thallium	2/7	1.40E+00	8.2E-03	1.4E-04		8.4E-03					
Surface Soil (<5 ft)	IA-3	Uranium	2/3	1.29E+02	2.0E-01	7.9E-04		2.0E-01					H
Surface Soil (<5 ft)	IA-3	Vanadium	3/3	5.72E+01	3.8E-02	1.3E-02		5.1E-02					
Surface Soil (<5 ft)	IA-3	Zinc	4/4	3.64E+03	5.7E-02	9.5E-04		5.8E-02					
Surface Soil (<5 ft)	IA-3	Inorganics Pathway Total			1.4E+00	5.0E-01	7.4E-03	1.9E+00			1.2E-07	1.2E-07	H
Surface Soil (<5 ft)	IA-3	1,2-Dichloroethene	1/3	3.00E-03	1.6E-06	6.5E-08		1.6E-06					
Surface Soil (<5 ft)	IA-3	Dimethylbenzene	1/3	1.00E-02	1.3E-07	4.8E-09		1.4E-07					
Surface Soil (<5 ft)	IA-3	MCPP	1/3	1.10E+01	5.2E-03	3.4E-04		5.5E-03					
Surface Soil (<5 ft)	IA-3	Organics Pathway Total			5.2E-03	3.4E-04		5.5E-03					
Surface Soil (<5 ft)	IA-3	Pathway Total - Chemicals			1.4E+00	5.0E-01	7.4E-03	1.9E+00			1.2E-07	1.2E-07	H
Surface Soil (<5 ft)	IA-4	Arsenic	3/3	5.08E+01	8.0E-01	6.4E-03		8.0E-01	5.1E-06	4.1E-08	8.4E-10	5.2E-06	H
Surface Soil (<5 ft)	IA-4	Barium	4/4	3.27E+03	2.2E-01	1.0E-02	1.8E-04	2.3E-01					H
Surface Soil (<5 ft)	IA-4	Cadmium	1/7	2.14E+00	1.0E-02	3.3E-02		4.3E-02			1.5E-11	1.5E-11	
Surface Soil (<5 ft)	IA-4	Molybdenum	3/7	3.86E+01	3.6E-02	3.2E-04		3.7E-02					
Surface Soil (<5 ft)	IA-4	Nickel	3/3	2.01E+03	4.7E-01	5.8E-03		4.8E-01					H
Surface Soil (<5 ft)	IA-4	Thallium	2/7	3.30E+00	1.9E-02	3.2E-04		2.0E-02					
Surface Soil (<5 ft)	IA-4	Uranium	1/2	7.36E+01	1.2E-01	4.5E-04		1.2E-01					H
Surface Soil (<5 ft)	IA-4	Inorganics Pathway Total			1.7E+00	5.7E-02	1.8E-04	1.7E+00	5.1E-06	4.1E-08	8.6E-10	5.2E-06	H
Surface Soil (<5 ft)	IA-4	Pathway Total - Chemicals			1.7E+00	5.7E-02	1.8E-04	1.7E+00	5.1E-06	4.1E-08	8.6E-10	5.2E-06	H
Surface Soil (<5 ft)	IA-5	Arsenic	7/7	1.60E+01	2.5E-01	2.0E-03		2.5E-01	1.6E-06	1.3E-08	2.7E-10	1.6E-06	
Surface Soil (<5 ft)	IA-5	Barium	8/8	1.77E+03	1.2E-01	5.6E-03	9.6E-05	1.2E-01					
Surface Soil (<5 ft)	IA-5	Cadmium	3/18	1.03E+00	4.8E-03	1.6E-02		2.1E-02			7.2E-12	7.2E-12	
Surface Soil (<5 ft)	IA-5	Chromium	7/7	2.59E+01	6.1E-03	1.0E-03	7.0E-05	7.2E-03			1.2E-09	1.2E-09	
Surface Soil (<5 ft)	IA-5	Thallium	4/18	2.00E+00	1.2E-02	2.0E-04		1.2E-02					
Surface Soil (<5 ft)	IA-5	Uranium	3/7	2.51E+01	3.9E-02	1.5E-04		3.9E-02					
Surface Soil (<5 ft)	IA-5	Vanadium	7/7	6.58E+01	4.4E-02	1.5E-02		5.9E-02					
Surface Soil (<5 ft)	IA-5	Inorganics Pathway Total			4.8E-01	4.0E-02	1.7E-04	5.2E-01	1.6E-06	1.3E-08	1.4E-09	1.6E-06	
Surface Soil (<5 ft)	IA-5	MCPP	1/5	2.20E+01	1.0E-02	6.9E-04		1.1E-02					
Surface Soil (<5 ft)	IA-5	Organics Pathway Total			1.0E-02	6.9E-04		1.1E-02					
Surface Soil (<5 ft)	IA-5	Pathway Total - Chemicals			4.9E-01	4.0E-02	1.7E-04	5.3E-01	1.6E-06	1.3E-08	1.4E-09	1.6E-06	
Surface Soil (<5 ft)	IA-7	Barium	4/4	1.36E+04	9.1E-01	4.3E-02	7.4E-04	9.6E-01					H
Surface Soil (<5 ft)	IA-7	Molybdenum	2/4	2.55E+02	2.4E-01	2.1E-03		2.4E-01					H
Surface Soil (<5 ft)	IA-7	Nickel	4/4	7.38E+03	1.7E+00	2.1E-02		1.8E+00					H
Surface Soil (<5 ft)	IA-7	Selenium	2/4	1.73E+02	1.6E-01	1.2E-03		1.6E-01					H
Surface Soil (<5 ft)	IA-7	Vanadium	3/3	6.30E+02	4.2E-01	1.4E-01		5.6E-01					H
Surface Soil (<5 ft)	IA-7	Inorganics Pathway Total			3.5E+00	2.1E-01	7.4E-04	3.7E+00					H
Surface Soil (<5 ft)	IA-7	Pathway Total - Chemicals			3.5E+00	2.1E-01	7.4E-04	3.7E+00					H
Surface Soil (<0.5 ft)	IA-8	Chromium	1/1	4.26E+01	1.0E-02	1.7E-03	1.2E-04	1.2E-02			1.9E-09	1.9E-09	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 3 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<0.5 ft)	IA-8	Inorganics Pathway Total			1.0E-02	1.7E-03	1.2E-04	1.2E-02			1.9E-09	1.9E-09	
Surface Soil (<0.5 ft)	IA-8	Benz(a)anthracene	1/1	1.40E+00					6.9E-08	7.4E-09	4.8E-13	7.6E-08	
Surface Soil (<0.5 ft)	IA-8	Benzo(a)pyrene	1/1	1.60E+00					7.8E-07	8.4E-08	5.5E-12	8.7E-07	
Surface Soil (<0.5 ft)	IA-8	Benzo(b)fluoranthene	1/1	2.10E+00					1.0E-07	1.1E-08	7.2E-13	1.1E-07	
Surface Soil (<0.5 ft)	IA-8	Dibenz(a,h)anthracene	1/1	2.80E-01					1.4E-07	1.5E-08	9.6E-13	1.5E-07	
Surface Soil (<0.5 ft)	IA-8	Indeno(1,2,3-cd)pyrene	1/1	8.80E-01					4.3E-08	4.6E-09	3.0E-13	4.8E-08	
Surface Soil (<0.5 ft)	IA-8	MCPA	1/1	2.50E+01	2.3E-01	1.6E-02		2.5E-01					
Surface Soil (<0.5 ft)	IA-8	Organics Pathway Total			2.3E-01	1.6E-02		2.5E-01	1.1E-06	1.2E-07	7.9E-12	1.3E-06	
Surface Soil (<0.5 ft)	IA-8	Pathway Total - Chemicals			2.4E-01	1.7E-02	1.2E-04	2.6E-01	1.1E-06	1.2E-07	1.9E-09	1.3E-06	
Surface Soil (<0.5 ft)	IA-9	Arsenic	8/8	2.14E+01	3.4E-01	2.7E-03		3.4E-01	2.2E-06	1.7E-08	3.6E-10	2.2E-06	
Surface Soil (<0.5 ft)	IA-9	Barium	8/8	5.32E+02	3.6E-02	1.7E-03	2.9E-05	3.7E-02					
Surface Soil (<0.5 ft)	IA-9	Nickel	8/8	1.08E+03	2.5E-01	3.1E-03		2.6E-01					
Surface Soil (<0.5 ft)	IA-9	Uranium	2/8	5.28E+01	8.3E-02	3.2E-04		8.3E-02					
Surface Soil (<0.5 ft)	IA-9	Vanadium	8/8	1.85E+02	1.2E-01	4.1E-02		1.7E-01					
Surface Soil (<0.5 ft)	IA-9	Inorganics Pathway Total			8.3E-01	4.9E-02	2.9E-05	8.8E-01	2.2E-06	1.7E-08	3.6E-10	2.2E-06	
Surface Soil (<0.5 ft)	IA-9	Benzo(a)pyrene	8/8	5.90E-01					2.9E-07	3.1E-08	2.0E-12	3.2E-07	
Surface Soil (<0.5 ft)	IA-9	Dimethylbenzene	2/8	7.06E-03	9.3E-08	3.4E-09		9.6E-08					
Surface Soil (<0.5 ft)	IA-9	Organics Pathway Total			9.3E-08	3.4E-09		9.6E-08	2.9E-07	3.1E-08	2.0E-12	3.2E-07	
Surface Soil (<0.5 ft)	IA-9	Pathway Total - Chemicals			8.3E-01	4.9E-02	2.9E-05	8.8E-01	2.4E-06	4.8E-08	3.6E-10	2.5E-06	
Soil - All Depths	ROAD ROW	Arsenic	1/1	2.32E+01	3.6E-01	2.9E-03		3.7E-01	2.3E-06	1.9E-08	3.9E-10	2.4E-06	H
Soil - All Depths	ROAD ROW	Manganese	1/1	6.32E+03	6.5E-01	5.4E-02	3.4E-02	7.3E-01					H
Soil - All Depths	ROAD ROW	Thallium	1/1	7.20E+00	4.2E-02	7.0E-04		4.3E-02					
Soil - All Depths	ROAD ROW	Vanadium	1/1	6.53E+01	4.4E-02	1.5E-02		5.8E-02					
Soil - All Depths	ROAD ROW	Inorganics Pathway Total			1.1E+00	7.2E-02	3.4E-02	1.2E+00	2.3E-06	1.9E-08	3.9E-10	2.4E-06	H
Soil - All Depths	ROAD ROW	MCPP	1/1	1.20E+02	5.6E-02	3.7E-03		6.0E-02					
Soil - All Depths	ROAD ROW	Organics Pathway Total			5.6E-02	3.7E-03		6.0E-02					
Soil - All Depths	ROAD ROW	Pathway Total - Chemicals			1.2E+00	7.6E-02	3.4E-02	1.3E+00	2.3E-06	1.9E-08	3.9E-10	2.4E-06	H
Surface Soil (<5 ft)	SLAPS	Arsenic	17/17	6.69E+01	1.0E+00	8.5E-03		1.1E+00	6.7E-06	5.5E-08	1.1E-09	6.8E-06	H
Surface Soil (<5 ft)	SLAPS	Barium	19/19	3.68E+03	2.5E-01	1.2E-02	2.0E-04	2.6E-01					H
Surface Soil (<5 ft)	SLAPS	Cadmium	12/52	3.45E+00	1.6E-02	5.4E-02		7.0E-02			2.4E-11	2.4E-11	
Surface Soil (<5 ft)	SLAPS	Chromium	15/15	6.14E+02	1.4E-01	2.4E-02	1.7E-03	1.7E-01			2.8E-08	2.8E-08	H
Surface Soil (<5 ft)	SLAPS	Molybdenum	19/52	3.58E+01	3.4E-02	2.9E-04		3.4E-02					
Surface Soil (<5 ft)	SLAPS	Nickel	17/17	1.74E+03	4.1E-01	5.0E-03		4.1E-01					H
Surface Soil (<5 ft)	SLAPS	Selenium	10/52	1.99E+01	1.9E-02	1.4E-04		1.9E-02					
Surface Soil (<5 ft)	SLAPS	Thallium	8/52	3.30E+00	1.9E-02	3.2E-04		2.0E-02					
Surface Soil (<5 ft)	SLAPS	Uranium	6/14	4.19E+01	6.6E-02	2.6E-04		6.6E-02					
Surface Soil (<5 ft)	SLAPS	Vanadium	17/17	2.88E+02	1.9E-01	6.4E-02		2.6E-01					H
Surface Soil (<5 ft)	SLAPS	Zinc	15/15	8.44E+02	1.3E-02	2.2E-04		1.3E-02					
Surface Soil (<5 ft)	SLAPS	Inorganics Pathway Total			2.2E+00	1.7E-01	1.9E-03	2.4E+00	6.7E-06	5.5E-08	2.9E-08	6.8E-06	H
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethene	1/11	3.00E-03	1.6E-06	6.5E-08		1.6E-06					
Surface Soil (<5 ft)	SLAPS	Dimethylbenzene	1/11	4.72E-03	6.2E-08	2.2E-09		6.4E-08					
Surface Soil (<5 ft)	SLAPS	MCPP	2/11	1.28E+01	6.0E-03	4.0E-04		6.4E-03					
Surface Soil (<5 ft)	SLAPS	PCB-1254	1/11	8.96E-02	8.4E-03	1.9E-03		1.0E-02	1.2E-08	2.7E-09	2.0E-13	1.5E-08	
Surface Soil (<5 ft)	SLAPS	Organics Pathway Total			1.4E-02	2.3E-03		1.7E-02	1.2E-08	2.7E-09	2.0E-13	1.5E-08	
Surface Soil (<5 ft)	SLAPS	Pathway Total - Chemicals			2.2E+00	1.7E-01	1.9E-03	2.4E+00	6.7E-06	5.7E-08	2.9E-08	6.8E-06	H

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 4 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Industrial Worker													
Soil - All Depths	09K220205/VP-54	Manganese	10/10	4.69E+03	5.0E-02	1.4E-02	1.1E-02	7.5E-02					
Soil - All Depths	09K220205/VP-54	Inorganics Pathway Total			5.0E-02	1.4E-02	1.1E-02	7.5E-02					
Soil - All Depths	09K220205/VP-54	Pathway Total - Chemicals			5.0E-02	1.4E-02	1.1E-02	7.5E-02					
Soil - All Depths	Futura	Arsenic	1/1	3.20E+02	5.2E-01	1.5E-02		5.4E-01	8.4E-05	2.3E-06	5.6E-08	8.6E-05	H
Soil - All Depths	Futura	Barium	1/1	3.48E+03	2.4E-02	4.0E-03	8.0E-04	2.9E-02					
Soil - All Depths	Futura	Cadmium	4/14	3.73E+00	1.8E-03	2.1E-02		2.3E-02			2.8E-10	2.8E-10	
Soil - All Depths	Futura	Molybdenum	5/14	2.01E+02	2.0E-02	5.9E-04		2.0E-02					
Soil - All Depths	Futura	Nickel	1/1	1.73E+04	4.2E-01	1.8E-02		4.4E-01					H
Soil - All Depths	Futura	Selenium	1/14	2.15E+02	2.1E-02	5.5E-04		2.2E-02					
Soil - All Depths	Futura	Vanadium	1/1	2.18E+03	1.5E-01	1.7E-01		3.3E-01					H
Soil - All Depths	Futura	Inorganics Pathway Total			1.2E+00	2.3E-01	8.0E-04	1.4E+00	8.4E-05	2.3E-06	5.7E-08	8.6E-05	H
Soil - All Depths	Futura	Pathway Total - Chemicals			1.2E+00	2.3E-01	8.0E-04	1.4E+00	8.4E-05	2.3E-06	5.7E-08	8.6E-05	H
Soil - All Depths	HISS	Antimony	1/13	5.70E+01	7.0E-02	4.0E-02		1.1E-01					H
Soil - All Depths	HISS	Arsenic	2/2	1.01E+03	1.6E+00	4.6E-02		1.7E+00	2.6E-04	7.4E-06	1.8E-07	2.7E-04	R,H
Soil - All Depths	HISS	Barium	2/2	4.36E+03	3.0E-02	5.0E-03	1.0E-03	3.6E-02					
Soil - All Depths	HISS	Boron	1/1	1.01E+03	5.5E-03	7.0E-05	5.8E-06	5.6E-03					
Soil - All Depths	HISS	Cadmium	5/13	6.44E+00	3.2E-03	3.6E-02		3.9E-02			4.8E-10	4.8E-10	
Soil - All Depths	HISS	Molybdenum	4/13	2.48E+02	2.4E-02	7.3E-04		2.5E-02					
Soil - All Depths	HISS	Nickel	1/1	1.78E+03	4.4E-02	1.8E-03		4.5E-02					
Soil - All Depths	HISS	Nitrate	1/1	1.03E+03	3.1E-04	7.2E-06		3.2E-04					
Soil - All Depths	HISS	Selenium	2/13	2.29E+02	2.2E-02	5.8E-04		2.3E-02					
Soil - All Depths	HISS	Thallium	2/13	2.17E+02	1.3E+00	7.6E-02		1.4E+00					H
Soil - All Depths	HISS	Vanadium	1/1	7.12E+02	5.0E-02	5.7E-02		1.1E-01					H
Soil - All Depths	HISS	Inorganics Pathway Total			3.2E+00	2.6E-01	1.0E-03	3.5E+00	2.6E-04	7.4E-06	1.8E-07	2.7E-04	R,H
Soil - All Depths	HISS	Pathway Total - Chemicals			3.2E+00	2.6E-01	1.0E-03	3.5E+00	2.6E-04	7.4E-06	1.8E-07	2.7E-04	R,H
Surface Soil (<5 ft)	IA-1	PCB-1254	1/2	2.60E-01	6.4E-03	4.8E-03		1.1E-02	9.1E-08	6.9E-08	6.1E-12	1.6E-07	
Surface Soil (<5 ft)	IA-1	Organics Pathway Total			6.4E-03	4.8E-03		1.1E-02	9.1E-08	6.9E-08	6.1E-12	1.6E-07	
Surface Soil (<5 ft)	IA-1	Pathway Total - Chemicals			6.4E-03	4.8E-03		1.1E-02	9.1E-08	6.9E-08	6.1E-12	1.6E-07	
Surface Soil (<0.5 ft)	IA-10	Benz(a)anthracene	4/4	6.96E-01					8.9E-08	3.3E-08	2.5E-12	1.2E-07	
Surface Soil (<0.5 ft)	IA-10	Benzo(a)pyrene	4/4	7.34E-01					9.4E-07	3.4E-07	2.7E-11	1.3E-06	
Surface Soil (<0.5 ft)	IA-10	Benzo(b)fluoranthene	4/4	6.47E-01					8.3E-08	3.0E-08	2.4E-12	1.1E-07	
Surface Soil (<0.5 ft)	IA-10	Indeno(1,2,3-cd)pyrene	4/4	7.77E-01					9.9E-08	3.6E-08	2.8E-12	1.4E-07	
Surface Soil (<0.5 ft)	IA-10	Organics Pathway Total							1.2E-06	4.4E-07	3.4E-11	1.7E-06	
Surface Soil (<0.5 ft)	IA-10	Pathway Total - Chemicals							1.2E-06	4.4E-07	3.4E-11	1.7E-06	
Surface Soil (<0.5 ft)	IA-13	Arsenic	6/6	1.99E+01	3.2E-02	9.0E-04		3.3E-02	5.2E-06	1.5E-07	3.5E-09	5.4E-06	
Surface Soil (<0.5 ft)	IA-13	Thallium	1/6	1.05E+00	6.4E-03	3.7E-04		6.8E-03					
Surface Soil (<0.5 ft)	IA-13	Uranium	1/6	9.31E+00	1.5E-03	2.0E-05		1.5E-03					
Surface Soil (<0.5 ft)	IA-13	Inorganics Pathway Total			4.0E-02	1.3E-03		4.2E-02	5.2E-06	1.5E-07	3.5E-09	5.4E-06	
Surface Soil (<0.5 ft)	IA-13	Pathway Total - Chemicals			4.0E-02	1.3E-03		4.2E-02	5.2E-06	1.5E-07	3.5E-09	5.4E-06	
Surface Soil (<5 ft)	IA-2	Arsenic	2/2	2.37E+02	3.9E-01	1.1E-02		4.0E-01	6.2E-05	1.7E-06	4.2E-08	6.4E-05	
Surface Soil (<5 ft)	IA-2	Cadmium	4/12	2.31E+00	1.1E-03	1.3E-02		1.4E-02			1.7E-10	1.7E-10	
Surface Soil (<5 ft)	IA-2	Molybdenum	3/12	5.76E+01	5.6E-03	1.7E-04		5.8E-03					

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 5 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<5 ft)	IA-2	Vanadium	2/2	8.62E+02	6.0E-02	6.9E-02		1.3E-01					
Surface Soil (<5 ft)	IA-2	Inorganics Pathway Total			4.5E-01	9.2E-02		5.5E-01	6.2E-05	1.7E-06	4.2E-08	6.4E-05	
Surface Soil (<5 ft)	IA-2	Pathway Total - Chemicals			4.5E-01	9.2E-02		5.5E-01	6.2E-05	1.7E-06	4.2E-08	6.4E-05	
Surface Soil (<5 ft)	IA-3	Antimony	2/7	2.49E+01	3.0E-02	1.7E-02		4.8E-02					
Surface Soil (<5 ft)	IA-3	Cadmium	2/7	2.14E+01	1.0E-02	1.2E-01		1.3E-01			1.6E-09	1.6E-09	
Surface Soil (<5 ft)	IA-3	Chromium	4/4	2.72E+03	4.4E-01	2.5E-01	3.1E-03	7.0E-01			1.3E-06	1.3E-06	
Surface Soil (<5 ft)	IA-3	Molybdenum	3/7	2.83E+01	2.8E-03	8.3E-05		2.9E-03					
Surface Soil (<5 ft)	IA-3	Thallium	2/7	1.40E+00	8.6E-03	4.9E-04		9.0E-03					
Surface Soil (<5 ft)	IA-3	Uranium	2/3	1.29E+02	2.1E-02	2.8E-04		2.1E-02					
Surface Soil (<5 ft)	IA-3	Vanadium	3/3	5.72E+01	4.0E-03	4.6E-03		8.6E-03					
Surface Soil (<5 ft)	IA-3	Zinc	4/4	3.64E+03	5.9E-03	3.4E-04		6.3E-03					
Surface Soil (<5 ft)	IA-3	Inorganics Pathway Total			5.3E-01	4.0E-01	3.1E-03	9.3E-01			1.3E-06	1.3E-06	
Surface Soil (<5 ft)	IA-3	1,2-Dichloroethene	1/3	3.00E-03	1.6E-07	2.3E-08		1.9E-07					
Surface Soil (<5 ft)	IA-3	Dimethylbenzene	1/3	1.00E-02	2.4E-09	3.0E-10		2.7E-09					
Surface Soil (<5 ft)	IA-3	MCPP	1/3	1.10E+01	5.4E-03	1.2E-03		6.6E-03					
Surface Soil (<5 ft)	IA-3	Organics Pathway Total			5.4E-03	1.2E-03		6.6E-03					
Surface Soil (<5 ft)	IA-3	Pathway Total - Chemicals			5.3E-01	4.0E-01	3.1E-03	9.3E-01			1.3E-06	1.3E-06	
Surface Soil (<5 ft)	IA-4	Arsenic	3/3	5.08E+01	8.3E-02	2.3E-03		8.5E-02	1.3E-05	3.7E-07	9.0E-09	1.4E-05	
Surface Soil (<5 ft)	IA-4	Barium	4/4	3.27E+03	2.3E-02	3.7E-03	7.5E-04	2.7E-02					
Surface Soil (<5 ft)	IA-4	Cadmium	1/7	2.14E+00	1.0E-03	1.2E-02		1.3E-02			1.6E-10	1.6E-10	
Surface Soil (<5 ft)	IA-4	Molybdenum	3/7	3.86E+01	3.8E-03	1.1E-04		3.9E-03					
Surface Soil (<5 ft)	IA-4	Nickel	3/3	2.01E+03	4.9E-02	2.1E-03		5.1E-02					
Surface Soil (<5 ft)	IA-4	Thallium	2/7	3.30E+00	2.0E-02	1.2E-03		2.1E-02					
Surface Soil (<5 ft)	IA-4	Uranium	1/2	7.36E+01	1.2E-02	1.6E-04		1.2E-02					
Surface Soil (<5 ft)	IA-4	Inorganics Pathway Total			1.9E-01	2.1E-02	7.5E-04	2.1E-01	1.3E-05	3.7E-07	9.1E-09	1.4E-05	
Surface Soil (<5 ft)	IA-4	Pathway Total - Chemicals			1.9E-01	2.1E-02	7.5E-04	2.1E-01	1.3E-05	3.7E-07	9.1E-09	1.4E-05	
Surface Soil (<5 ft)	IA-5	Arsenic	7/7	1.60E+01	2.6E-02	7.3E-04		2.7E-02	4.2E-06	1.2E-07	2.8E-09	4.3E-06	
Surface Soil (<5 ft)	IA-5	Barium	8/8	1.77E+03	1.2E-02	2.0E-03	4.1E-04	1.5E-02					
Surface Soil (<5 ft)	IA-5	Cadmium	3/18	1.03E+00	5.0E-04	5.7E-03		6.2E-03			7.6E-11	7.6E-11	
Surface Soil (<5 ft)	IA-5	Chromium	7/7	2.59E+01	4.2E-03	2.4E-03	3.0E-05	6.7E-03			1.2E-08	1.2E-08	
Surface Soil (<5 ft)	IA-5	Thallium	4/18	2.00E+00	1.2E-02	7.0E-04		1.3E-02					
Surface Soil (<5 ft)	IA-5	Uranium	3/7	2.51E+01	4.1E-03	5.5E-05		4.1E-03					
Surface Soil (<5 ft)	IA-5	Vanadium	7/7	6.58E+01	4.6E-03	5.2E-03		9.8E-03					
Surface Soil (<5 ft)	IA-5	Inorganics Pathway Total			6.4E-02	1.7E-02	4.4E-04	8.1E-02	4.2E-06	1.2E-07	1.5E-08	4.3E-06	
Surface Soil (<5 ft)	IA-5	MCPP	1/5	2.20E+01	1.1E-02	2.5E-03		1.3E-02					
Surface Soil (<5 ft)	IA-5	Organics Pathway Total			1.1E-02	2.5E-03		1.3E-02					
Surface Soil (<5 ft)	IA-5	Pathway Total - Chemicals			7.5E-02	1.9E-02	4.4E-04	9.5E-02	4.2E-06	1.2E-07	1.5E-08	4.3E-06	
Surface Soil (<5 ft)	IA-7	Barium	4/4	1.36E+04	9.5E-02	1.5E-02	3.1E-03	1.1E-01					
Surface Soil (<5 ft)	IA-7	Molybdenum	2/4	2.55E+02	2.5E-02	7.5E-04		2.6E-02					
Surface Soil (<5 ft)	IA-7	Nickel	4/4	7.38E+03	1.8E-01	7.6E-03		1.9E-01					
Surface Soil (<5 ft)	IA-7	Selenium	2/4	1.73E+02	1.7E-02	4.4E-04		1.7E-02					
Surface Soil (<5 ft)	IA-7	Vanadium	3/3	6.30E+02	4.4E-02	5.0E-02		9.4E-02					
Surface Soil (<5 ft)	IA-7	Inorganics Pathway Total			3.6E-01	7.4E-02	3.1E-03	4.4E-01					
Surface Soil (<5 ft)	IA-7	Pathway Total - Chemicals			3.6E-01	7.4E-02	3.1E-03	4.4E-01					
Surface Soil (<0.5 ft)	IA-8	Chromium	1/1	4.26E+01	6.9E-03	4.0E-03	4.9E-05	1.1E-02			2.0E-08	2.0E-08	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 6 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<0.5 ft)	IA-8	Inorganics Pathway Total			6.9E-03	4.0E-03	4.9E-05	1.1E-02			2.0E-08	2.0E-08	
Surface Soil (<0.5 ft)	IA-8	Benz(a)anthracene	1/1	1.40E+00					1.8E-07	6.6E-08	5.1E-12	2.4E-07	
Surface Soil (<0.5 ft)	IA-8	Benzo(a)pyrene	1/1	1.60E+00					2.0E-06	7.5E-07	5.8E-11	2.8E-06	
Surface Soil (<0.5 ft)	IA-8	Benzo(b)fluoranthene	1/1	2.10E+00					2.7E-07	9.9E-08	7.6E-12	3.7E-07	
Surface Soil (<0.5 ft)	IA-8	Dibenz(a,h)anthracene	1/1	2.80E-01					3.6E-07	1.3E-07	1.0E-11	4.9E-07	
Surface Soil (<0.5 ft)	IA-8	Indeno(1,2,3-cd)pyrene	1/1	8.80E-01					1.1E-07	4.1E-08	3.2E-12	1.5E-07	
Surface Soil (<0.5 ft)	IA-8	MCPA	1/1	2.50E+01	2.4E-02	5.6E-03		3.0E-02					
Surface Soil (<0.5 ft)	IA-8	Organics Pathway Total			2.4E-02	5.6E-03		3.0E-02	3.0E-06	1.1E-06	8.4E-11	4.0E-06	
Surface Soil (<0.5 ft)	IA-8	Pathway Total - Chemicals			3.1E-02	9.5E-03	4.9E-05	4.1E-02	3.0E-06	1.1E-06	2.1E-08	4.1E-06	
Surface Soil (<0.5 ft)	IA-9	Arsenic	8/8	2.14E+01	3.5E-02	9.7E-04		3.6E-02	5.6E-06	1.6E-07	3.8E-09	5.8E-06	
Surface Soil (<0.5 ft)	IA-9	Barium	8/8	5.32E+02	3.7E-03	6.1E-04	1.2E-04	4.4E-03					
Surface Soil (<0.5 ft)	IA-9	Nickel	8/8	1.08E+03	2.6E-02	1.1E-03		2.8E-02					
Surface Soil (<0.5 ft)	IA-9	Uranium	2/8	5.28E+01	8.6E-03	1.2E-04		8.7E-03					
Surface Soil (<0.5 ft)	IA-9	Vanadium	8/8	1.85E+02	1.3E-02	1.5E-02		2.8E-02					
Surface Soil (<0.5 ft)	IA-9	Inorganics Pathway Total			8.7E-02	1.8E-02	1.2E-04	1.0E-01	5.6E-06	1.6E-07	3.8E-09	5.8E-06	
Surface Soil (<0.5 ft)	IA-9	Benzo(a)pyrene	8/8	5.90E-01					7.5E-07	2.8E-07	2.1E-11	1.0E-06	
Surface Soil (<0.5 ft)	IA-9	Dimethylbenzene	2/8	7.06E-03	1.7E-09	2.1E-10		1.9E-09					
Surface Soil (<0.5 ft)	IA-9	Organics Pathway Total			1.7E-09	2.1E-10		1.9E-09	7.5E-07	2.8E-07	2.1E-11	1.0E-06	
Surface Soil (<0.5 ft)	IA-9	Pathway Total - Chemicals			8.7E-02	1.8E-02	1.2E-04	1.0E-01	6.4E-06	4.3E-07	3.8E-09	6.8E-06	
Soil - All Depths	ROAD ROW	Arsenic	1/1	2.32E+01	3.8E-02	1.1E-03		3.9E-02	6.1E-06	1.7E-07	4.1E-09	6.3E-06	
Soil - All Depths	ROAD ROW	Manganese	1/1	6.32E+03	6.7E-02	1.9E-02	1.5E-02	1.0E-01					
Soil - All Depths	ROAD ROW	Thallium	1/1	7.20E+00	4.4E-02	2.5E-03		4.7E-02					
Soil - All Depths	ROAD ROW	Vanadium	1/1	6.53E+01	4.6E-03	5.2E-03		9.8E-03					
Soil - All Depths	ROAD ROW	Inorganics Pathway Total			1.5E-01	2.8E-02	1.5E-02	2.0E-01	6.1E-06	1.7E-07	4.1E-09	6.3E-06	
Soil - All Depths	ROAD ROW	MCPP	1/1	1.20E+02	5.9E-02	1.3E-02		7.2E-02					
Soil - All Depths	ROAD ROW	Organics Pathway Total			5.9E-02	1.3E-02		7.2E-02					
Soil - All Depths	ROAD ROW	Pathway Total - Chemicals			2.1E-01	4.1E-02	1.5E-02	2.7E-01	6.1E-06	1.7E-07	4.1E-09	6.3E-06	
Surface Soil (<5 ft)	SLAPS	Arsenic	17/17	6.69E+01	1.1E-01	3.0E-03		1.1E-01	1.8E-05	4.9E-07	1.2E-08	1.8E-05	
Surface Soil (<5 ft)	SLAPS	Barium	19/19	3.68E+03	2.6E-02	4.2E-03	8.5E-04	3.1E-02					
Surface Soil (<5 ft)	SLAPS	Cadmium	12/52	3.45E+00	1.7E-03	1.9E-02		2.1E-02			2.5E-10	2.5E-10	
Surface Soil (<5 ft)	SLAPS	Chromium	15/15	6.14E+02	1.0E-01	5.7E-02	7.1E-04	1.6E-01			3.0E-07	3.0E-07	
Surface Soil (<5 ft)	SLAPS	Molybdenum	19/52	3.58E+01	3.5E-03	1.1E-04		3.6E-03					
Surface Soil (<5 ft)	SLAPS	Nickel	17/17	1.74E+03	4.3E-02	1.8E-03		4.4E-02					
Surface Soil (<5 ft)	SLAPS	Selenium	10/52	1.99E+01	1.9E-03	5.0E-05		2.0E-03					
Surface Soil (<5 ft)	SLAPS	Thallium	8/52	3.30E+00	2.0E-02	1.2E-03		2.1E-02					
Surface Soil (<5 ft)	SLAPS	Uranium	6/14	4.19E+01	6.8E-03	9.2E-05		6.9E-03					
Surface Soil (<5 ft)	SLAPS	Vanadium	17/17	2.88E+02	2.0E-02	2.3E-02		4.3E-02					
Surface Soil (<5 ft)	SLAPS	Zinc	15/15	8.44E+02	1.4E-03	7.8E-05		1.5E-03					
Surface Soil (<5 ft)	SLAPS	Inorganics Pathway Total			3.3E-01	1.1E-01	1.6E-03	4.4E-01	1.8E-05	4.9E-07	3.1E-07	1.8E-05	
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethene	1/11	3.00E-03	1.6E-07	2.3E-08		1.9E-07					
Surface Soil (<5 ft)	SLAPS	Dimethylbenzene	1/11	4.72E-03	1.2E-09	1.4E-10		1.3E-09					
Surface Soil (<5 ft)	SLAPS	MCPP	2/11	1.28E+01	6.3E-03	1.4E-03		7.7E-03					
Surface Soil (<5 ft)	SLAPS	PCB-1254	1/11	8.96E-02	2.2E-03	1.7E-03		3.9E-03	3.1E-08	2.4E-08	2.1E-12	5.5E-08	
Surface Soil (<5 ft)	SLAPS	Organics Pathway Total			8.5E-03	3.1E-03		1.2E-02	3.1E-08	2.4E-08	2.1E-12	5.5E-08	
Surface Soil (<5 ft)	SLAPS	Pathway Total - Chemicals			3.4E-01	1.1E-01	1.6E-03	4.6E-01	1.8E-05	5.1E-07	3.1E-07	1.8E-05	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 7 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Maintenance Worker													
Soil - All Depths	09K220205/VP-54	Manganese	10/10	4.69E+03	5.0E-02	5.2E-04	2.6E-03	5.3E-02					
Soil - All Depths	09K220205/VP-54	Inorganics Pathway Total			5.0E-02	5.2E-04	2.6E-03	5.3E-02					
Soil - All Depths	09K220205/VP-54	Pathway Total - Chemicals			5.0E-02	5.2E-04	2.6E-03	5.3E-02					
Soil - All Depths	Futura	Arsenic	1/1	3.20E+02	5.2E-01	5.3E-04		5.2E-01	2.2E-05	2.2E-08	3.7E-09	2.2E-05	H
Soil - All Depths	Futura	Barium	1/1	3.48E+03	2.4E-02	1.4E-04	2.0E-05	2.4E-02					
Soil - All Depths	Futura	Cadmium	4/14	3.73E+00	1.8E-03	7.6E-04		2.6E-03			1.8E-11	1.8E-11	
Soil - All Depths	Futura	Molybdenum	5/14	2.01E+02	2.0E-02	2.1E-05		2.0E-02					
Soil - All Depths	Futura	Nickel	1/1	1.73E+04	4.2E-01	6.5E-04		4.2E-01					H
Soil - All Depths	Futura	Selenium	1/14	2.15E+02	2.1E-02	2.0E-05		2.1E-02					
Soil - All Depths	Futura	Vanadium	1/1	2.18E+03	1.5E-01	6.3E-03		1.6E-01					H
Soil - All Depths	Futura	Inorganics Pathway Total			1.2E+00	8.4E-03	2.0E-05	1.2E+00	2.2E-05	2.2E-08	3.7E-09	2.2E-05	H
Soil - All Depths	Futura	Pathway Total - Chemicals			1.2E+00	8.4E-03	2.0E-05	1.2E+00	2.2E-05	2.2E-08	3.7E-09	2.2E-05	H
Soil - All Depths	HISS	Antimony	1/13	5.70E+01	7.0E-02	1.4E-03		7.1E-02					
Soil - All Depths	HISS	Arsenic	2/2	1.01E+03	1.6E+00	1.7E-03		1.6E+00	7.0E-05	7.1E-08	1.2E-08	7.0E-05	H
Soil - All Depths	HISS	Barium	2/2	4.36E+03	3.0E-02	1.8E-04	2.5E-05	3.1E-02					
Soil - All Depths	HISS	Boron	1/1	1.01E+03	5.5E-03	2.5E-06	1.4E-06	5.5E-03					
Soil - All Depths	HISS	Cadmium	5/13	6.44E+00	3.1E-03	1.3E-03		4.5E-03			3.1E-11	3.1E-11	
Soil - All Depths	HISS	Molybdenum	4/13	2.48E+02	2.4E-02	2.6E-05		2.4E-02					
Soil - All Depths	HISS	Nickel	1/1	1.78E+03	4.3E-02	6.7E-05		4.4E-02					
Soil - All Depths	HISS	Nitrate	1/1	1.03E+03	3.1E-04	2.6E-07		3.1E-04					
Soil - All Depths	HISS	Selenium	2/13	2.29E+02	2.2E-02	2.1E-05		2.2E-02					
Soil - All Depths	HISS	Thallium	2/13	2.17E+02	1.3E-01	2.8E-04		1.3E-01					H
Soil - All Depths	HISS	Vanadium	1/1	7.12E+02	5.0E-02	2.1E-03		5.2E-02					
Soil - All Depths	HISS	Inorganics Pathway Total			2.0E+00	7.1E-03	2.6E-05	2.0E+00	7.0E-05	7.1E-08	1.2E-08	7.0E-05	H
Soil - All Depths	HISS	Pathway Total - Chemicals			2.0E+00	7.1E-03	2.6E-05	2.0E+00	7.0E-05	7.1E-08	1.2E-08	7.0E-05	H
Surface Soil (<5 ft)	IA-1	PCB-1254	1/2	2.60E-01	2.5E-03	7.0E-05		2.6E-03	2.4E-08	6.6E-10	3.9E-13	2.5E-08	
Surface Soil (<5 ft)	IA-1	Organics Pathway Total			2.5E-03	7.0E-05		2.6E-03	2.4E-08	6.6E-10	3.9E-13	2.5E-08	
Surface Soil (<5 ft)	IA-1	Pathway Total - Chemicals			2.5E-03	7.0E-05		2.6E-03	2.4E-08	6.6E-10	3.9E-13	2.5E-08	
Surface Soil (<0.5 ft)	IA-10	Benz(a)anthracene	4/4	6.96E-01					2.3E-08	3.1E-10	1.6E-13	2.4E-08	
Surface Soil (<0.5 ft)	IA-10	Benzo(a)pyrene	4/4	7.34E-01					2.5E-07	3.3E-09	1.7E-12	2.5E-07	
Surface Soil (<0.5 ft)	IA-10	Benzo(b)fluoranthene	4/4	6.47E-01					2.2E-08	2.9E-10	1.5E-13	2.2E-08	
Surface Soil (<0.5 ft)	IA-10	Indeno(1,2,3-cd)pyrene	4/4	7.77E-01					2.6E-08	3.5E-10	1.8E-13	2.6E-08	
Surface Soil (<0.5 ft)	IA-10	Organics Pathway Total							3.2E-07	4.3E-09	2.2E-12	3.2E-07	
Surface Soil (<0.5 ft)	IA-10	Pathway Total - Chemicals							3.2E-07	4.3E-09	2.2E-12	3.2E-07	
Surface Soil (<0.5 ft)	IA-13	Arsenic	6/6	1.99E+01	3.2E-02	3.3E-05		3.2E-02	1.4E-06	1.4E-09	2.3E-10	1.4E-06	
Surface Soil (<0.5 ft)	IA-13	Thallium	1/6	1.05E+00	6.4E-04	1.3E-06		6.4E-04					
Surface Soil (<0.5 ft)	IA-13	Uranium	1/6	9.31E+00	1.5E-03	7.4E-07		1.5E-03					
Surface Soil (<0.5 ft)	IA-13	Inorganics Pathway Total			3.5E-02	3.5E-05		3.5E-02	1.4E-06	1.4E-09	2.3E-10	1.4E-06	
Surface Soil (<0.5 ft)	IA-13	Pathway Total - Chemicals			3.5E-02	3.5E-05		3.5E-02	1.4E-06	1.4E-09	2.3E-10	1.4E-06	
Surface Soil (<5 ft)	IA-2	Arsenic	2/2	2.37E+02	3.9E-01	3.9E-04		3.9E-01	1.6E-05	1.7E-08	2.7E-09	1.6E-05	
Surface Soil (<5 ft)	IA-2	Cadmium	4/12	2.31E+00	1.1E-03	4.7E-04		1.6E-03			1.1E-11	1.1E-11	
Surface Soil (<5 ft)	IA-2	Molybdenum	3/12	5.76E+01	5.6E-03	6.2E-06		5.6E-03					

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 8 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<5 ft)	IA-2	Vanadium	2/2	8.62E+02	6.0E-02	2.5E-03		6.3E-02					
Surface Soil (<5 ft)	IA-2	Inorganics Pathway Total			4.5E-01	3.4E-03		4.6E-01	1.6E-05	1.7E-08	2.7E-09	1.6E-05	
Surface Soil (<5 ft)	IA-2	Pathway Total - Chemicals			4.5E-01	3.4E-03		4.6E-01	1.6E-05	1.7E-08	2.7E-09	1.6E-05	
Surface Soil (<5 ft)	IA-3	Antimony	2/7	2.49E+01	3.0E-02	6.3E-04		3.1E-02					
Surface Soil (<5 ft)	IA-3	Cadmium	2/7	2.14E+01	1.0E-02	4.3E-03		1.5E-02			1.0E-10	1.0E-10	
Surface Soil (<5 ft)	IA-3	Chromium	4/4	2.72E+03	6.6E-02	1.4E-03	7.7E-04	6.9E-02			8.5E-08	8.5E-08	
Surface Soil (<5 ft)	IA-3	Molybdenum	3/7	2.83E+01	2.8E-03	3.0E-06		2.8E-03					
Surface Soil (<5 ft)	IA-3	Thallium	2/7	1.40E+00	8.5E-04	1.8E-06		8.6E-04					
Surface Soil (<5 ft)	IA-3	Uranium	2/3	1.29E+02	2.1E-02	1.0E-05		2.1E-02					
Surface Soil (<5 ft)	IA-3	Vanadium	3/3	5.72E+01	4.0E-03	1.7E-04		4.2E-03					
Surface Soil (<5 ft)	IA-3	Zinc	4/4	3.64E+03	5.9E-03	1.2E-05		5.9E-03					
Surface Soil (<5 ft)	IA-3	Inorganics Pathway Total			1.4E-01	6.6E-03	7.7E-04	1.5E-01			8.5E-08	8.5E-08	
Surface Soil (<5 ft)	IA-3	1,2-Dichloroethene	1/3	3.00E-03	1.6E-07	8.5E-10		1.6E-07					
Surface Soil (<5 ft)	IA-3	Dimethylbenzene	1/3	1.00E-02	1.4E-08	6.2E-11		1.4E-08					
Surface Soil (<5 ft)	IA-3	MCPP	1/3	1.10E+01	5.4E-04	4.5E-06		5.4E-04					
Surface Soil (<5 ft)	IA-3	Organics Pathway Total			5.4E-04	4.5E-06		5.4E-04					
Surface Soil (<5 ft)	IA-3	Pathway Total - Chemicals			1.4E-01	6.6E-03	7.7E-04	1.5E-01			8.5E-08	8.5E-08	
Surface Soil (<5 ft)	IA-4	Arsenic	3/3	5.08E+01	8.3E-02	8.4E-05		8.3E-02	3.5E-06	3.6E-09	5.8E-10	3.5E-06	
Surface Soil (<5 ft)	IA-4	Barium	4/4	3.27E+03	2.3E-02	1.4E-04	1.8E-05	2.3E-02					
Surface Soil (<5 ft)	IA-4	Cadmium	1/7	2.14E+00	1.0E-03	4.3E-04		1.5E-03			1.0E-11	1.0E-11	
Surface Soil (<5 ft)	IA-4	Molybdenum	3/7	3.86E+01	3.8E-03	4.1E-06		3.8E-03					
Surface Soil (<5 ft)	IA-4	Nickel	3/3	2.01E+03	4.9E-02	7.6E-05		4.9E-02					
Surface Soil (<5 ft)	IA-4	Thallium	2/7	3.30E+00	2.0E-03	4.2E-06		2.0E-03					
Surface Soil (<5 ft)	IA-4	Uranium	1/2	7.36E+01	1.2E-02	5.9E-06		1.2E-02					
Surface Soil (<5 ft)	IA-4	Inorganics Pathway Total			1.7E-01	7.4E-04	1.8E-05	1.7E-01	3.5E-06	3.6E-09	5.9E-10	3.5E-06	
Surface Soil (<5 ft)	IA-4	Pathway Total - Chemicals			1.7E-01	7.4E-04	1.8E-05	1.7E-01	3.5E-06	3.6E-09	5.9E-10	3.5E-06	
Surface Soil (<5 ft)	IA-5	Arsenic	7/7	1.60E+01	2.6E-02	2.6E-05		2.6E-02	1.1E-06	1.1E-09	1.8E-10	1.1E-06	
Surface Soil (<5 ft)	IA-5	Barium	8/8	1.77E+03	1.2E-02	7.3E-05	1.0E-05	1.2E-02					
Surface Soil (<5 ft)	IA-5	Cadmium	3/18	1.03E+00	5.0E-04	2.1E-04		7.1E-04			4.9E-12	4.9E-12	
Surface Soil (<5 ft)	IA-5	Chromium	7/7	2.59E+01	6.3E-04	1.3E-05	7.3E-06	6.5E-04			8.1E-10	8.1E-10	
Surface Soil (<5 ft)	IA-5	Thallium	4/18	2.00E+00	1.2E-03	2.5E-06		1.2E-03					
Surface Soil (<5 ft)	IA-5	Uranium	3/7	2.51E+01	4.1E-03	2.0E-06		4.1E-03					
Surface Soil (<5 ft)	IA-5	Vanadium	7/7	6.58E+01	4.6E-03	1.9E-04		4.8E-03					
Surface Soil (<5 ft)	IA-5	Inorganics Pathway Total			4.9E-02	5.2E-04	1.7E-05	5.0E-02	1.1E-06	1.1E-09	9.9E-10	1.1E-06	
Surface Soil (<5 ft)	IA-5	MCPP	1/5	2.20E+01	1.1E-03	8.9E-06		1.1E-03					
Surface Soil (<5 ft)	IA-5	Organics Pathway Total			1.1E-03	8.9E-06		1.1E-03					
Surface Soil (<5 ft)	IA-5	Pathway Total - Chemicals			5.1E-02	5.3E-04	1.7E-05	5.1E-02	1.1E-06	1.1E-09	9.9E-10	1.1E-06	
Surface Soil (<5 ft)	IA-7	Barium	4/4	1.36E+04	9.5E-02	5.6E-04	7.7E-05	9.6E-02					
Surface Soil (<5 ft)	IA-7	Molybdenum	2/4	2.55E+02	2.5E-02	2.7E-05		2.5E-02					
Surface Soil (<5 ft)	IA-7	Nickel	4/4	7.38E+03	1.8E-01	2.8E-04		1.8E-01					
Surface Soil (<5 ft)	IA-7	Selenium	2/4	1.73E+02	1.7E-02	1.6E-05		1.7E-02					
Surface Soil (<5 ft)	IA-7	Vanadium	3/3	6.30E+02	4.4E-02	1.8E-03		4.6E-02					
Surface Soil (<5 ft)	IA-7	Inorganics Pathway Total			3.6E-01	2.7E-03	7.7E-05	3.6E-01					
Surface Soil (<5 ft)	IA-7	Pathway Total - Chemicals			3.6E-01	2.7E-03	7.7E-05	3.6E-01					
Surface Soil (<0.5 ft)	IA-8	Chromium	1/1	4.26E+01	1.0E-03	2.2E-05	1.2E-05	1.1E-03			1.3E-09	1.3E-09	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 9 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<0.5 ft)	IA-8	Inorganics Pathway Total			1.0E-03	2.2E-05	1.2E-05	1.1E-03			1.3E-09	1.3E-09	
Surface Soil (<0.5 ft)	IA-8	Benz(a)anthracene	1/1	1.40E+00					4.7E-08	6.3E-10	3.3E-13	4.8E-08	
Surface Soil (<0.5 ft)	IA-8	Benzo(a)pyrene	1/1	1.60E+00					5.4E-07	7.2E-09	3.8E-12	5.5E-07	
Surface Soil (<0.5 ft)	IA-8	Benzo(b)fluoranthene	1/1	2.10E+00					7.1E-08	9.5E-10	4.9E-13	7.2E-08	
Surface Soil (<0.5 ft)	IA-8	Dibenz(a,h)anthracene	1/1	2.80E-01					9.4E-08	1.3E-09	6.6E-13	9.5E-08	
Surface Soil (<0.5 ft)	IA-8	Indeno(1,2,3-cd)pyrene	1/1	8.80E-01					3.0E-08	4.0E-10	2.1E-13	3.0E-08	
Surface Soil (<0.5 ft)	IA-8	MCPA	1/1	2.50E+01	2.4E-02	2.0E-04		2.5E-02					
Surface Soil (<0.5 ft)	IA-8	Organics Pathway Total			2.4E-02	2.0E-04		2.5E-02	7.8E-07	1.0E-08	5.4E-12	7.9E-07	
Surface Soil (<0.5 ft)	IA-8	Pathway Total - Chemicals			2.5E-02	2.2E-04	1.2E-05	2.6E-02	7.8E-07	1.0E-08	1.3E-09	7.9E-07	
Surface Soil (<0.5 ft)	IA-9	Arsenic	8/8	2.14E+01	3.5E-02	3.5E-05		3.5E-02	1.5E-06	1.5E-09	2.4E-10	1.5E-06	
Surface Soil (<0.5 ft)	IA-9	Barium	8/8	5.32E+02	3.7E-03	2.2E-05	3.0E-06	3.7E-03					
Surface Soil (<0.5 ft)	IA-9	Nickel	8/8	1.08E+03	2.6E-02	4.1E-05		2.6E-02					
Surface Soil (<0.5 ft)	IA-9	Uranium	2/8	5.28E+01	8.6E-03	4.2E-06		8.6E-03					
Surface Soil (<0.5 ft)	IA-9	Vanadium	8/8	1.85E+02	1.3E-02	5.4E-04		1.3E-02					
Surface Soil (<0.5 ft)	IA-9	Inorganics Pathway Total			8.6E-02	6.4E-04	3.0E-06	8.7E-02	1.5E-06	1.5E-09	2.4E-10	1.5E-06	
Surface Soil (<0.5 ft)	IA-9	Benzo(a)pyrene	8/8	5.90E-01					2.0E-07	2.7E-09	1.4E-12	2.0E-07	
Surface Soil (<0.5 ft)	IA-9	Dimethylbenzene	2/8	7.06E-03	9.7E-09	4.4E-11		9.7E-09					
Surface Soil (<0.5 ft)	IA-9	Organics Pathway Total			9.7E-09	4.4E-11		9.7E-09	2.0E-07	2.7E-09	1.4E-12	2.0E-07	
Surface Soil (<0.5 ft)	IA-9	Pathway Total - Chemicals			8.6E-02	6.4E-04	3.0E-06	8.7E-02	1.7E-06	4.2E-09	2.5E-10	1.7E-06	
Soil - All Depths	ROAD ROW	Arsenic	1/1	2.32E+01	3.8E-02	3.8E-05		3.8E-02	1.6E-06	1.6E-09	2.6E-10	1.6E-06	
Soil - All Depths	ROAD ROW	Manganese	1/1	6.32E+03	6.7E-02	7.0E-04	3.6E-03	7.1E-02					
Soil - All Depths	ROAD ROW	Thallium	1/1	7.20E+00	4.4E-03	9.1E-06		4.4E-03					
Soil - All Depths	ROAD ROW	Vanadium	1/1	6.53E+01	4.6E-03	1.9E-04		4.7E-03					
Soil - All Depths	ROAD ROW	Inorganics Pathway Total			1.1E-01	9.3E-04	3.6E-03	1.2E-01	1.6E-06	1.6E-09	2.6E-10	1.6E-06	
Soil - All Depths	ROAD ROW	MCPP	1/1	1.20E+02	5.9E-03	4.9E-05		5.9E-03					
Soil - All Depths	ROAD ROW	Organics Pathway Total			5.9E-03	4.9E-05		5.9E-03					
Soil - All Depths	ROAD ROW	Pathway Total - Chemicals			1.2E-01	9.8E-04	3.6E-03	1.2E-01	1.6E-06	1.6E-09	2.6E-10	1.6E-06	
Surface Soil (<5 ft)	SLAPS	Arsenic	17/17	6.69E+01	1.1E-01	1.1E-04		1.1E-01	4.6E-06	4.7E-09	7.6E-10	4.6E-06	
Surface Soil (<5 ft)	SLAPS	Barium	19/19	3.68E+03	2.6E-02	1.5E-04	2.1E-05	2.6E-02					
Surface Soil (<5 ft)	SLAPS	Cadmium	12/52	3.45E+00	1.7E-03	7.0E-04		2.4E-03			1.6E-11	1.6E-11	
Surface Soil (<5 ft)	SLAPS	Chromium	15/15	6.14E+02	1.5E-02	3.1E-04	1.7E-04	1.5E-02			1.9E-08	1.9E-08	
Surface Soil (<5 ft)	SLAPS	Molybdenum	19/52	3.58E+01	3.5E-03	3.8E-06		3.5E-03					
Surface Soil (<5 ft)	SLAPS	Nickel	17/17	1.74E+03	4.2E-02	6.5E-05		4.3E-02					
Surface Soil (<5 ft)	SLAPS	Selenium	10/52	1.99E+01	1.9E-03	1.8E-06		1.9E-03					
Surface Soil (<5 ft)	SLAPS	Thallium	8/52	3.30E+00	2.0E-03	4.2E-06		2.0E-03					
Surface Soil (<5 ft)	SLAPS	Uranium	6/14	4.19E+01	6.8E-03	3.3E-06		6.8E-03					
Surface Soil (<5 ft)	SLAPS	Vanadium	17/17	2.88E+02	2.0E-02	8.4E-04		2.1E-02					
Surface Soil (<5 ft)	SLAPS	Zinc	15/15	8.44E+02	1.4E-03	2.9E-06		1.4E-03					
Surface Soil (<5 ft)	SLAPS	Inorganics Pathway Total			2.3E-01	2.2E-03	1.9E-04	2.3E-01	4.6E-06	4.7E-09	2.0E-08	4.6E-06	
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethene	1/11	3.00E-03	1.6E-07	8.5E-10		1.6E-07					
Surface Soil (<5 ft)	SLAPS	Dimethylbenzene	1/11	4.72E-03	6.5E-09	2.9E-11		6.5E-09					
Surface Soil (<5 ft)	SLAPS	MCPP	2/11	1.28E+01	6.3E-04	5.2E-06		6.3E-04					
Surface Soil (<5 ft)	SLAPS	PCB-1254	1/11	8.96E-02	8.8E-04	2.4E-05		9.0E-04	8.3E-09	2.3E-10	1.4E-13	8.5E-09	
Surface Soil (<5 ft)	SLAPS	Organics Pathway Total			1.5E-03	2.9E-05		1.5E-03	8.3E-09	2.3E-10	1.4E-13	8.5E-09	
Surface Soil (<5 ft)	SLAPS	Pathway Total - Chemicals			2.3E-01	2.2E-03	1.9E-04	2.3E-01	4.6E-06	4.9E-09	2.0E-08	4.7E-06	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 10 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Recreational/Trespasser													
Soil - All Depths	09K220205/VP-54	Manganese	10/10	4.69E+03	7.3E-03	3.7E-03	3.7E-04	1.1E-02					
Soil - All Depths	09K220205/VP-54	Inorganics Pathway Total			7.3E-03	3.7E-03	3.7E-04	1.1E-02					
Soil - All Depths	09K220205/VP-54	Pathway Total - Chemicals			7.3E-03	3.7E-03	3.7E-04	1.1E-02					
Soil - All Depths	Futura	Arsenic	1/1	3.20E+02	7.6E-02	3.8E-03		8.0E-02	4.4E-06	2.2E-07	6.9E-10	4.6E-06	
Soil - All Depths	Futura	Barium	1/1	3.48E+03	3.5E-03	1.0E-03	2.7E-05	4.6E-03					
Soil - All Depths	Futura	Cadmium	4/14	3.73E+00	2.7E-04	5.4E-03		5.7E-03			3.4E-12	3.4E-12	
Soil - All Depths	Futura	Molybdenum	5/14	2.01E+02	2.9E-03	1.5E-04		3.0E-03					
Soil - All Depths	Futura	Nickel	1/1	1.73E+04	6.2E-02	4.7E-03		6.6E-02					
Soil - All Depths	Futura	Selenium	1/14	2.15E+02	3.1E-03	1.4E-04		3.2E-03					
Soil - All Depths	Futura	Vanadium	1/1	2.18E+03	2.2E-02	4.5E-02		6.7E-02					
Soil - All Depths	Futura	Inorganics Pathway Total			1.7E-01	6.0E-02	2.7E-05	2.3E-01	4.4E-06	2.2E-07	6.9E-10	4.6E-06	
Soil - All Depths	Futura	Pathway Total - Chemicals			1.7E-01	6.0E-02	2.7E-05	2.3E-01	4.4E-06	2.2E-07	6.9E-10	4.6E-06	
Soil - All Depths	HISS	Antimony	1/13	5.70E+01	1.0E-02	1.0E-02		2.1E-02					
Soil - All Depths	HISS	Arsenic	2/2	1.01E+03	2.4E-01	1.2E-02		2.5E-01	1.4E-05	6.9E-07	2.2E-09	1.5E-05	
Soil - All Depths	HISS	Barium	2/2	4.36E+03	4.4E-03	1.3E-03	3.4E-05	5.8E-03					
Soil - All Depths	HISS	Boron	1/1	1.01E+03	8.0E-04	1.8E-05	2.0E-07	8.2E-04					
Soil - All Depths	HISS	Cadmium	5/13	6.44E+00	4.6E-04	9.4E-03		9.8E-03			5.8E-12	5.8E-12	
Soil - All Depths	HISS	Molybdenum	4/13	2.48E+02	3.5E-03	1.9E-04		3.7E-03					
Soil - All Depths	HISS	Nickel	1/1	1.78E+03	6.3E-03	4.8E-04		6.8E-03					
Soil - All Depths	HISS	Nitrate	1/1	1.03E+03	4.6E-05	1.9E-06		4.8E-05					
Soil - All Depths	HISS	Selenium	2/13	2.29E+02	3.3E-03	1.5E-04		3.4E-03					
Soil - All Depths	HISS	Thallium	2/13	2.17E+02	1.9E-01	2.0E-02		2.1E-01					
Soil - All Depths	HISS	Vanadium	1/1	7.12E+02	7.2E-03	1.5E-02		2.2E-02					
Soil - All Depths	HISS	Inorganics Pathway Total			4.7E-01	6.8E-02	3.4E-05	5.4E-01	1.4E-05	6.9E-07	2.2E-09	1.5E-05	
Soil - All Depths	HISS	Pathway Total - Chemicals			4.7E-01	6.8E-02	3.4E-05	5.4E-01	1.4E-05	6.9E-07	2.2E-09	1.5E-05	
Surface Soil (<5 ft)	IA-1	PCB-1254	1/2	2.60E-01	9.3E-04	1.3E-03		2.2E-03	4.8E-09	6.5E-09	7.4E-14	1.1E-08	
Surface Soil (<5 ft)	IA-1	Organics Pathway Total			9.3E-04	1.3E-03		2.2E-03	4.8E-09	6.5E-09	7.4E-14	1.1E-08	
Surface Soil (<5 ft)	IA-1	Pathway Total - Chemicals			9.3E-04	1.3E-03		2.2E-03	4.8E-09	6.5E-09	7.4E-14	1.1E-08	
Surface Soil (<0.5 ft)	IA-10	Benz(a)anthracene	4/4	6.96E-01					4.7E-09	3.1E-09	3.1E-14	7.7E-09	
Surface Soil (<0.5 ft)	IA-10	Benzo(a)pyrene	4/4	7.34E-01					4.9E-08	3.2E-08	3.3E-13	8.1E-08	
Surface Soil (<0.5 ft)	IA-10	Benzo(b)fluoranthene	4/4	6.47E-01					4.3E-09	2.8E-09	2.9E-14	7.2E-09	
Surface Soil (<0.5 ft)	IA-10	Indeno(1,2,3-cd)pyrene	4/4	7.77E-01					5.2E-09	3.4E-09	3.4E-14	8.6E-09	
Surface Soil (<0.5 ft)	IA-10	Organics Pathway Total							6.3E-08	4.2E-08	4.2E-13	1.0E-07	
Surface Soil (<0.5 ft)	IA-10	Pathway Total - Chemicals							6.3E-08	4.2E-08	4.2E-13	1.0E-07	
Surface Soil (<0.5 ft)	IA-13	Arsenic	6/6	1.99E+01	4.7E-03	2.4E-04		5.0E-03	2.7E-07	1.4E-08	4.3E-11	2.9E-07	
Surface Soil (<0.5 ft)	IA-13	Thallium	1/6	1.05E+00	9.3E-04	9.5E-05		1.0E-03					
Surface Soil (<0.5 ft)	IA-13	Uranium	1/6	9.31E+00	2.2E-04	5.3E-06		2.3E-04					
Surface Soil (<0.5 ft)	IA-13	Inorganics Pathway Total			5.9E-03	3.4E-04		6.2E-03	2.7E-07	1.4E-08	4.3E-11	2.9E-07	
Surface Soil (<0.5 ft)	IA-13	Pathway Total - Chemicals			5.9E-03	3.4E-04		6.2E-03	2.7E-07	1.4E-08	4.3E-11	2.9E-07	
Surface Soil (<5 ft)	IA-2	Arsenic	2/2	2.37E+02	5.6E-02	2.8E-03		5.9E-02	3.3E-06	1.6E-07	5.1E-10	3.4E-06	
Surface Soil (<5 ft)	IA-2	Cadmium	4/12	2.31E+00	1.6E-04	3.4E-03		3.5E-03			2.1E-12	2.1E-12	
Surface Soil (<5 ft)	IA-2	Molybdenum	3/12	5.76E+01	8.2E-04	4.4E-05		8.6E-04					

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 11 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<5 ft)	IA-2	Vanadium	2/2	8.62E+02	8.8E-03	1.8E-02		2.7E-02					
Surface Soil (<5 ft)	IA-2	Inorganics Pathway Total			6.6E-02	2.4E-02		9.0E-02	3.3E-06	1.6E-07	5.1E-10	3.4E-06	
Surface Soil (<5 ft)	IA-2	Pathway Total - Chemicals			6.6E-02	2.4E-02		9.0E-02	3.3E-06	1.6E-07	5.1E-10	3.4E-06	
Surface Soil (<5 ft)	IA-3	Antimony	2/7	2.49E+01	4.4E-03	4.5E-03		9.0E-03					
Surface Soil (<5 ft)	IA-3	Cadmium	2/7	2.14E+01	1.5E-03	3.1E-02		3.3E-02			1.9E-11	1.9E-11	
Surface Soil (<5 ft)	IA-3	Chromium	4/4	2.72E+03	6.5E-02	6.6E-02	1.1E-04	1.3E-01			1.6E-08	1.6E-08	
Surface Soil (<5 ft)	IA-3	Molybdenum	3/7	2.83E+01	4.0E-04	2.2E-05		4.2E-04					
Surface Soil (<5 ft)	IA-3	Thallium	2/7	1.40E+00	1.2E-03	1.3E-04		1.4E-03					
Surface Soil (<5 ft)	IA-3	Uranium	2/3	1.29E+02	3.1E-03	7.4E-05		3.1E-03					
Surface Soil (<5 ft)	IA-3	Vanadium	3/3	5.72E+01	5.8E-04	1.2E-03		1.8E-03					
Surface Soil (<5 ft)	IA-3	Zinc	4/4	3.64E+03	8.6E-04	8.8E-05		9.5E-04					
Surface Soil (<5 ft)	IA-3	Inorganics Pathway Total			7.7E-02	1.0E-01	1.1E-04	1.8E-01			1.6E-08	1.6E-08	
Surface Soil (<5 ft)	IA-3	1,2-Dichloroethene	1/3	3.00E-03	2.4E-08	6.1E-09		3.0E-08					
Surface Soil (<5 ft)	IA-3	Dimethylbenzene	1/3	1.00E-02	3.6E-10	7.9E-11		4.4E-10					
Surface Soil (<5 ft)	IA-3	MCPP	1/3	1.10E+01	7.8E-04	3.2E-04		1.1E-03					
Surface Soil (<5 ft)	IA-3	Organics Pathway Total			7.8E-04	3.2E-04		1.1E-03					
Surface Soil (<5 ft)	IA-3	Pathway Total - Chemicals			7.7E-02	1.0E-01	1.1E-04	1.8E-01			1.6E-08	1.6E-08	
Surface Soil (<5 ft)	IA-4	Arsenic	3/3	5.08E+01	1.2E-02	6.0E-04		1.3E-02	7.0E-07	3.5E-08	1.1E-10	7.3E-07	
Surface Soil (<5 ft)	IA-4	Barium	4/4	3.27E+03	3.3E-03	9.7E-04	2.5E-05	4.3E-03					
Surface Soil (<5 ft)	IA-4	Cadmium	1/7	2.14E+00	1.5E-04	3.1E-03		3.3E-03			1.9E-12	1.9E-12	
Surface Soil (<5 ft)	IA-4	Molybdenum	3/7	3.86E+01	5.5E-04	3.0E-05		5.8E-04					
Surface Soil (<5 ft)	IA-4	Nickel	3/3	2.01E+03	7.2E-03	5.4E-04		7.7E-03					
Surface Soil (<5 ft)	IA-4	Thallium	2/7	3.30E+00	2.9E-03	3.0E-04		3.2E-03					
Surface Soil (<5 ft)	IA-4	Uranium	1/2	7.36E+01	1.7E-03	4.2E-05		1.8E-03					
Surface Soil (<5 ft)	IA-4	Inorganics Pathway Total			2.8E-02	5.6E-03	2.5E-05	3.4E-02	7.0E-07	3.5E-08	1.1E-10	7.3E-07	
Surface Soil (<5 ft)	IA-4	Pathway Total - Chemicals			2.8E-02	5.6E-03	2.5E-05	3.4E-02	7.0E-07	3.5E-08	1.1E-10	7.3E-07	
Surface Soil (<5 ft)	IA-5	Arsenic	7/7	1.60E+01	3.8E-03	1.9E-04		4.0E-03	2.2E-07	1.1E-08	3.4E-11	2.3E-07	
Surface Soil (<5 ft)	IA-5	Barium	8/8	1.77E+03	1.8E-03	5.2E-04	1.4E-05	2.3E-03					
Surface Soil (<5 ft)	IA-5	Cadmium	3/18	1.03E+00	7.3E-05	1.5E-03		1.6E-03			9.3E-13	9.3E-13	
Surface Soil (<5 ft)	IA-5	Chromium	7/7	2.59E+01	6.1E-04	6.3E-04	1.0E-06	1.2E-03			1.5E-10	1.5E-10	
Surface Soil (<5 ft)	IA-5	Thallium	4/18	2.00E+00	1.8E-03	1.8E-04		2.0E-03					
Surface Soil (<5 ft)	IA-5	Uranium	3/7	2.51E+01	6.0E-04	1.4E-05		6.1E-04					
Surface Soil (<5 ft)	IA-5	Vanadium	7/7	6.58E+01	6.7E-04	1.4E-03		2.0E-03					
Surface Soil (<5 ft)	IA-5	Inorganics Pathway Total			9.3E-03	4.4E-03	1.5E-05	1.4E-02	2.2E-07	1.1E-08	1.9E-10	2.3E-07	
Surface Soil (<5 ft)	IA-5	MCPP	1/5	2.20E+01	1.6E-03	6.4E-04		2.2E-03					
Surface Soil (<5 ft)	IA-5	Organics Pathway Total			1.6E-03	6.4E-04		2.2E-03					
Surface Soil (<5 ft)	IA-5	Pathway Total - Chemicals			1.1E-02	5.0E-03	1.5E-05	1.6E-02	2.2E-07	1.1E-08	1.9E-10	2.3E-07	
Surface Soil (<5 ft)	IA-7	Barium	4/4	1.36E+04	1.4E-02	4.0E-03	1.1E-04	1.8E-02					
Surface Soil (<5 ft)	IA-7	Molybdenum	2/4	2.55E+02	3.6E-03	2.0E-04		3.8E-03					
Surface Soil (<5 ft)	IA-7	Nickel	4/4	7.38E+03	2.6E-02	2.0E-03		2.8E-02					
Surface Soil (<5 ft)	IA-7	Selenium	2/4	1.73E+02	2.5E-03	1.1E-04		2.6E-03					
Surface Soil (<5 ft)	IA-7	Vanadium	3/3	6.30E+02	6.4E-03	1.3E-02		1.9E-02					
Surface Soil (<5 ft)	IA-7	Inorganics Pathway Total			5.3E-02	1.9E-02	1.1E-04	7.2E-02					
Surface Soil (<5 ft)	IA-7	Pathway Total - Chemicals			5.3E-02	1.9E-02	1.1E-04	7.2E-02					
Surface Soil (<0.5 ft)	IA-8	Chromium	1/1	4.26E+01	1.0E-03	1.0E-03	1.7E-06	2.0E-03			2.5E-10	2.5E-10	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 12 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<0.5 ft)	IA-8	Inorganics Pathway Total			1.0E-03	1.0E-03	1.7E-06	2.0E-03			2.5E-10	2.5E-10	
Surface Soil (<0.5 ft)	IA-8	Benz(a)anthracene	1/1	1.40E+00					9.4E-09	6.2E-09	6.2E-14	1.6E-08	
Surface Soil (<0.5 ft)	IA-8	Benzo(a)pyrene	1/1	1.60E+00					1.1E-07	7.0E-08	7.1E-13	1.8E-07	
Surface Soil (<0.5 ft)	IA-8	Benzo(b)fluoranthene	1/1	2.10E+00					1.4E-08	9.2E-09	9.3E-14	2.3E-08	
Surface Soil (<0.5 ft)	IA-8	Dibenz(a,h)anthracene	1/1	2.80E-01					1.9E-08	1.2E-08	1.2E-13	3.1E-08	
Surface Soil (<0.5 ft)	IA-8	Indeno(1,2,3-cd)pyrene	1/1	8.80E-01					5.9E-09	3.9E-09	3.9E-14	9.8E-09	
Surface Soil (<0.5 ft)	IA-8	MCPA	1/1	2.50E+01	3.6E-03	1.5E-03		5.0E-03					
Surface Soil (<0.5 ft)	IA-8	Organics Pathway Total			3.6E-03	1.5E-03		5.0E-03	1.5E-07	1.0E-07	1.0E-12	2.6E-07	
Surface Soil (<0.5 ft)	IA-8	Pathway Total - Chemicals			4.6E-03	2.5E-03	1.7E-06	7.1E-03	1.5E-07	1.0E-07	2.5E-10	2.6E-07	
Surface Soil (<0.5 ft)	IA-9	Arsenic	8/8	2.14E+01	5.1E-03	2.5E-04		5.3E-03	2.9E-07	1.5E-08	4.6E-11	3.1E-07	
Surface Soil (<0.5 ft)	IA-9	Barium	8/8	5.32E+02	5.4E-04	1.6E-04	4.1E-06	7.0E-04					
Surface Soil (<0.5 ft)	IA-9	Nickel	8/8	1.08E+03	3.8E-03	2.9E-04		4.1E-03					
Surface Soil (<0.5 ft)	IA-9	Uranium	2/8	5.28E+01	1.3E-03	3.0E-05		1.3E-03					
Surface Soil (<0.5 ft)	IA-9	Vanadium	8/8	1.85E+02	1.9E-03	3.8E-03		5.7E-03					
Surface Soil (<0.5 ft)	IA-9	Inorganics Pathway Total			1.3E-02	4.6E-03	4.1E-06	1.7E-02	2.9E-07	1.5E-08	4.6E-11	3.1E-07	
Surface Soil (<0.5 ft)	IA-9	Benzo(a)pyrene	8/8	5.90E-01					3.9E-08	2.6E-08	2.6E-13	6.5E-08	
Surface Soil (<0.5 ft)	IA-9	Dimethylbenzene	2/8	7.06E-03	2.5E-10	5.6E-11		3.1E-10					
Surface Soil (<0.5 ft)	IA-9	Organics Pathway Total			2.5E-10	5.6E-11		3.1E-10	3.9E-08	2.6E-08	2.6E-13	6.5E-08	
Surface Soil (<0.5 ft)	IA-9	Pathway Total - Chemicals			1.3E-02	4.6E-03	4.1E-06	1.7E-02	3.3E-07	4.1E-08	4.6E-11	3.7E-07	
Soil - All Depths	ROAD ROW	Arsenic	1/1	2.32E+01	5.5E-03	2.7E-04		5.8E-03	3.2E-07	1.6E-08	5.0E-11	3.3E-07	
Soil - All Depths	ROAD ROW	Manganese	1/1	6.32E+03	9.8E-03	5.0E-03	4.9E-04	1.5E-02					
Soil - All Depths	ROAD ROW	Thallium	1/1	7.20E+00	6.4E-03	6.5E-04		7.1E-03					
Soil - All Depths	ROAD ROW	Vanadium	1/1	6.53E+01	6.6E-04	1.4E-03		2.0E-03					
Soil - All Depths	ROAD ROW	Inorganics Pathway Total			2.2E-02	7.3E-03	4.9E-04	3.0E-02	3.2E-07	1.6E-08	5.0E-11	3.3E-07	
Soil - All Depths	ROAD ROW	MCPP	1/1	1.20E+02	8.5E-03	3.5E-03		1.2E-02					
Soil - All Depths	ROAD ROW	Organics Pathway Total			8.5E-03	3.5E-03		1.2E-02					
Soil - All Depths	ROAD ROW	Pathway Total - Chemicals			3.1E-02	1.1E-02	4.9E-04	4.2E-02	3.2E-07	1.6E-08	5.0E-11	3.3E-07	
Surface Soil (<5 ft)	SLAPS	Arsenic	17/17	6.69E+01	1.6E-02	7.9E-04		1.7E-02	9.2E-07	4.6E-08	1.4E-10	9.6E-07	
Surface Soil (<5 ft)	SLAPS	Barium	19/19	3.68E+03	3.7E-03	1.1E-03	2.9E-05	4.9E-03					
Surface Soil (<5 ft)	SLAPS	Cadmium	12/52	3.45E+00	2.5E-04	5.0E-03		5.3E-03			3.1E-12	3.1E-12	
Surface Soil (<5 ft)	SLAPS	Chromium	15/15	6.14E+02	1.5E-02	1.5E-02	2.4E-05	2.9E-02			3.6E-09	3.6E-09	
Surface Soil (<5 ft)	SLAPS	Molybdenum	19/52	3.58E+01	5.1E-04	2.7E-05		5.4E-04					
Surface Soil (<5 ft)	SLAPS	Nickel	17/17	1.74E+03	6.2E-03	4.7E-04		6.7E-03					
Surface Soil (<5 ft)	SLAPS	Selenium	10/52	1.99E+01	2.8E-04	1.3E-05		3.0E-04					
Surface Soil (<5 ft)	SLAPS	Thallium	8/52	3.30E+00	2.9E-03	3.0E-04		3.2E-03					
Surface Soil (<5 ft)	SLAPS	Uranium	6/14	4.19E+01	9.9E-04	2.4E-05		1.0E-03					
Surface Soil (<5 ft)	SLAPS	Vanadium	17/17	2.88E+02	2.9E-03	6.0E-03		8.9E-03					
Surface Soil (<5 ft)	SLAPS	Zinc	15/15	8.44E+02	2.0E-04	2.0E-05		2.2E-04					
Surface Soil (<5 ft)	SLAPS	Inorganics Pathway Total			4.9E-02	2.9E-02	5.3E-05	7.7E-02	9.2E-07	4.6E-08	3.7E-09	9.7E-07	
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethene	1/11	3.00E-03	2.4E-08	6.1E-09		3.0E-08					
Surface Soil (<5 ft)	SLAPS	Dimethylbenzene	1/11	4.72E-03	1.7E-10	3.7E-11		2.1E-10					
Surface Soil (<5 ft)	SLAPS	MCPP	2/11	1.28E+01	9.1E-04	3.7E-04		1.3E-03					
Surface Soil (<5 ft)	SLAPS	PCB-1254	1/11	8.96E-02	3.2E-04	4.3E-04		7.5E-04	1.6E-09	2.2E-09	2.6E-14	3.9E-09	
Surface Soil (<5 ft)	SLAPS	Organics Pathway Total			1.2E-03	8.1E-04		2.0E-03	1.6E-09	2.2E-09	2.6E-14	3.9E-09	
Surface Soil (<5 ft)	SLAPS	Pathway Total - Chemicals			5.0E-02	2.9E-02	5.3E-05	7.9E-02	9.2E-07	4.8E-08	3.7E-09	9.7E-07	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 13 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Residential													
Soil - All Depths	09K220205/VP-54	Manganese	10/10	4.69E+03	1.9E-01	1.6E-02	3.5E-02	2.4E-01					
Soil - All Depths	09K220205/VP-54	Inorganics Pathway Total			1.9E-01	1.6E-02	3.5E-02	2.4E-01					
Soil - All Depths	09K220205/VP-54	Pathway Total - Chemicals			1.9E-01	1.6E-02	3.5E-02	2.4E-01					
Soil - All Depths	Futura	Arsenic	1/1	3.20E+02	2.0E+00	1.6E-02		2.0E+00	3.8E-04	3.1E-06	2.2E-07	3.9E-04	R,H
Soil - All Depths	Futura	Barium	1/1	3.48E+03	9.3E-02	4.4E-03	2.6E-03	1.0E-01					
Soil - All Depths	Futura	Cadmium	4/14	3.73E+00	6.9E-03	2.3E-02		3.0E-02			1.1E-09	1.1E-09	
Soil - All Depths	Futura	Molybdenum	5/14	2.01E+02	7.5E-02	6.6E-04		7.6E-02					
Soil - All Depths	Futura	Nickel	1/1	1.73E+04	1.6E+00	2.0E-02		1.6E+00					H
Soil - All Depths	Futura	Selenium	1/14	2.15E+02	8.0E-02	6.1E-04		8.1E-02					
Soil - All Depths	Futura	Vanadium	1/1	2.18E+03	5.8E-01	1.9E-01		7.7E-01					H
Soil - All Depths	Futura	Inorganics Pathway Total			4.4E+00	2.6E-01	2.6E-03	4.7E+00	3.8E-04	3.1E-06	2.2E-07	3.9E-04	R,H
Soil - All Depths	Futura	Pathway Total - Chemicals			4.4E+00	2.6E-01	2.6E-03	4.7E+00	3.8E-04	3.1E-06	2.2E-07	3.9E-04	R,H
Soil - All Depths	HISS	Antimony	1/13	5.70E+01	2.7E-01	4.5E-02		3.1E-01					H
Soil - All Depths	HISS	Arsenic	2/2	1.01E+03	6.3E+00	5.1E-02		6.3E+00	1.2E-03	9.9E-06	6.9E-07	1.2E-03	R,H
Soil - All Depths	HISS	Barium	2/2	4.36E+03	1.2E-01	5.6E-03	3.2E-03	1.2E-01					H
Soil - All Depths	HISS	Boron	1/1	1.01E+03	2.1E-02	7.8E-05	1.9E-05	2.1E-02					
Soil - All Depths	HISS	Cadmium	5/13	6.44E+00	1.2E-02	4.0E-02		5.2E-02			1.8E-09	1.8E-09	
Soil - All Depths	HISS	Molybdenum	4/13	2.48E+02	9.2E-02	8.2E-04		9.3E-02					
Soil - All Depths	HISS	Nickel	1/1	1.78E+03	1.7E-01	2.1E-03		1.7E-01					H
Soil - All Depths	HISS	Nitrate	1/1	1.03E+03	1.2E-03	8.0E-06		1.2E-03					
Soil - All Depths	HISS	Selenium	2/13	2.29E+02	8.5E-02	6.5E-04		8.6E-02					
Soil - All Depths	HISS	Thallium	2/13	2.17E+02	5.1E+00	8.5E-02		5.1E+00					H
Soil - All Depths	HISS	Vanadium	1/1	7.12E+02	1.9E-01	6.4E-02		2.5E-01					H
Soil - All Depths	HISS	Inorganics Pathway Total			1.2E+01	2.9E-01	3.2E-03	1.3E+01	1.2E-03	9.9E-06	6.9E-07	1.2E-03	R,H
Soil - All Depths	HISS	Pathway Total - Chemicals			1.2E+01	2.9E-01	3.2E-03	1.3E+01	1.2E-03	9.9E-06	6.9E-07	1.2E-03	R,H
Surface Soil (<5 ft)	IA-1	PCB-1254	1/2	2.60E-01	2.4E-02	5.4E-03		3.0E-02	4.2E-07	9.3E-08	2.4E-11	5.1E-07	
Surface Soil (<5 ft)	IA-1	Organics Pathway Total			2.4E-02	5.4E-03		3.0E-02	4.2E-07	9.3E-08	2.4E-11	5.1E-07	
Surface Soil (<5 ft)	IA-1	Pathway Total - Chemicals			2.4E-02	5.4E-03		3.0E-02	4.2E-07	9.3E-08	2.4E-11	5.1E-07	
Surface Soil (<0.5 ft)	IA-10	Benz(a)anthracene	4/4	6.96E-01					4.1E-07	4.4E-08	9.8E-12	4.5E-07	
Surface Soil (<0.5 ft)	IA-10	Benzo(a)pyrene	4/4	7.34E-01					4.3E-06	4.6E-07	1.0E-10	4.7E-06	
Surface Soil (<0.5 ft)	IA-10	Benzo(b)fluoranthene	4/4	6.47E-01					3.8E-07	4.1E-08	9.1E-12	4.2E-07	
Surface Soil (<0.5 ft)	IA-10	Indeno(1,2,3-cd)pyrene	4/4	7.77E-01					4.5E-07	4.9E-08	1.1E-11	5.0E-07	
Surface Soil (<0.5 ft)	IA-10	Organics Pathway Total							5.5E-06	6.0E-07	1.3E-10	6.1E-06	
Surface Soil (<0.5 ft)	IA-10	Pathway Total - Chemicals							5.5E-06	6.0E-07	1.3E-10	6.1E-06	
Surface Soil (<0.5 ft)	IA-13	Arsenic	6/6	1.99E+01	1.2E-01	1.0E-03		1.2E-01	2.4E-05	1.9E-07	1.4E-08	2.4E-05	
Surface Soil (<0.5 ft)	IA-13	Thallium	1/6	1.05E+00	2.4E-02	4.1E-04		2.5E-02					
Surface Soil (<0.5 ft)	IA-13	Uranium	1/6	9.31E+00	5.8E-03	2.3E-05		5.8E-03					
Surface Soil (<0.5 ft)	IA-13	Inorganics Pathway Total			1.5E-01	1.4E-03		1.6E-01	2.4E-05	1.9E-07	1.4E-08	2.4E-05	
Surface Soil (<0.5 ft)	IA-13	Pathway Total - Chemicals			1.5E-01	1.4E-03		1.6E-01	2.4E-05	1.9E-07	1.4E-08	2.4E-05	
Surface Soil (<5 ft)	IA-2	Arsenic	2/2	2.37E+02	1.5E+00	1.2E-02		1.5E+00	2.8E-04	2.3E-06	1.6E-07	2.9E-04	R,H
Surface Soil (<5 ft)	IA-2	Cadmium	4/12	2.31E+00	4.3E-03	1.4E-02		1.9E-02			6.6E-10	6.6E-10	
Surface Soil (<5 ft)	IA-2	Molybdenum	3/12	5.76E+01	2.1E-02	1.9E-04		2.2E-02					

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 14 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<5 ft)	IA-2	Vanadium	2/2	8.62E+02	2.3E-01	7.7E-02		3.1E-01					H
Surface Soil (<5 ft)	IA-2	Inorganics Pathway Total			1.7E+00	1.0E-01		1.8E+00	2.8E-04	2.3E-06	1.6E-07	2.9E-04	R,H
Surface Soil (<5 ft)	IA-2	Pathway Total - Chemicals			1.7E+00	1.0E-01		1.8E+00	2.8E-04	2.3E-06	1.6E-07	2.9E-04	R,H
Surface Soil (<5 ft)	IA-3	Antimony	2/7	2.49E+01	1.2E-01	1.9E-02		1.4E-01					H
Surface Soil (<5 ft)	IA-3	Cadmium	2/7	2.14E+01	4.0E-02	1.3E-01		1.7E-01			6.1E-09	6.1E-09	H
Surface Soil (<5 ft)	IA-3	Chromium	4/4	2.72E+03	1.7E+00	2.8E-01	1.0E-02	2.0E+00			5.1E-06	5.1E-06	H
Surface Soil (<5 ft)	IA-3	Molybdenum	3/7	2.83E+01	1.1E-02	9.3E-05		1.1E-02					
Surface Soil (<5 ft)	IA-3	Thallium	2/7	1.40E+00	3.3E-02	5.5E-04		3.3E-02					
Surface Soil (<5 ft)	IA-3	Uranium	2/3	1.29E+02	8.0E-02	3.2E-04		8.0E-02					
Surface Soil (<5 ft)	IA-3	Vanadium	3/3	5.72E+01	1.5E-02	5.1E-03		2.0E-02					
Surface Soil (<5 ft)	IA-3	Zinc	4/4	3.64E+03	2.3E-02	3.8E-04		2.3E-02					
Surface Soil (<5 ft)	IA-3	Inorganics Pathway Total			2.0E+00	4.4E-01	1.0E-02	2.5E+00			5.1E-06	5.1E-06	H
Surface Soil (<5 ft)	IA-3	1,2-Dichloroethene	1/3	3.00E-03	6.2E-07	2.6E-08		6.5E-07					
Surface Soil (<5 ft)	IA-3	Dimethylbenzene	1/3	1.00E-02	9.3E-09	3.4E-10		9.7E-09					
Surface Soil (<5 ft)	IA-3	MCPP	1/3	1.10E+01	2.0E-02	1.4E-03		2.2E-02					
Surface Soil (<5 ft)	IA-3	Organics Pathway Total			2.0E-02	1.4E-03		2.2E-02					
Surface Soil (<5 ft)	IA-3	Pathway Total - Chemicals			2.0E+00	4.4E-01	1.0E-02	2.5E+00			5.1E-06	5.1E-06	H
Surface Soil (<5 ft)	IA-4	Arsenic	3/3	5.08E+01	3.2E-01	2.6E-03		3.2E-01	6.1E-05	5.0E-07	3.5E-08	6.1E-05	
Surface Soil (<5 ft)	IA-4	Barium	4/4	3.27E+03	8.7E-02	4.2E-03	2.4E-03	9.4E-02					
Surface Soil (<5 ft)	IA-4	Cadmium	1/7	2.14E+00	4.0E-03	1.3E-02		1.7E-02			6.1E-10	6.1E-10	
Surface Soil (<5 ft)	IA-4	Molybdenum	3/7	3.86E+01	1.4E-02	1.3E-04		1.5E-02					
Surface Soil (<5 ft)	IA-4	Nickel	3/3	2.01E+03	1.9E-01	2.3E-03		1.9E-01					
Surface Soil (<5 ft)	IA-4	Thallium	2/7	3.30E+00	7.7E-02	1.3E-03		7.8E-02					
Surface Soil (<5 ft)	IA-4	Uranium	1/2	7.36E+01	4.6E-02	1.8E-04		4.6E-02					
Surface Soil (<5 ft)	IA-4	Inorganics Pathway Total			7.3E-01	2.4E-02	2.4E-03	7.6E-01	6.1E-05	5.0E-07	3.5E-08	6.1E-05	
Surface Soil (<5 ft)	IA-4	Pathway Total - Chemicals			7.3E-01	2.4E-02	2.4E-03	7.6E-01	6.1E-05	5.0E-07	3.5E-08	6.1E-05	
Surface Soil (<5 ft)	IA-5	Arsenic	7/7	1.60E+01	9.9E-02	8.1E-04		1.0E-01	1.9E-05	1.6E-07	1.1E-08	1.9E-05	
Surface Soil (<5 ft)	IA-5	Barium	8/8	1.77E+03	4.7E-02	2.3E-03	1.3E-03	5.1E-02					
Surface Soil (<5 ft)	IA-5	Cadmium	3/18	1.03E+00	1.9E-03	6.4E-03		8.4E-03			2.9E-10	2.9E-10	
Surface Soil (<5 ft)	IA-5	Chromium	7/7	2.59E+01	1.6E-02	2.7E-03	9.6E-05	1.9E-02			4.8E-08	4.8E-08	
Surface Soil (<5 ft)	IA-5	Thallium	4/18	2.00E+00	4.7E-02	7.8E-04		4.7E-02					
Surface Soil (<5 ft)	IA-5	Uranium	3/7	2.51E+01	1.6E-02	6.1E-05		1.6E-02					
Surface Soil (<5 ft)	IA-5	Vanadium	7/7	6.58E+01	1.8E-02	5.9E-03		2.3E-02					
Surface Soil (<5 ft)	IA-5	Inorganics Pathway Total			2.4E-01	1.9E-02	1.4E-03	2.6E-01	1.9E-05	1.6E-07	5.9E-08	1.9E-05	
Surface Soil (<5 ft)	IA-5	MCPP	1/5	2.20E+01	4.1E-02	2.7E-03		4.4E-02					
Surface Soil (<5 ft)	IA-5	Organics Pathway Total			4.1E-02	2.7E-03		4.4E-02					
Surface Soil (<5 ft)	IA-5	Pathway Total - Chemicals			2.9E-01	2.2E-02	1.4E-03	3.1E-01	1.9E-05	1.6E-07	5.9E-08	1.9E-05	
Surface Soil (<5 ft)	IA-7	Barium	4/4	1.36E+04	3.6E-01	1.7E-02	1.0E-02	3.9E-01					H
Surface Soil (<5 ft)	IA-7	Molybdenum	2/4	2.55E+02	9.5E-02	8.4E-04		9.6E-02					
Surface Soil (<5 ft)	IA-7	Nickel	4/4	7.38E+03	6.9E-01	8.5E-03		7.0E-01					H
Surface Soil (<5 ft)	IA-7	Selenium	2/4	1.73E+02	6.4E-02	4.9E-04		6.5E-02					
Surface Soil (<5 ft)	IA-7	Vanadium	3/3	6.30E+02	1.7E-01	5.6E-02		2.2E-01					H
Surface Soil (<5 ft)	IA-7	Inorganics Pathway Total			1.4E+00	8.3E-02	1.0E-02	1.5E+00					H
Surface Soil (<5 ft)	IA-7	Pathway Total - Chemicals			1.4E+00	8.3E-02	1.0E-02	1.5E+00					H
Surface Soil (<0.5 ft)	IA-8	Chromium	1/1	4.26E+01	2.6E-02	4.4E-03	1.6E-04	3.1E-02			7.9E-08	7.9E-08	

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 15 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Surface Soil (<0.5 ft)	IA-8	Inorganics Pathway Total			2.6E-02	4.4E-03	1.6E-04	3.1E-02			7.9E-08	7.9E-08	
Surface Soil (<0.5 ft)	IA-8	Benz(a)anthracene	1/1	1.40E+00					8.2E-07	8.8E-08	2.0E-11	9.0E-07	
Surface Soil (<0.5 ft)	IA-8	Benzo(a)pyrene	1/1	1.60E+00					9.3E-06	1.0E-06	2.2E-10	1.0E-05	
Surface Soil (<0.5 ft)	IA-8	Benzo(b)fluoranthene	1/1	2.10E+00					1.2E-06	1.3E-07	2.9E-11	1.4E-06	
Surface Soil (<0.5 ft)	IA-8	Dibenz(a,h)anthracene	1/1	2.80E-01					1.6E-06	1.8E-07	3.9E-11	1.8E-06	
Surface Soil (<0.5 ft)	IA-8	Indeno(1,2,3-cd)pyrene	1/1	8.80E-01					5.1E-07	5.5E-08	1.2E-11	5.7E-07	
Surface Soil (<0.5 ft)	IA-8	MCPA	1/1	2.50E+01	9.3E-02	6.2E-03		9.9E-02					
Surface Soil (<0.5 ft)	IA-8	Organics Pathway Total			9.3E-02	6.2E-03		9.9E-02	1.4E-05	1.5E-06	3.3E-10	1.5E-05	
Surface Soil (<0.5 ft)	IA-8	Pathway Total - Chemicals			1.2E-01	1.1E-02	1.6E-04	1.3E-01	1.4E-05	1.5E-06	7.9E-08	1.5E-05	
Surface Soil (<0.5 ft)	IA-9	Arsenic	8/8	2.14E+01	1.3E-01	1.1E-03		1.3E-01	2.6E-05	2.1E-07	1.5E-08	2.6E-05	
Surface Soil (<0.5 ft)	IA-9	Barium	8/8	5.32E+02	1.4E-02	6.8E-04	3.9E-04	1.5E-02					
Surface Soil (<0.5 ft)	IA-9	Nickel	8/8	1.08E+03	1.0E-01	1.2E-03		1.0E-01					
Surface Soil (<0.5 ft)	IA-9	Uranium	2/8	5.28E+01	3.3E-02	1.3E-04		3.3E-02					
Surface Soil (<0.5 ft)	IA-9	Vanadium	8/8	1.85E+02	4.9E-02	1.7E-02		6.6E-02					
Surface Soil (<0.5 ft)	IA-9	Inorganics Pathway Total			3.3E-01	2.0E-02	3.9E-04	3.5E-01	2.6E-05	2.1E-07	1.5E-08	2.6E-05	
Surface Soil (<0.5 ft)	IA-9	Benzo(a)pyrene	8/8	5.90E-01					3.4E-06	3.7E-07	8.3E-11	3.8E-06	
Surface Soil (<0.5 ft)	IA-9	Dimethylbenzene	2/8	7.06E-03	6.6E-09	2.4E-10		6.8E-09					
Surface Soil (<0.5 ft)	IA-9	Organics Pathway Total			6.6E-09	2.4E-10		6.8E-09	3.4E-06	3.7E-07	8.3E-11	3.8E-06	
Surface Soil (<0.5 ft)	IA-9	Pathway Total - Chemicals			3.3E-01	2.0E-02	3.9E-04	3.5E-01	2.9E-05	5.8E-07	1.5E-08	3.0E-05	
Soil - All Depths	ROAD ROW	Arsenic	1/1	2.32E+01	1.4E-01	1.2E-03		1.5E-01	2.8E-05	2.3E-07	1.6E-08	2.8E-05	
Soil - All Depths	ROAD ROW	Manganese	1/1	6.32E+03	2.6E-01	2.1E-02	4.7E-02	3.2E-01					
Soil - All Depths	ROAD ROW	Thallium	1/1	7.20E+00	1.7E-01	2.8E-03		1.7E-01					
Soil - All Depths	ROAD ROW	Vanadium	1/1	6.53E+01	1.7E-02	5.8E-03		2.3E-02					
Soil - All Depths	ROAD ROW	Inorganics Pathway Total			5.9E-01	3.1E-02	4.7E-02	6.6E-01	2.8E-05	2.3E-07	1.6E-08	2.8E-05	
Soil - All Depths	ROAD ROW	MCPP	1/1	1.20E+02	2.2E-01	1.5E-02		2.4E-01					
Soil - All Depths	ROAD ROW	Organics Pathway Total			2.2E-01	1.5E-02		2.4E-01					
Soil - All Depths	ROAD ROW	Pathway Total - Chemicals			8.1E-01	4.6E-02	4.7E-02	9.0E-01	2.8E-05	2.3E-07	1.6E-08	2.8E-05	
Surface Soil (<5 ft)	SLAPS	Arsenic	17/17	6.69E+01	4.2E-01	3.4E-03		4.2E-01	8.0E-05	6.6E-07	4.6E-08	8.1E-05	H
Surface Soil (<5 ft)	SLAPS	Barium	19/19	3.68E+03	9.8E-02	4.7E-03	2.7E-03	1.1E-01					H
Surface Soil (<5 ft)	SLAPS	Cadmium	12/52	3.45E+00	6.4E-03	2.2E-02		2.8E-02			9.8E-10	9.8E-10	
Surface Soil (<5 ft)	SLAPS	Chromium	15/15	6.14E+02	3.8E-01	6.4E-02	2.3E-03	4.5E-01			1.1E-06	1.1E-06	H
Surface Soil (<5 ft)	SLAPS	Molybdenum	19/52	3.58E+01	1.3E-02	1.2E-04		1.3E-02					
Surface Soil (<5 ft)	SLAPS	Nickel	17/17	1.74E+03	1.6E-01	2.0E-03		1.6E-01					H
Surface Soil (<5 ft)	SLAPS	Selenium	10/52	1.99E+01	7.4E-03	5.7E-05		7.5E-03					
Surface Soil (<5 ft)	SLAPS	Thallium	8/52	3.30E+00	7.7E-02	1.3E-03		7.8E-02					
Surface Soil (<5 ft)	SLAPS	Uranium	6/14	4.19E+01	2.6E-02	1.0E-04		2.6E-02					
Surface Soil (<5 ft)	SLAPS	Vanadium	17/17	2.88E+02	7.7E-02	2.6E-02		1.0E-01					H
Surface Soil (<5 ft)	SLAPS	Zinc	15/15	8.44E+02	5.2E-03	8.8E-05		5.3E-03					
Surface Soil (<5 ft)	SLAPS	Inorganics Pathway Total			1.3E+00	1.2E-01	5.0E-03	1.4E+00	8.0E-05	6.6E-07	1.2E-06	8.2E-05	H
Surface Soil (<5 ft)	SLAPS	1,2-Dichloroethene	1/11	3.00E-03	6.2E-07	2.6E-08		6.5E-07					
Surface Soil (<5 ft)	SLAPS	Dimethylbenzene	1/11	4.72E-03	4.4E-09	1.6E-10		4.6E-09					
Surface Soil (<5 ft)	SLAPS	MCPP	2/11	1.28E+01	2.4E-02	1.6E-03		2.5E-02					
Surface Soil (<5 ft)	SLAPS	PCB-1254	1/11	8.96E-02	8.3E-03	1.9E-03		1.0E-02	1.4E-07	3.2E-08	8.1E-12	1.8E-07	
Surface Soil (<5 ft)	SLAPS	Organics Pathway Total			3.2E-02	3.5E-03		3.6E-02	1.4E-07	3.2E-08	8.1E-12	1.8E-07	
Surface Soil (<5 ft)	SLAPS	Pathway Total - Chemicals			1.3E+00	1.3E-01	5.0E-03	1.4E+00	8.0E-05	6.9E-07	1.2E-06	8.2E-05	H

HQ = Hazard Quotient

Attachment 13. Surface Soil Risks and Hazards for Chemicals by Property (page 16 of 16)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]

HI = Hazard Index
COPC = Contaminant of Potential Concern

[a] COPC codes:
H = COPC based on hazard result
R = COPC based on risk result

Attachment 14. Subsurface Soil Risks and Hazards for Chemicals by Property (page 1 of 2)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Construction Worker													
Subsurface Soil (>0.5 ft)	09K220205/VP-54	Manganese	10/10	4.69E+03	4.8E-01	4.0E-02	2.5E-02	5.4E-01					
Subsurface Soil (>0.5 ft)	09K220205/VP-54	Inorganics Pathway Total			4.8E-01	4.0E-02	2.5E-02	5.4E-01					
Subsurface Soil (>0.5 ft)	09K220205/VP-54	Pathway Total - Chemicals			4.8E-01	4.0E-02	2.5E-02	5.4E-01					
Subsurface Soil (>0.5 ft)	IA-10	Antimony	1/14	4.27E+01	5.0E-01	8.3E-02		5.8E-01					H
Subsurface Soil (>0.5 ft)	IA-10	Arsenic	5/5	4.21E+02	6.6E+00	5.3E-02		6.6E+00	4.2E-05	3.4E-07	7.0E-09	4.3E-05	H
Subsurface Soil (>0.5 ft)	IA-10	Thallium	2/14	1.50E+02	8.8E-01	1.5E-02		9.0E-01					H
Subsurface Soil (>0.5 ft)	IA-10	Inorganics Pathway Total			8.0E+00	1.5E-01		8.1E+00	4.2E-05	3.4E-07	7.0E-09	4.3E-05	H
Subsurface Soil (>0.5 ft)	IA-10	Pathway Total - Chemicals			8.0E+00	1.5E-01		8.1E+00	4.2E-05	3.4E-07	7.0E-09	4.3E-05	H
Subsurface Soil (>0.5 ft)	IA-2	Arsenic	7/7	1.45E+02	2.3E+00	1.8E-02		2.3E+00	1.5E-05	1.2E-07	2.4E-09	1.5E-05	H
Subsurface Soil (>0.5 ft)	IA-2	Uranium	2/5	1.01E+02	1.6E-01	6.2E-04		1.6E-01					H
Subsurface Soil (>0.5 ft)	IA-2	Inorganics Pathway Total			2.4E+00	1.9E-02		2.4E+00	1.5E-05	1.2E-07	2.4E-09	1.5E-05	H
Subsurface Soil (>0.5 ft)	IA-2	1,2-Dichloroethene	1/5	1.49E-02	7.8E-06	3.2E-07		8.1E-06					
Subsurface Soil (>0.5 ft)	IA-2	Organics Pathway Total			7.8E-06	3.2E-07		8.1E-06					
Subsurface Soil (>0.5 ft)	IA-2	Pathway Total - Chemicals			2.4E+00	1.9E-02		2.4E+00	1.5E-05	1.2E-07	2.4E-09	1.5E-05	H
Subsurface Soil (>0.5 ft)	IA-3	Chromium	8/8	1.19E+03	2.8E-01	4.6E-02	3.2E-03	3.3E-01			5.4E-08	5.4E-08	
Subsurface Soil (>0.5 ft)	IA-3	Uranium	2/7	5.95E+01	9.3E-02	3.6E-04		9.4E-02					
Subsurface Soil (>0.5 ft)	IA-3	Inorganics Pathway Total			3.7E-01	4.7E-02	3.2E-03	4.2E-01			5.4E-08	5.4E-08	
Subsurface Soil (>0.5 ft)	IA-3	1,2-Dichloroethene	1/7	3.00E-03	1.6E-06	6.5E-08		1.6E-06					
Subsurface Soil (>0.5 ft)	IA-3	Dimethylbenzene	2/7	6.45E-03	8.5E-08	3.1E-09		8.8E-08					
Subsurface Soil (>0.5 ft)	IA-3	Organics Pathway Total			1.7E-06	6.8E-08		1.7E-06					
Subsurface Soil (>0.5 ft)	IA-3	Pathway Total - Chemicals			3.7E-01	4.7E-02	3.2E-03	4.2E-01			5.4E-08	5.4E-08	
Subsurface Soil (>0.5 ft)	IA-4	Arsenic	13/13	1.62E+01	2.5E-01	2.1E-03		2.6E-01	1.6E-06	1.3E-08	2.7E-10	1.6E-06	
Subsurface Soil (>0.5 ft)	IA-4	Uranium	2/12	2.42E+01	3.8E-02	1.5E-04		3.8E-02					
Subsurface Soil (>0.5 ft)	IA-4	Inorganics Pathway Total			2.9E-01	2.2E-03		2.9E-01	1.6E-06	1.3E-08	2.7E-10	1.6E-06	
Subsurface Soil (>0.5 ft)	IA-4	Pathway Total - Chemicals			2.9E-01	2.2E-03		2.9E-01	1.6E-06	1.3E-08	2.7E-10	1.6E-06	
Subsurface Soil (>0.5 ft)	IA-5	Arsenic	26/26	1.08E+01	1.7E-01	1.4E-03		1.7E-01	1.1E-06	8.8E-09	1.8E-10	1.1E-06	
Subsurface Soil (>0.5 ft)	IA-5	Uranium	4/26	1.28E+01	2.0E-02	7.8E-05		2.0E-02					
Subsurface Soil (>0.5 ft)	IA-5	Inorganics Pathway Total			1.9E-01	1.4E-03		1.9E-01	1.1E-06	8.8E-09	1.8E-10	1.1E-06	
Subsurface Soil (>0.5 ft)	IA-5	Pathway Total - Chemicals			1.9E-01	1.4E-03		1.9E-01	1.1E-06	8.8E-09	1.8E-10	1.1E-06	
Subsurface Soil (>0.5 ft)	IA-7	Nickel	12/12	2.28E+03	5.4E-01	6.6E-03		5.4E-01					
Subsurface Soil (>0.5 ft)	IA-7	Inorganics Pathway Total			5.4E-01	6.6E-03		5.4E-01					
Subsurface Soil (>0.5 ft)	IA-7	Pathway Total - Chemicals			5.4E-01	6.6E-03		5.4E-01					
Subsurface Soil (>0.5 ft)	IA-9	Arsenic	41/41	1.37E+01	2.1E-01	1.7E-03		2.2E-01	1.4E-06	1.1E-08	2.3E-10	1.4E-06	
Subsurface Soil (>0.5 ft)	IA-9	Thallium	7/61	1.06E+01	6.2E-02	1.0E-03		6.3E-02					
Subsurface Soil (>0.5 ft)	IA-9	Uranium	3/40	1.63E+01	2.6E-02	1.0E-04		2.6E-02					
Subsurface Soil (>0.5 ft)	IA-9	Inorganics Pathway Total			3.0E-01	2.9E-03		3.1E-01	1.4E-06	1.1E-08	2.3E-10	1.4E-06	
Subsurface Soil (>0.5 ft)	IA-9	Dieldrin	4/40	1.25E-01	1.2E-02	7.8E-04		1.3E-02	1.3E-07	8.9E-09	2.2E-12	1.4E-07	
Subsurface Soil (>0.5 ft)	IA-9	Organics Pathway Total			1.2E-02	7.8E-04		1.3E-02	1.3E-07	8.9E-09	2.2E-12	1.4E-07	
Subsurface Soil (>0.5 ft)	IA-9	Pathway Total - Chemicals			3.1E-01	3.7E-03		3.2E-01	1.5E-06	2.0E-08	2.3E-10	1.5E-06	
Subsurface Soil (>0.5 ft)	ROAD ROW	Arsenic	1/1	2.32E+01	3.6E-01	2.9E-03		3.7E-01	2.3E-06	1.9E-08	3.9E-10	2.4E-06	H

Attachment 14. Subsurface Soil Risks and Hazards for Chemicals by Property (page 2 of 2)

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Subsurface Soil (>0.5 ft)	ROAD ROW	Manganese	1/1	6.32E+03	6.5E-01	5.4E-02	3.4E-02	7.3E-01					H
Subsurface Soil (>0.5 ft)	ROAD ROW	Inorganics Pathway Total			1.0E+00	5.7E-02	3.4E-02	1.1E+00	2.3E-06	1.9E-08	3.9E-10	2.4E-06	H
Subsurface Soil (>0.5 ft)	ROAD ROW	MCPP	1/1	1.20E+02	5.6E-02	3.7E-03		6.0E-02					
Subsurface Soil (>0.5 ft)	ROAD ROW	Organics Pathway Total			5.6E-02	3.7E-03		6.0E-02					
Subsurface Soil (>0.5 ft)	ROAD ROW	Pathway Total - Chemicals			1.1E+00	6.0E-02	3.4E-02	1.2E+00	2.3E-06	1.9E-08	3.9E-10	2.4E-06	H
Subsurface Soil (>0.5 ft)	SLAPS	Arsenic	64/64	2.26E+01	3.5E-01	2.9E-03		3.6E-01	2.3E-06	1.8E-08	3.8E-10	2.3E-06	
Subsurface Soil (>0.5 ft)	SLAPS	Chromium	62/62	1.56E+02	3.7E-02	6.1E-03	4.2E-04	4.3E-02			7.1E-09	7.1E-09	
Subsurface Soil (>0.5 ft)	SLAPS	Nickel	65/65	4.91E+02	1.2E-01	1.4E-03		1.2E-01					
Subsurface Soil (>0.5 ft)	SLAPS	Uranium	10/61	2.03E+01	3.2E-02	1.2E-04		3.2E-02					
Subsurface Soil (>0.5 ft)	SLAPS	Inorganics Pathway Total			5.4E-01	1.1E-02	4.2E-04	5.5E-01	2.3E-06	1.8E-08	7.4E-09	2.3E-06	
Subsurface Soil (>0.5 ft)	SLAPS	1,2-Dichloroethene	2/38	4.33E-03	2.3E-06	9.4E-08		2.4E-06					
Subsurface Soil (>0.5 ft)	SLAPS	Dimethylbenzene	2/38	3.59E-03	4.7E-08	1.7E-09		4.9E-08					
Subsurface Soil (>0.5 ft)	SLAPS	Organics Pathway Total			2.3E-06	9.6E-08		2.4E-06					
Subsurface Soil (>0.5 ft)	SLAPS	Pathway Total - Chemicals			5.4E-01	1.1E-02	4.2E-04	5.5E-01	2.3E-06	1.8E-08	7.4E-09	2.3E-06	

HQ = Hazard Quotient
HI = Hazard Index
COPC = Contaminant of Potential Concern

[a] COPC codes:
H = COPC based on hazard result
R = COPC based on risk result

Attachment 15. Ground-Water Risks and Hazards for Non-radionuclides by Aggregates (page 1 of 3)

Analyte	Freq. Det.	Expos. Point Conc. (mg/L)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Industrial Worker											
HISS/DEEP											
Ammonia	3/3	1.25E+01									
Barium	3/3	8.62E-01	1E-01			1E-01					H
Manganese	3/3	8.48E-01	2E-01			2E-01					H
Thallium	1/3	2.80E-03	3E-01			3E-01					H
Uranium	1/3	7.86E-05	3E-04			3E-04					
Inorganics Pathway Total			6E-01			6E-01					H
MCPP	1/1	4.70E-01	5E+00			5E+00					H
Organics Pathway Total			5E+00			5E+00					H
Pathway Total - Chemicals			5E+00			5E+00					H
HISS/SHALLOW											
Ammonia	3/43	6.51E-01									
Arsenic	4/43	1.36E-02	4E-01			4E-01	7E-05			7E-05	H
Barium	43/43	2.60E-01	4E-02			4E-02					
Cadmium	4/43	2.27E-03	4E-02			4E-02					
Fluoride	19/41	4.71E-01	8E-02			8E-02					
Manganese	26/39	3.98E+00	8E-01			8E-01					H
Molybdenum	21/43	7.85E-03	2E-02			2E-02					
Nitrate	40/45	3.67E+02	2E+00			2E+00					H
Nitrite	3/24	4.64E-01	5E-02			5E-02					
Selenium	30/43	1.46E-01	3E-01			3E-01					H
Strontium	42/42	1.16E+00	2E-02			2E-02					
Uranium	19/45	7.39E-02	2E-01			2E-01					H
Vanadium	7/43	1.49E-02	2E-02			2E-02					
Inorganics Pathway Total			4E+00			4E+00	7E-05			7E-05	H
Chloroform	9/41	6.52E-03	6E-03			6E-03	1E-07			1E-07	
Chloromethane	4/41	5.00E-03					2E-07			2E-07	
Dimethylbenzene	3/41	5.09E-03	2E-05			2E-05					
Trichloroethene	7/41	1.38E-01	2E-01			2E-01	5E-06			5E-06	H
Organics Pathway Total			2E-01			2E-01	6E-06			6E-06	H
Pathway Total - Chemicals			5E+00			5E+00	8E-05			8E-05	H
SLAPS/DEEP											
Ammonia	43/49	4.04E+00									
Arsenic	38/48	6.76E-02	2E+00			2E+00	4E-04			4E-04	R,H
Barium	48/48	4.14E-01	6E-02			6E-02					

Attachment 15. Ground-Water Risks and Hazards for Non-radionuclides by Aggregates (page 2 of 3)

Analyte	Freq. Det.	Expos. Point Conc. (mg/L)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Boron	37/48	2.43E-01	3E-02			3E-02					
Chromium	21/48	4.62E-03	2E-02			2E-02					
Fluoride	22/46	4.35E-01	7E-02			7E-02					
Manganese	48/48	1.12E+00	2E-01			2E-01					H
Molybdenum	23/48	6.95E-03	1E-02			1E-02					
Nitrate	12/49	2.71E+00	2E-02			2E-02					
Thallium	3/47	2.11E-03	3E-01			3E-01					H
Uranium	15/49	1.05E-02	3E-02			3E-02					
Inorganics Pathway Total			3E+00			3E+00	4E-04			4E-04	R,H
Bis(2-ethylhexyl)phthalate	2/37	4.45E-03	2E-03			2E-03	2E-07			2E-07	
Organics Pathway Total			2E-03			2E-03	2E-07			2E-07	
Pathway Total - Chemicals			3E+00			3E+00	4E-04			4E-04	R,H
SLAPS/SHALLOW											
Ammonia	27/97	1.49E+00									
Arsenic	13/92	4.27E-03	1E-01			1E-01	2E-05			2E-05	H
Barium	92/92	2.80E-01	4E-02			4E-02					
Boron	58/92	1.28E-01	1E-02			1E-02					
Cadmium	15/92	1.10E-03	2E-02			2E-02					
Chromium	31/92	1.30E-02	4E-02			4E-02					
Fluoride	25/82	4.82E-01	8E-02			8E-02					
Manganese	76/87	9.60E-01	2E-01			2E-01					H
Molybdenum	27/92	7.20E-03	1E-02			1E-02					
Nickel	41/92	5.49E-02	3E-02			3E-02					
Nitrate	84/97	1.39E+02	9E-01			9E-01					H
Nitrite	6/64	5.39E-01	5E-02			5E-02					
Selenium	53/92	4.24E-01	8E-01			8E-01					H
Uranium	38/98	5.26E-01	2E+00			2E+00					H
Vanadium	28/92	7.92E-03	1E-02			1E-02					
Inorganics Pathway Total			4E+00			4E+00	2E-05			2E-05	H
1,2-Dichloroethene	16/85	6.74E-03	7E-03			7E-03					
Bis(2-ethylhexyl)phthalate	7/83	5.57E-03	3E-03			3E-03	3E-07			3E-07	
Trichloroethene	24/85	7.29E-02	1E-01			1E-01	3E-06			3E-06	H
Organics Pathway Total			1E-01			1E-01	3E-06			3E-06	H
Pathway Total - Chemicals			4E+00			4E+00	3E-05			3E-05	H
Resident											
HISS/DEEP											
Ammonia	3/3	1.25E+01									

Attachment 15. Ground-Water Risks and Hazards for Non-radionuclides by Aggregates (page 3 of 3)

Analyte	Freq. Det.	Expos. Point Conc. (mg/L)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Barium	3/3	8.62E-01	4E-01	1E-02		4E-01					H
Manganese	3/3	8.48E-01	6E-01	3E-02		6E-01					H
Thallium	1/3	2.80E-03	1E+00	1E-02		1E+00					H
Uranium	1/3	7.86E-05	8E-04	2E-06		8E-04					
Inorganics Pathway Total			2E+00	6E-02		2E+00					H
MCPP	1/1	4.70E-01	1E+01	5E-01		2E+01					H
Organics Pathway Total			1E+01	5E-01		2E+01					H
Pathway Total - Chemicals			2E+01	5E-01		2E+01					H
SLAPS/DEEP											
Ammonia	43/49	4.04E+00									
Arsenic	38/48	6.76E-02	7E+00	4E-02		7E+00	1E-03	8E-06		1E-03	R,H
Barium	48/48	4.14E-01	2E-01	6E-03		2E-01					H
Boron	37/48	2.43E-01	9E-02	2E-04		9E-02					
Chromium	21/48	4.62E-03	5E-02	6E-03		5E-02					
Fluoride	22/46	4.35E-01	2E-01	6E-04		2E-01					H
Manganese	48/48	1.12E+00	8E-01	5E-02		8E-01					H
Molybdenum	23/48	6.95E-03	4E-02	3E-04		4E-02					
Nitrate	12/49	2.71E+00	5E-02	3E-04		5E-02					
Thallium	3/47	2.11E-03	8E-01	1E-02		8E-01					H
Uranium	15/49	1.05E-02	1E-01	3E-04		1E-01					H
Inorganics Pathway Total			9E+00	1E-01		1E+01	1E-03	8E-06		1E-03	R,H
Bis(2-ethylhexyl)phthalate	2/37	4.45E-03	7E-03	2E-03		9E-03	8E-07	2E-07		1E-06	R
Organics Pathway Total			7E-03	2E-03		9E-03	8E-07	2E-07		1E-06	R
Pathway Total - Chemicals			9E+00	1E-01		1E+01	1E-03	8E-06		1E-03	R,H

HQ = Hazard Quotient
HI = Hazard Index
COPC = Contaminant of Potential Concern

[a] COPC codes:
H = COPC based on hazard result
R = COPC based on risk result

Attachment 16. Surface Water Risks and Hazards for Chemicals by Aggregates (page 1 of 2)

Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/L)	Dermal HQ	Inhal. HQ	Total HI	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Recreational/Trespasser										
Reach A	Arsenic	4/6	4.94E-03	1.4E-04		1.4E-04	7.9E-09		7.9E-09	
Reach A	Fluoride	7/9	1.12E+00							
Reach A	Molybdenum	7/7	5.00E-02	8.9E-05		8.9E-05				
Reach A	Nitrate	10/10	6.05E+01	2.6E-04		2.6E-04				
Reach A	Nitrite	9/9	7.07E-01	4.8E-05		4.8E-05				
Reach A	Selenium	6/6	5.65E-01	8.7E-04		8.7E-04				
Reach A	Uranium	31/32	4.66E-02	6.2E-05		6.2E-05				
Reach A	Inorganics Pathway Total			1.5E-03		1.5E-03	7.9E-09		7.9E-09	
Reach A	Bis(2-ethylhexyl)phthalate	1/6	6.25E-03	1.3E-04		1.3E-04	4.6E-09		4.6E-09	
Reach A	Dimethylbenzene	1/6	1.00E-03	1.8E-07		1.8E-07				
Reach A	Methylene chloride	4/6	5.10E-03	1.4E-06	8.4E-07	2.2E-06	7.9E-11	1.5E-10	2.3E-10	
Reach A	Tetrachloroethene	4/6	2.76E-03	3.5E-04	2.3E-06	3.5E-04	2.3E-08	1.0E-10	2.3E-08	
Reach A	Trichloroethene	4/6	7.70E-03	4.6E-04		4.6E-04	3.9E-09	8.4E-10	4.8E-09	
Reach A	Organics Pathway Total			9.4E-04	3.1E-06	9.4E-04	3.2E-08	1.1E-09	3.3E-08	
Reach A	Pathway Total - Chemicals			2.4E-03	3.1E-06	2.4E-03	4.0E-08	1.1E-09	4.1E-08	
Reach B	Molybdenum	2/3	2.80E-02	5.0E-05		5.0E-05				
Reach B	Uranium	24/26	1.55E-02	2.1E-05		2.1E-05				
Reach B	Inorganics Pathway Total			7.1E-05		7.1E-05				
Reach B	Acetone	2/3	1.79E-01	4.2E-06		4.2E-06				
Reach B	Organics Pathway Total			4.2E-06		4.2E-06				
Reach B	Pathway Total - Chemicals			7.5E-05		7.5E-05				
Resident/Child										
Reach A	Arsenic	4/6	4.94E-03	7.1E-04		7.1E-04	4.1E-08		4.1E-08	
Reach A	Fluoride	7/9	1.12E+00							
Reach A	Molybdenum	7/7	5.00E-02	4.6E-04		4.6E-04				
Reach A	Nitrate	10/10	6.05E+01	1.3E-03		1.3E-03				
Reach A	Nitrite	9/9	7.07E-01	2.5E-04		2.5E-04				
Reach A	Selenium	6/6	5.65E-01	4.5E-03		4.5E-03				
Reach A	Uranium	31/32	4.66E-02	3.2E-04		3.2E-04				
Reach A	Inorganics Pathway Total			7.6E-03		7.6E-03	4.1E-08		4.1E-08	
Reach A	Bis(2-ethylhexyl)phthalate	1/6	6.25E-03	6.7E-04		6.7E-04	2.4E-08		2.4E-08	
Reach A	Dimethylbenzene	1/6	1.00E-03	9.1E-07		9.1E-07				
Reach A	Methylene chloride	4/6	5.10E-03	7.1E-06	4.4E-06	1.1E-05	4.1E-10	7.9E-10	1.2E-09	
Reach A	Tetrachloroethene	4/6	2.76E-03	1.8E-03	1.2E-05	1.8E-03	1.2E-07	5.2E-10	1.2E-07	
Reach A	Trichloroethene	4/6	7.70E-03	2.4E-03		2.4E-03	2.0E-08	4.3E-09	2.5E-08	
Reach A	Organics Pathway Total			4.9E-03	1.6E-05	4.9E-03	1.7E-07	5.7E-09	1.7E-07	
Reach A	Pathway Total - Chemicals			1.2E-02	1.6E-05	1.3E-02	2.1E-07	5.7E-09	2.1E-07	
Reach B	Molybdenum	2/3	2.80E-02	2.6E-04		2.6E-04				
Reach B	Uranium	24/26	1.55E-02	1.1E-04		1.1E-04				
Reach B	Inorganics Pathway Total			3.7E-04		3.7E-04				
Reach B	Acetone	2/3	1.79E-01	2.2E-05		2.2E-05				
Reach B	Organics Pathway Total			2.2E-05		2.2E-05				
Reach B	Pathway Total - Chemicals			3.9E-04		3.9E-04				

HQ = Hazard Quotient
HI = Hazard Index
COPC = Contaminant of Potential Concern

Attachment 16. Surface Water Risks and Hazards for Chemicals by Aggregates (page 2 of 2)

Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/L)	Dermal HQ	Inhal. HQ	Total HI	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]

[a] No COPCs are identified for surface water exposures.

Attachment 17. Sediment Radiological Doses and Risks for each Data Grouping (page 1 of 1)

Data Aggregate	Isotope	Exposure Point Conc. (pCi/g)	RESIDENTIAL Dose Year=0.0	RESIDENTIAL Dose Year=1000	RESIDENTIAL Risk Year=0.0	RESIDENTIAL Risk Year=1000	INDUSTRIAL Dose Year=0.0	INDUSTRIAL Dose Year=1000	INDUSTRIAL Risk Year=0.0	INDUSTRIAL Risk Year=1000	CONSTRUCTION Dose Year=0.0	CONSTRUCTION Dose Year=1000	CONSTRUCTION Risk Year=0.0	CONSTRUCTION Risk Year=1000
HS Group 1	Ra-226	7.50E-01	2.7	0.0	4E-05	0E+00	0.9	0.0	1E-05	0E+00	1.8	0.0	1E-06	0E+00
HS Group 1	Th-230	6.65E+01	1.8	8.2	3E-05	1E-04	0.4	2.3	6E-06	3E-05	2.4	6.9	2E-07	3E-06
HS Group 1	Th-232	2.31E+00	0.3	10.6	1E-04	2E-04	0.1	3.3	3E-05	5E-05	0.4	7.4	5E-09	4E-06
HS Group 1	TOTAL		4.8	18.8	2E-04	3E-04	1.3	5.6	5E-05	8E-05	4.7	14.3	1E-06	7E-06
HS Group 2	Ra-226	2.55E+00	9.3	0.0	1E-04	0E+00	2.9	0.0	4E-05	0E+00	6.3	0.0	4E-06	0E+00
HS Group 2	Th-230	4.02E+01	1.1	5.0	2E-05	7E-05	0.2	1.4	4E-06	2E-05	1.5	4.2	9E-08	2E-06
HS Group 2	Th-232	8.86E-01	0.1	4.1	5E-05	7E-05	0.0	1.3	1E-05	2E-05	0.2	2.8	2E-09	2E-06
HS Group 2	TOTAL		10.5	9.1	2E-04	1E-04	3.2	2.7	5E-05	4E-05	7.9	7.0	4E-06	3E-06
Reach A	Ac-227	9.60E-02	0.1	0.0	3E-07	0E+00	0.0	0.0	1E-07	0E+00	0.1	0.0	2E-08	0E+00
Reach A	Pa-231	4.30E-02	0.0	0.0	9E-08	0E+00	0.0	0.0	2E-08	0E+00	0.0	0.0	6E-10	0E+00
Reach A	Ra-228	1.16E-01	0.2	0.0	2E-06	0E+00	0.1	0.0	8E-07	0E+00	0.2	0.0	8E-08	0E+00
Reach A	Th-228	2.12E-01	0.7	0.0	1E-06	0E+00	0.2	0.0	4E-07	0E+00	0.5	0.0	3E-07	0E+00
Reach A	Th-230	1.69E+01	0.5	2.1	7E-06	3E-05	0.1	0.6	2E-06	8E-06	0.6	1.8	4E-08	7E-07
Reach A	Th-232	1.60E-02	0.0	0.1	9E-07	1E-06	0.0	0.0	2E-07	3E-07	0.0	0.1	3E-11	3E-08
Reach A	U-235	6.90E-02	0.0	0.0	1E-07	0E+00	0.0	0.0	4E-08	0E+00	0.0	0.0	4E-09	0E+00
Reach A	TOTAL		1.6	2.2	1E-05	3E-05	0.4	0.6	3E-06	8E-06	1.4	1.8	4E-07	7E-07
Reach B	Ac-227	2.00E-01	0.3	0.0	7E-07	0E+00	0.1	0.0	2E-07	0E+00	0.3	0.0	5E-08	0E+00
Reach B	Pa-231	1.15E-01	0.1	0.0	2E-07	0E+00	0.0	0.0	6E-08	0E+00	0.1	0.0	1E-09	0E+00
Reach B	Ra-228	1.00E-01	0.2	0.0	2E-06	0E+00	0.1	0.0	7E-07	0E+00	0.1	0.0	7E-08	0E+00
Reach B	Th-228	4.38E-01	1.4	0.0	3E-06	0E+00	0.5	0.0	8E-07	0E+00	1.0	0.0	6E-07	0E+00
Reach B	Th-230	8.88E+00	0.2	1.1	4E-06	2E-05	0.0	0.3	8E-07	4E-06	0.3	0.9	2E-08	4E-07
Reach B	Th-232	5.26E-01	0.1	2.4	3E-05	4E-05	0.0	0.8	7E-06	1E-05	0.1	1.7	1E-09	9E-07
Reach B	U-235	1.51E-01	0.0	0.0	3E-07	0E+00	0.0	0.0	8E-08	0E+00	0.0	0.0	9E-09	0E+00
Reach B	TOTAL		2.3	3.5	4E-05	6E-05	0.7	1.1	1E-05	1E-05	1.9	2.6	7E-07	1E-06
Reach C	Ac-227	2.39E-01	0.3	0.0	8E-07	0E+00	0.1	0.0	2E-07	0E+00	0.3	0.0	6E-08	0E+00
Reach C	Ra-228	5.30E-02	0.1	0.0	1E-06	0E+00	0.0	0.0	3E-07	0E+00	0.1	0.0	4E-08	0E+00
Reach C	Th-228	5.98E-01	2.0	0.0	4E-06	0E+00	0.6	0.0	1E-06	0E+00	1.3	0.0	8E-07	0E+00
Reach C	Th-230	2.90E-01	0.0	0.0	1E-07	5E-07	0.0	0.0	3E-08	1E-07	0.0	0.0	7E-10	1E-08
Reach C	Th-232	6.66E-01	0.1	3.1	4E-05	5E-05	0.0	1.0	9E-06	1E-05	0.1	2.1	1E-09	1E-06
Reach C	U-235	2.57E-02	0.0	0.0	5E-08	0E+00	0.0	0.0	1E-08	0E+00	0.0	0.0	2E-09	0E+00
Reach C	TOTAL		2.5	3.1	4E-05	5E-05	0.8	1.0	1E-05	1E-05	1.8	2.2	9E-07	1E-06

			RECREATIONAL/TRESPASSER Dose Year=0.0	RECREATIONAL/TRESPASSER Dose Year=1000	RECREATIONAL/TRESPASSER Risk Year=0.0	RECREATIONAL/TRESPASSER Risk Year=1000	MAINTENANCE Dose Year=0.0	MAINTENANCE Dose Year=1000	MAINTENANCE Risk Year=0.0	MAINTENANCE Risk Year=1000	UTILITY[a] Dose Year=0.0	UTILITY[a] Dose Year=1000	UTILITY[a] Risk Year=0.0	UTILITY[a] Risk Year=1000
HS Group 1	Ra-226	7.50E-01	0.0	0.0	2E-07	0E+00	0.1	0.0	5E-07	0E+00	0.1	0.0	4E-08	0E+00
HS Group 1	Th-230	6.65E+01	0.0	0.1	5E-08	6E-07	0.2	0.6	2E-07	1E-06	0.1	0.3	6E-09	1E-07
HS Group 1	Th-232	2.31E+00	0.0	0.2	3E-07	9E-07	0.0	0.6	5E-07	2E-06	0.0	0.3	2E-10	2E-07
HS Group 1	TOTAL		0.1	0.3	6E-07	2E-06	0.4	1.1	1E-06	3E-06	0.2	0.6	5E-08	3E-07
HS Group 2	Ra-226	2.55E+00	0.2	0.0	8E-07	0E+00	0.5	0.0	2E-06	0E+00	0.3	0.0	1E-07	0E+00
HS Group 2	Th-230	4.02E+01	0.0	0.1	3E-08	4E-07	0.1	0.3	1E-07	8E-07	0.1	0.2	4E-09	6E-08
HS Group 2	Th-232	8.86E-01	0.0	0.1	1E-07	4E-07	0.0	0.2	2E-07	7E-07	0.0	0.1	8E-11	6E-08
HS Group 2	TOTAL		0.2	0.1	9E-07	7E-07	0.6	0.6	2E-06	2E-06	0.3	0.3	2E-07	1E-07
Reach A	Ac-227	9.60E-02	0.0	0.0	3E-09	0E+00	0.0	0.0	9E-09	0E+00	0.0	0.0	9E-10	0E+00
Reach A	Pa-231	4.30E-02	0.0	0.0	3E-10	0E+00	0.0	0.0	7E-10	0E+00	0.0	0.0	2E-11	0E+00
Reach A	Ra-228	1.16E-01	0.0	0.0	3E-08	0E+00	0.0	0.0	6E-08	0E+00	0.0	0.0	3E-09	0E+00
Reach A	Th-228	2.12E-01	0.0	0.0	2E-08	0E+00	0.0	0.0	5E-08	0E+00	0.0	0.0	1E-08	0E+00
Reach A	Th-230	1.69E+01	0.0	0.0	1E-08	1E-07	0.1	0.1	4E-08	3E-07	0.0	0.1	2E-09	3E-08
Reach A	Th-232	1.60E-02	0.0	0.0	2E-09	6E-09	0.0	0.0	3E-09	1E-08	0.0	0.0	1E-12	1E-09
Reach A	U-235	6.90E-02	0.0	0.0	9E-10	0E+00	0.0	0.0	2E-09	0E+00	0.0	0.0	2E-10	0E+00
Reach A	TOTAL		0.0	0.0	7E-08	2E-07	0.1	0.1	2E-07	3E-07	0.1	0.1	2E-08	3E-08
Reach B	Ac-227	2.00E-01	0.0	0.0	7E-09	0E+00	0.0	0.0	2E-08	0E+00	0.0	0.0	2E-09	0E+00
Reach B	Pa-231	1.15E-01	0.0	0.0	8E-10	0E+00	0.0	0.0	2E-09	0E+00	0.0	0.0	6E-11	0E+00
Reach B	Ra-228	1.00E-01	0.0	0.0	2E-08	0E+00	0.0	0.0	5E-08	0E+00	0.0	0.0	3E-09	0E+00
Reach B	Th-228	4.38E-01	0.0	0.0	4E-08	0E+00	0.1	0.0	1E-07	0E+00	0.0	0.0	2E-08	0E+00
Reach B	Th-230	8.88E+00	0.0	0.0	7E-09	8E-08	0.0	0.1	2E-08	2E-07	0.0	0.0	8E-10	1E-08
Reach B	Th-232	5.26E-01	0.0	0.0	7E-08	2E-07	0.0	0.1	1E-07	4E-07	0.0	0.1	5E-11	4E-08
Reach B	U-235	1.51E-01	0.0	0.0	2E-09	0E+00	0.0	0.0	4E-09	0E+00	0.0	0.0	4E-10	0E+00
Reach B	TOTAL		0.0	0.1	2E-07	3E-07	0.2	0.2	3E-07	6E-07	0.1	0.1	3E-08	5E-08
Reach C	Ac-227	2.39E-01	0.0	0.0	8E-09	0E+00	0.0	0.0	2E-08	0E+00	0.0	0.0	2E-09	0E+00
Reach C	Ra-228	5.30E-02	0.0	0.0	1E-08	0E+00	0.0	0.0	3E-08	0E+00	0.0	0.0	2E-09	0E+00
Reach C	Th-228	5.98E-01	0.0	0.0	6E-08	0E+00	0.1	0.0	1E-07	0E+00	0.1	0.0	3E-08	0E+00
Reach C	Th-230	2.90E-01	0.0	0.0	2E-10	3E-09	0.0	0.0	7E-10	6E-09	0.0	0.0	3E-11	5E-10
Reach C	Th-232	6.66E-01	0.0	0.1	9E-08	3E-07	0.0	0.2	1E-07	6E-07	0.0	0.1	6E-11	5E-08
Reach C	U-235	2.57E-02	0.0	0.0	3E-10	0E+00	0.0	0.0	7E-10	0E+00	0.0	0.0	6E-11	0E+00
Reach C	TOTAL		0.0	0.1	2E-07	3E-07	0.1	0.2	3E-07	6E-07	0.1	0.1	4E-08	5E-08

Doses less than 0.1 mrem/yr shown as 0.0.
All risk estimates rounded on one digit
HS calculations performed for two elevated areas (about 100 linear meters along the creek) in Reach A.

[a] Calculated as 4% of corresponding construction worker value based on occupancy.

Attachment 18. Sediment Risks and Hazards for Chemicals by Aggregates (page 1 of 4)

Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Industrial Worker												
Reach A	Selenium	5/8	4.12E+01	4.0E-03	1.0E-04		4.1E-03					
Reach A	Thallium	2/8	1.60E+00	9.8E-03	5.6E-04		1.0E-02					
Reach A	Inorganics Pathway Total			1.4E-02	6.6E-04		1.4E-02					
Reach A	Benz(a)anthracene	11/12	3.36E+00					4.3E-07	1.6E-07	1.2E-11	5.9E-07	
Reach A	Benzo(a)pyrene	11/12	3.01E+00					3.8E-06	1.4E-06	1.1E-10	5.3E-06	
Reach A	Benzo(b)fluoranthene	11/12	5.10E+00					6.5E-07	2.4E-07	1.9E-11	8.9E-07	
Reach A	Dibenz(a,h)anthracene	2/10	9.86E-01					1.3E-06	4.6E-07	3.6E-11	1.7E-06	
Reach A	Indeno(1,2,3-cd)pyrene	9/12	3.00E+00					3.8E-07	1.4E-07	1.1E-11	5.2E-07	
Reach A	Organics Pathway Total							6.6E-06	2.4E-06	1.9E-10	9.0E-06	
Reach A	Pathway Total - Chemicals			1.4E-02	6.6E-04		1.4E-02	6.6E-06	2.4E-06	1.9E-10	9.0E-06	
Reach B	Arsenic	5/6	2.06E+01	3.4E-02	9.3E-04		3.5E-02	5.4E-06	1.5E-07	3.6E-09	5.6E-06	
Reach B	Manganese	6/6	3.71E+03	3.9E-02	1.1E-02	8.5E-03	5.9E-02					
Reach B	Thallium	1/5	2.77E+00	1.7E-02	9.7E-04		1.8E-02					
Reach B	Inorganics Pathway Total			9.0E-02	1.3E-02	8.5E-03	1.1E-01	5.4E-06	1.5E-07	3.6E-09	5.6E-06	
Reach B	Benz(a)anthracene	6/6	4.00E+01					5.1E-06	1.9E-06	1.5E-10	7.0E-06	
Reach B	Benzo(a)pyrene	6/6	3.50E+01					4.5E-05	1.6E-05	1.3E-09	6.1E-05	
Reach B	Benzo(b)fluoranthene	5/6	3.00E+01					3.8E-06	1.4E-06	1.1E-10	5.2E-06	
Reach B	Benzo(k)fluoranthene	5/6	3.40E+01					4.3E-07	1.6E-07	1.2E-11	5.9E-07	
Reach B	Indeno(1,2,3-cd)pyrene	4/6	1.47E+01					1.9E-06	6.9E-07	5.3E-11	2.6E-06	
Reach B	Organics Pathway Total							5.6E-05	2.1E-05	1.6E-09	7.6E-05	
Reach B	Pathway Total - Chemicals			9.0E-02	1.3E-02	8.5E-03	1.1E-01	6.1E-05	2.1E-05	5.2E-09	8.2E-05	
Reach C	Arsenic	6/6	1.59E+01	2.6E-02	7.2E-04		2.7E-02	4.2E-06	1.2E-07	2.8E-09	4.3E-06	
Reach C	Thallium	3/6	4.92E+00	3.0E-02	1.7E-03		3.2E-02					
Reach C	Inorganics Pathway Total			5.6E-02	2.4E-03		5.8E-02	4.2E-06	1.2E-07	2.8E-09	4.3E-06	
Reach C	Pathway Total - Chemicals			5.6E-02	2.4E-03		5.8E-02	4.2E-06	1.2E-07	2.8E-09	4.3E-06	
Maintenance Worker												
Reach A	Selenium	5/8	4.12E+01	4.0E-03	3.8E-06		4.0E-03					
Reach A	Thallium	2/8	1.60E+00	9.8E-04	2.0E-06		9.8E-04					
Reach A	Inorganics Pathway Total			5.0E-03	5.8E-06		5.0E-03					
Reach A	Benz(a)anthracene	11/12	3.36E+00					1.1E-07	1.5E-09	7.9E-13	1.1E-07	
Reach A	Benzo(a)pyrene	11/12	3.01E+00					1.0E-06	1.4E-08	7.1E-12	1.0E-06	

Attachment 18. Sediment Risks and Hazards for Chemicals by Aggregates (page 2 of 4)

Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Reach A	Benzo(b)fluoranthene	11/12	5.10E+00					1.7E-07	2.3E-09	1.2E-12	1.7E-07	
Reach A	Dibenz(a,h)anthracene	2/10	9.86E-01					3.3E-07	4.4E-09	2.3E-12	3.4E-07	
Reach A	Indeno(1,2,3-cd)pyrene	9/12	3.00E+00					1.0E-07	1.4E-09	7.1E-13	1.0E-07	
Reach A	Organics Pathway Total							1.7E-06	2.3E-08	1.2E-11	1.8E-06	
Reach A	Pathway Total - Chemicals			5.0E-03	5.8E-06		5.0E-03	1.7E-06	2.3E-08	1.2E-11	1.8E-06	
Reach B	Arsenic	5/6	2.06E+01	3.4E-02	3.4E-05		3.4E-02	1.4E-06	1.4E-09	2.4E-10	1.4E-06	
Reach B	Manganese	6/6	3.71E+03	3.9E-02	4.1E-04	2.1E-03	4.2E-02					
Reach B	Thallium	1/5	2.77E+00	1.7E-03	3.5E-06		1.7E-03					
Reach B	Inorganics Pathway Total			7.5E-02	4.5E-04	2.1E-03	7.7E-02	1.4E-06	1.4E-09	2.4E-10	1.4E-06	
Reach B	Benz(a)anthracene	6/6	4.00E+01					1.3E-06	1.8E-08	9.4E-12	1.4E-06	
Reach B	Benzo(a)pyrene	6/6	3.50E+01					1.2E-05	1.6E-07	8.2E-11	1.2E-05	
Reach B	Benzo(b)fluoranthene	5/6	3.00E+01					1.0E-06	1.4E-08	7.1E-12	1.0E-06	
Reach B	Benzo(k)fluoranthene	5/6	3.40E+01					1.1E-07	1.5E-09	8.0E-13	1.2E-07	
Reach B	Indeno(1,2,3-cd)pyrene	4/6	1.47E+01					4.9E-07	6.6E-09	3.5E-12	5.0E-07	
Reach B	Organics Pathway Total							1.5E-05	2.0E-07	1.0E-10	1.5E-05	
Reach B	Pathway Total - Chemicals			7.5E-02	4.5E-04	2.1E-03	7.7E-02	1.6E-05	2.0E-07	3.4E-10	1.6E-05	
Reach C	Arsenic	6/6	1.59E+01	2.6E-02	2.6E-05		2.6E-02	1.1E-06	1.1E-09	1.8E-10	1.1E-06	
Reach C	Thallium	3/6	4.92E+00	3.0E-03	6.2E-06		3.0E-03					
Reach C	Inorganics Pathway Total			2.9E-02	3.2E-05		2.9E-02	1.1E-06	1.1E-09	1.8E-10	1.1E-06	
Reach C	Pathway Total - Chemicals			2.9E-02	3.2E-05		2.9E-02	1.1E-06	1.1E-09	1.8E-10	1.1E-06	
Recreational/Trespasser												
Reach A	Selenium	5/8	4.12E+01	5.9E-04	2.7E-05		6.1E-04					
Reach A	Thallium	2/8	1.60E+00	1.4E-03	1.5E-04		1.6E-03					
Reach A	Inorganics Pathway Total			2.0E-03	1.7E-04		2.2E-03					
Reach A	Benz(a)anthracene	11/12	3.36E+00					2.2E-08	1.5E-08	1.5E-13	3.7E-08	
Reach A	Benzo(a)pyrene	11/12	3.01E+00					2.0E-07	1.3E-07	1.3E-12	3.3E-07	
Reach A	Benzo(b)fluoranthene	11/12	5.10E+00					3.4E-08	2.2E-08	2.3E-13	5.7E-08	
Reach A	Dibenz(a,h)anthracene	2/10	9.86E-01					6.6E-08	4.3E-08	4.4E-13	1.1E-07	
Reach A	Indeno(1,2,3-cd)pyrene	9/12	3.00E+00					2.0E-08	1.3E-08	1.3E-13	3.3E-08	
Reach A	Organics Pathway Total							3.4E-07	2.3E-07	2.3E-12	5.7E-07	
Reach A	Pathway Total - Chemicals			2.0E-03	1.7E-04		2.2E-03	3.4E-07	2.3E-07	2.3E-12	5.7E-07	

Attachment 18. Sediment Risks and Hazards for Chemicals by Aggregates (page 3 of 4)

Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Reach B	Arsenic	5/6	2.06E+01	4.9E-03	2.4E-04		5.1E-03	2.8E-07	1.4E-08	4.4E-11	3.0E-07	
Reach B	Manganese	6/6	3.71E+03	5.7E-03	2.9E-03	2.9E-04	9.0E-03					
Reach B	Thallium	1/5	2.77E+00	2.5E-03	2.5E-04		2.7E-03					
Reach B	Inorganics Pathway Total			1.3E-02	3.4E-03	2.9E-04	1.7E-02	2.8E-07	1.4E-08	4.4E-11	3.0E-07	
Reach B	Benz(a)anthracene	6/6	4.00E+01					2.7E-07	1.8E-07	1.8E-12	4.4E-07	
Reach B	Benzo(a)pyrene	6/6	3.50E+01					2.3E-06	1.5E-06	1.6E-11	3.9E-06	
Reach B	Benzo(b)fluoranthene	5/6	3.00E+01					2.0E-07	1.3E-07	1.3E-12	3.3E-07	
Reach B	Benzo(k)fluoranthene	5/6	3.40E+01					2.3E-08	1.5E-08	1.5E-13	3.8E-08	
Reach B	Indeno(1,2,3-cd)pyrene	4/6	1.47E+01					9.8E-08	6.5E-08	6.5E-13	1.6E-07	
Reach B	Organics Pathway Total							2.9E-06	1.9E-06	1.9E-11	4.9E-06	
Reach B	Pathway Total - Chemicals			1.3E-02	3.4E-03	2.9E-04	1.7E-02	3.2E-06	1.9E-06	6.4E-11	5.2E-06	
Reach C	Arsenic	6/6	1.59E+01	3.8E-03	1.9E-04		4.0E-03	2.2E-07	1.1E-08	3.4E-11	2.3E-07	
Reach C	Thallium	3/6	4.92E+00	4.4E-03	4.5E-04		4.8E-03					
Reach C	Inorganics Pathway Total			8.2E-03	6.3E-04		8.8E-03	2.2E-07	1.1E-08	3.4E-11	2.3E-07	
Reach C	Pathway Total - Chemicals			8.2E-03	6.3E-04		8.8E-03	2.2E-07	1.1E-08	3.4E-11	2.3E-07	
Resident												
Reach A	Selenium	5/8	4.12E+01	1.5E-02	1.2E-04		1.5E-02					
Reach A	Thallium	2/8	1.60E+00	3.7E-02	6.2E-04		3.8E-02					
Reach A	Inorganics Pathway Total			5.3E-02	7.4E-04		5.3E-02					
Reach A	Benz(a)anthracene	11/12	3.36E+00					2.0E-06	2.1E-07	4.7E-11	2.2E-06	
Reach A	Benzo(a)pyrene	11/12	3.01E+00					1.8E-05	1.9E-06	4.2E-10	1.9E-05	
Reach A	Benzo(b)fluoranthene	11/12	5.10E+00					3.0E-06	3.2E-07	7.2E-11	3.3E-06	
Reach A	Dibenz(a,h)anthracene	2/10	9.86E-01					5.7E-06	6.2E-07	1.4E-10	6.4E-06	
Reach A	Indeno(1,2,3-cd)pyrene	9/12	3.00E+00					1.7E-06	1.9E-07	4.2E-11	1.9E-06	
Reach A	Organics Pathway Total							3.0E-05	3.2E-06	7.2E-10	3.3E-05	
Reach A	Pathway Total - Chemicals			5.3E-02	7.4E-04		5.3E-02	3.0E-05	3.2E-06	7.2E-10	3.3E-05	
Reach B	Arsenic	5/6	2.06E+01	1.3E-01	1.0E-03		1.3E-01	2.5E-05	2.0E-07	1.4E-08	2.5E-05	R
Reach B	Manganese	6/6	3.71E+03	1.5E-01	1.3E-02	2.7E-02	1.9E-01					
Reach B	Thallium	1/5	2.77E+00	6.5E-02	1.1E-03		6.6E-02					
Reach B	Inorganics Pathway Total			3.4E-01	1.5E-02	2.7E-02	3.8E-01	2.5E-05	2.0E-07	1.4E-08	2.5E-05	R
Reach B	Benz(a)anthracene	6/6	4.00E+01					2.3E-05	2.5E-06	5.6E-10	2.6E-05	R
Reach B	Benzo(a)pyrene	6/6	3.50E+01					2.0E-04	2.2E-05	4.9E-09	2.3E-04	R

Attachment 18. Sediment Risks and Hazards for Chemicals by Aggregates (page 4 of 4)

Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Reach B	Benzo(b)fluoranthene	5/6	3.00E+01					1.7E-05	1.9E-06	4.2E-10	1.9E-05	R
Reach B	Benzo(k)fluoranthene	5/6	3.40E+01					2.0E-06	2.1E-07	4.8E-11	2.2E-06	R
Reach B	Indeno(1,2,3-cd)pyrene	4/6	1.47E+01					8.6E-06	9.3E-07	2.1E-10	9.5E-06	R
Reach B	Organics Pathway Total							2.6E-04	2.8E-05	6.2E-09	2.8E-04	R
Reach B	Pathway Total - Chemicals			3.4E-01	1.5E-02	2.7E-02	3.8E-01	2.8E-04	2.8E-05	2.0E-08	3.1E-04	R
Reach C	Arsenic	6/6	1.59E+01	9.9E-02	8.1E-04		1.0E-01	1.9E-05	1.6E-07	1.1E-08	1.9E-05	
Reach C	Thallium	3/6	4.92E+00	1.1E-01	1.9E-03		1.2E-01					
Reach C	Inorganics Pathway Total			2.1E-01	2.7E-03		2.2E-01	1.9E-05	1.6E-07	1.1E-08	1.9E-05	
Reach C	Pathway Total - Chemicals			2.1E-01	2.7E-03		2.2E-01	1.9E-05	1.6E-07	1.1E-08	1.9E-05	

HQ = Hazard Quotient
HI = Hazard Index
COPC = Contaminant of Potential Concern

[a] COPC codes:
H = COPC based on hazard result
R = COPC based on risk result

Attachment 19. Land Use and Removal Criteria by Property (Page 1 of 3)

Property ID [a]	Current Receptor	Future Receptor	Remediation Status	Alternative 2 Criteria [b]	Alternative 3 Criteria [b]	Alternative 5 Criteria [b]	Alternative 6 Criteria [b]	Removal Required [c]
VP-1	Industrial	Industrial		A	A	A	A	No
VP-1(C)	Industrial	Industrial		A	A	A	A	Yes
VP-1(L)	Industrial	Industrial		A	A	A	A	No
10K530076, north of VP-1(L)	Industrial	Industrial		A	A	A	A	No
10K530087, west of VP-1(L)	Industrial	Industrial		A	A	A	A	Yes
VP-2	Industrial	Industrial		A	A	A	A	No
VP-2(C)	Industrial	Industrial		A	A	A	A	Yes
VP-2(L)	Industrial	Industrial	Removal Action	A	A	A	A	Yes
VP-3	Industrial	Industrial		A	A	A	A	No
VP-3(C)	Industrial	Industrial		A	A	A	A	Yes
VP-3(L)	Industrial	Industrial	Removal Action	A	A	A	A	Yes
10K520165, southeast of VP-3(L)	Industrial	Industrial		A	A	A	A	No
VP-4	Industrial	Industrial		A	A	A	A	No
VP-4(C)	Industrial	Industrial		A	A	A	A	Yes
VP-4(L)	Industrial	Industrial	Removal Action	A	A	A	A	Yes
VP-5	Industrial	Industrial		A	A	A	A	No
VP-5(C)	Industrial	Industrial		A	A	A	A	Yes
VP-5(L)	Industrial	Industrial	Removal Action	A	A	A	A	No
VP-6	Industrial	Industrial		A	A	A	A	No
VP-6(C)	Industrial	Industrial		A	A	A	A	No
VP-6(L)	Industrial	Industrial	Removal Action	A	A	A	A	Yes
VP-7	Industrial	Industrial		A	A	A	A	Yes
VP-7(C)	Industrial	Industrial		A	A	A	A	No
VP-8	Industrial	Industrial		A	A	A	A	No
VP-8(C)	Industrial	Industrial		A	A	A	A	Yes
VP-9	Industrial	Industrial		A	A	A	A	No
VP-9(C)	Industrial	Industrial		A	A	A	A	No
VP-10	Industrial	Industrial		A	A	A	A	No
VP-10(C)	Industrial	Industrial		A	A	A	A	No
VP-11	Industrial	Industrial		A	A	A	A	Yes
VP-12	Industrial	Industrial		A	A	A	A	Yes
VP-13	Industrial	Industrial		A	A	A	A	Yes
VP-14	Industrial	Industrial		A	A	A	A	No
VP-14(A)	Utility	Utility		A	A	A	A	No
VP-15	Industrial	Industrial		A	A	A	A	Yes
VP-16	Industrial	Industrial		A	A	A	A	No
VP-17	Industrial	Industrial		A	A	A	A	No
VP-18	Industrial	Industrial		A	A	A	A	No
VP-19	Residential	Residential	Removal Action	A	A	A	A	No
VP-20	Residential	Residential	Removal Action	A	A	A	A	No
VP-20(A)	Industrial	Industrial		A	A	A	A	No
VP-21	Industrial	Industrial	Removal Action	A	A	A	A	Yes
VP-22	Industrial	Industrial	Removal Action	A	A	A	A	Yes
VP-23	Industrial	Industrial	Removal Action	A	A	A	A	Yes
10K240182, north of VP-23	Industrial	Industrial		A	A	A	A	No
VP-24	Industrial	Industrial	Removal Action	A	A	A	A	No
VP-25	Industrial	Industrial		A	A	A	A	No
VP-26	Industrial	Industrial		A	A	A	A	No
VP-27	Industrial	Industrial		A	A	A	A	No
10K240207, west of VP-27	Industrial	Industrial		A	A	A	A	No

Attachment 19. Land Use and Removal Criteria by Property (Page 3 of 3)

Property ID [a]	Current Receptor	Future Receptor	Remediation Status	Alternative 2 Criteria [b]	Alternative 3 Criteria [b]	Alternative 5 Criteria [b]	Alternative 6 Criteria [b]	Removal Required [c]
IA-5	Construction	Industrial	Partial Removal	B	B	A	A	Yes
IA-6	Construction	Industrial	Removal Action	B	B	A	A	Yes
IA-7	Construction	Industrial	Removal Action	B	A	A	A	Yes
IA-8	Utility	Utility	Partial Removal	A	A	A	A	Yes
IA-9	Construction	Recreational	Partial Removal	A	A	A	A	Yes
IA-10	Recreational	Recreational		A	A	A	A	Yes
IA-11	Industrial	Industrial		A	A	A	A	Yes
IA-12	Industrial	Industrial		A	A	A	A	Yes
IA-13	Industrial	Industrial		A	A	A	A	Yes
Road, bridges and railroads	Utility	Utility		C	C	C	A	Yes
10K620412, north of Latty east	Industrial	Industrial		A	A	A	A	No
11K630221, NE of McDonnell rail siding	Industrial	Industrial		A	A	A	A	No
10K620452, south of Latty East	Industrial	Industrial		A	A	A	A	No
11L520011, airport south of IA-13	Industrial	Industrial		A	A	A	A	No

[a] All properties designated into the FUSRAP site and any additional property for which analytical data are available.

[b] A = Ra/Th/U to 5/14/50 pCi/g above background in surface soils, 15/15/50 pCi/g above background in subsurface soils, and 15/43/150 for sediments below the mean water gradient of Coldwater Creek.
B = Ra/Th/U to 5/14/50 pCi/g above background in surface soils and 25/70/250 pCi/g above background in subsurface soils.
C = Soils under roads, bridges, railroads, and other permanent structures, are inaccessible and will not be remediated as part of this response action.
It is assumed that both radionuclides and non-radionuclides will be remediated to satisfy CERCLA risk requirements.

[c] For properties where removal is required the extent of excavation could vary depending on the criteria applied. No removals are required under Alternative 1 (No Further Action) and Alternative 4 (Institutional Controls).

APPENDIX E

POST REMOVAL ACTION DATA

POST REMEDIAL ACTION DATA

The information presented in Appendix D and Section 2.3.2 of the FS is used to narrow down the total list of chemicals in the site database into a final list of contaminants of potential concern (COPCs). Appendix D uses screening techniques to eliminate chemicals below background, carcinogenic and non-carcinogenic screening levels, etc. to eventually produce a list of risk-related COPCs. The screening does include an evaluation to determine which of the COPCs are related to Manhattan Engineer District or Atomic Energy Commission (MED/EAC) activities. Table E-1 lists those chemicals that are identified as COPCs by the Appendix D assessment. Section 2.3.2 looks at the uranium process to identify major and minor constituents found in the ore or related process materials. The conclusion presented in that section is that the removal of radiological contaminants would likely remove non-radiological COPCs, and that it is conservative to assume that all of the COPCs identified in the Appendix D are MED/AEC-related. The purpose of this appendix is to present non-radiological post-remedial action data collected in the St. Louis North County Site for comparison to the conclusions presented in Appendix D and Section 2.3.2.

Table E-2 shows the initial data screens on post-remedial action data. These screens include screen against background, a screen against Environmental Protection Agency (EPA) Region IX preliminary remediation goals (PRGs), and a screen to eliminate essential nutrient and infrequently detected chemicals. The screening approach is identical to the approach used in Appendix D to identify potential chemicals of concern (PCOCs). Any chemical that passes through these screens is assumed to be a PCOC and is included in a site-specific risk calculation.

Table E-3 shows the results of the site-specific risk calculation for those PCOCs identified in post-remedial action data. If the total risk for a specified receptor (e.g., resident) and medium (e.g., soil) exceeds 10^{-4}, those individual PCOCs with a risk greater than 10^{-6} may be identified as carcinogenic COPCs for the site. If the total hazard for a specified receptor (e.g., resident) and medium (e.g., soil) exceeds 1.0, those individual PCOCs with a hazard greater than 0.1 may be identified as non-carcinogenic COPCs for the site. The approach for calculating COPCs is identical to the approach used in Appendix D.

The data screens used in this appendix are not constrained by the results presented in Appendix D or Section 2.3.2 of the FS. That is, the data screens and risk calculations are not limited to the chemicals listed in Tables E-1 or the major and minor constituents listed in Section 2.3.2. All chemicals in the post-remedial action data set are considered equally. Even with this conservative approach, the results demonstrate that no COPCs are identified (far right column of Table E-3) indicating that either there are no non-radiological COPCs at the site or the non-radiological COPCs were remediated with the radionuclides.

Table E-1. North County Site Contaminants of Potential Concern (COPCs)

Soil		Sediment		Ground Water [a]	Surface Water
SLAPS and Contiguous Areas[b, d]	Radionuclides [c], antimony, arsenic, barium, cadmium, chromium, molybdenum, nickel, selenium, thallium, uranium, and vanadium	Coldwater Creek	Radionuclides [c]	None	None
HISS/Futura and Latty Avenue VPs 2L and 10k530087	Radionuclides [c], antimony, arsenic, barium, cadmium, molybdenum, nickel, selenium, thallium, and vanadium				
Haul Road Properties and Remaining VPs	Radionuclides [c]				
Coldwater Creek (within banks)	Radionuclides [c]				

[a] COPCs identified in HZ-A. However, no COCs identified because HZ-A is not a source of potable drinking water.
[b] IA-1 through IA-13
[c] Radionuclides in the uranium, thorium, and actinium series
[d] COCs are applicable only for soil within IAs 2 and 10 as there are no identified COCs for other areas.

Table E-2. PCOC Screens

Data Grouping	Aggregate	Analyte	Freq. Det.	Units	Min. Non-det. Conc.	Max. Non-det. Conc.	Min. Det. Conc.	Max. Det. Conc.	Mean Conc.	Dist. [a]	UCL_{95}	Expos. Conc. [b]		Background Criteria	Freq. Det. Above Bkgd.	Region IX Resid. Soil PRG [c]	PCOC	Type PCOC [d]	Justification [e]
Soil - All Depths	VP-56	Aluminum	16/16	mg/kg			7240	15200	9550	L	10600	10600	u	14700	1/16	7.5E+03	Y	Qual.	
Soil - All Depths	VP-56	Arsenic	16/16	mg/kg			6.7	10.1	8.23	L	8.68	8.68	u	18	0/16	3.8E-01	N		Below Background
Soil - All Depths	VP-56	Barium	16/16	mg/kg			129	188	164	N	171	171	u	279	0/16	5.2E+02	N		Below Background
Soil - All Depths	VP-56	Beryllium	6/16	mg/kg	0.305	0.36	0.62	0.79	0.459	D	0.54	0.54	u	0.83	0/16	1.5E+01	N		Below Background
Soil - All Depths	VP-56	Boron	16/16	mg/kg			5.7	10.6	7.13	L	7.74	7.74	u	9.9	1/16	4.9E+02	N		Max. detect < PRG
Soil - All Depths	VP-56	Cadmium	1/16	mg/kg	0.15	0.17	0.3	0.3	0.166	D	0.182	0.182	u	0.62	0/16	3.7E+00	N		Below Background
Soil - All Depths	VP-56	Calcium	16/16	mg/kg			2170	30300	8960	L	14800	14800	u	28900	1/16		N		Essential Nutrient (low conc.)
Soil - All Depths	VP-56	Chromium	16/16	mg/kg			11.2	17.6	13.6	L	14.6	14.6	u	17.3	1/16	3.0E+01	N		Max. detect < PRG
Soil - All Depths	VP-56	Cobalt	16/16	mg/kg			5.9	16.7	8.69	X	9.76	9.76	u	31.7	0/16	3.3E+02	N		Below Background
Soil - All Depths	VP-56	Copper	16/16	mg/kg			11.8	25.2	15.1	L	16.7	16.7	u	19.4	1/16	2.8E+02	N		Max. detect < PRG
Soil - All Depths	VP-56	Iron	16/16	mg/kg			12700	21300	15800	L	17000	17000	u	26600	0/16	2.2E+03	N		Below Background
Soil - All Depths	VP-56	Lead	16/16	mg/kg			12.6	114	34.7	L	54.1	54.1	u	79.7	2/16	4.0E+01	Y	Qual.	
Soil - All Depths	VP-56	Lithium	16/16	mg/kg			4.3	8.8	5.44	X	6	6	u	8.1	1/16	1.5E+02	N		Max. detect < PRG
Soil - All Depths	VP-56	Magnesium	16/16	mg/kg			2030	12600	3680	X	4760	4760	u	18400	0/16		N		Below Background
Soil - All Depths	VP-56	Manganese	16/16	mg/kg			498	1280	724	L	829	829	u	2830	0/16	3.1E+02	N		Below Background
Soil - All Depths	VP-56	Molybdenum	11/16	mg/kg	0.155	0.5	0.46	1.5	0.737	X	0.924	0.924	u	22.7	0/16	3.7E+01	N		Below Background
Soil - All Depths	VP-56	Nickel	16/16	mg/kg			14	25.5	18.5	L	19.9	19.9	u	33.9	0/16	1.5E+02	N		Below Background
Soil - All Depths	VP-56	Potassium	16/16	mg/kg			475	1300	883	L	1020	1020	u	1140	3/16		N		Essential Nutrient (low conc.)
Soil - All Depths	VP-56	Selenium	6/16	mg/kg	0.125	0.43	0.25	0.54	0.257	D	0.313	0.313	u	0.55	0/16	3.7E+01	N		Below Background
Soil - All Depths	VP-56	Sodium	16/16	mg/kg			63.1	1250	341	X	511	511	u	235	5/16		N		Essential Nutrient (low conc.)
Soil - All Depths	VP-56	Strontium	16/16	mg/kg			14.1	40	20	X	23	23	u	26	2/16	4.5E+03	N		Max. detect < PRG
Soil - All Depths	VP-56	Thallium	13/16	mg/kg	0.245	0.395	0.53	1.3	0.754	N	0.89	0.89	u	0	13/16	6.0E-01	Y	Quant.	
Soil - All Depths	VP-56	Titanium	16/16	mg/kg			135	333	200	L	231	231	u	269	3/16		Y	Qual.	
Soil - All Depths	VP-56	Vanadium	16/16	mg/kg			17.8	33.1	22.9	L	24.7	24.7	u	31	1/16	5.2E+01	N		Max. detect < PRG
Soil - All Depths	VP-56	Zinc	16/16	mg/kg			43.5	120	56.2	X	64.4	64.4	u	278	0/16	2.2E+03	N		Below Background
Soil - All Depths	VP-56	beta-BHC	1/16	mg/kg	0.00095	0.0011	0.0023	0.0023	0.00109	D	0.00124	0.00124	u	0	1/16	3.0E-01	N		Max. detect < PRG
Soil - All Depths	VP-56	Anthracene	3/16	mg/kg	0.19	0.21	0.023	0.048	0.167	D	0.196	0.048	m	0.031	2/16	1.4E+03	N		Max. detect < PRG
Soil - All Depths	VP-56	Benz(a)anthracene	8/16	mg/kg	0.19	0.205	0.02	0.24	0.155	X	0.189	0.189	u	0.3	0/16	5.6E-01	N		Below Background
Soil - All Depths	VP-56	Benzo(a)pyrene	5/16	mg/kg	0.19	0.205	0.055	0.28	0.196	D	0.216	0.216	u	0.34	0/16	5.6E-02	N		Below Background
Soil - All Depths	VP-56	Benzo(b)fluoranthene	6/16	mg/kg	0.19	0.205	0.032	0.24	0.179	D	0.204	0.204	u	0.31	0/16	5.6E-01	N		Below Background
Soil - All Depths	VP-56	Benzo(ghi)perylene	5/16	mg/kg	0.19	0.205	0.085	0.43	0.224	D	0.259	0.259	u	0.39	1/16		Y	Qual.	
Soil - All Depths	VP-56	Benzo(k)fluoranthene	6/16	mg/kg	0.19	0.205	0.029	0.24	0.175	D	0.201	0.201	u	0.29	0/16	5.6E+00	N		Below Background
Soil - All Depths	VP-56	Bis(2-ethylhexyl)phthalate	12/16	mg/kg	0.19	0.2	0.021	0.11	0.0922	L	0.148	0.11	m	0.18	0/16	3.2E+01	N		Below Background
Soil - All Depths	VP-56	Carbazole	1/16	mg/kg	0.19	0.215	0.019	0.019	0.188	D	0.208	0.019	m	0	1/16	2.2E+01	N		Max. detect < PRG
Soil - All Depths	VP-56	Chrysene	9/16	mg/kg	0.19	0.205	0.026	0.29	0.16	X	0.199	0.199	u	0.57	0/16	5.6E+01	N		Below Background
Soil - All Depths	VP-56	Di-n-butyl phthalate	6/16	mg/kg	0.19	0.215	0.02	0.029	0.134	D	0.173	0.029	m	0	6/16	5.5E+02	N		Max. detect < PRG
Soil - All Depths	VP-56	Fluoranthene	10/16	mg/kg	0.19	0.205	0.028	0.48	0.184	L	0.36	0.36	u	0.7	0/16	2.0E+02	N		Below Background
Soil - All Depths	VP-56	Indeno(1,2,3-cd)pyrene	6/16	mg/kg	0.19	0.205	0.022	0.39	0.205	D	0.242	0.242	u	0.35	1/16	5.6E-01	N		Max. detect < PRG
Soil - All Depths	VP-56	Phenanthrene	7/16	mg/kg	0.19	0.205	0.02	0.3	0.161	D	0.197	0.197	u	0.28	1/16		Y	Qual.	
Soil - All Depths	VP-56	Pyrene	10/16	mg/kg	0.19	0.205	0.039	0.65	0.215	L	0.401	0.401	u	0.66	0/16	1.5E+02	N		Below Background
Soil - All Depths	VP-56	2-Butanone	1/16	mg/kg	0.0055	0.0065	0.006	0.006	0.00594	D	0.00607	0.006	m	0.023	0/16	6.9E+02	N		Below Background
Soil - All Depths	VP-56	Dimethylbenzene	6/16	mg/kg	0.003	0.003	0.002	0.003	0.00294	D	0.00305	0.003	m	0	6/16		Y	Quant.	
Soil - All Depths	VP-56	Toluene	6/16	mg/kg	0.003	0.003	0.006	0.016	0.006	D	0.00799	0.00799	u	0.11	0/16	5.2E+02	N		Below Background
Soil - All Depths	VP-56	Trichloroethene	1/16	mg/kg	0.003	0.003	0.001	0.001	0.00288	D	0.00309	0.001	m	0	1/16	2.7E+00	N		Max. detect < PRG

[a] Distribution flags:

D = Not determined because fewer than 5 detects or < 50% detects; t-statistic used in calculations of UCL_{95}.

L = Lognormal; H-statistic used in calculations of UCL_{95}.

N = Normal; t-statistic used in calculations of UCL_{95}.

X = Neither normal nor lognormal; t-statistic used in calculations of UCL_{95}.

Z = Contains concentrations that are negative and/or zero; t-statistic used in calculations of UCL_{95}.

[b] Basis for determining the exposure concentration:

m = maximum detected concentration.

u = 95% upper confidence limit on the mean concentration.

[c] EPA Region IX residential soil PRG, based on a risk level of 10^{-6} or a hazard level of 0.1 (note that Region IX noncarcinogenic PRGs are provided for a hazard level of 1.0; these values have been adjusted to a hazard level of 0.1 for this screening).

[d] Based on the lack of available toxicity information, some PCOCs were evaluated qualitatively;

Qual. = Qualitative

Quant. = Quantitative.

[e] Justification for eliminating the analyte from the PCOC list.

Table E-3. Identification of COPCs

Media Group	Aggregate	Analyte	Freq. Det.	Expos. Point Conc. (mg/kg)	Ingest. HQ	Dermal HQ	Inhal. HQ	Total HI	Ingest. Risk	Dermal Risk	Inhal. Risk	Total Risk	COPC[a]
Construction Worker													
Soil - All Depths	VP-56	Thallium	13/16	8.90E-01	5.2E-03	8.7E-05		5.3E-03					
Soil - All Depths	VP-56	Inorganics Pathway Total			5.2E-03	8.7E-05		5.3E-03					
Soil - All Depths	VP-56	Dimethylbenzene	6/16	3.00E-03	3.9E-08	1.4E-09		4.1E-08					
Soil - All Depths	VP-56	Organics Pathway Total			3.9E-08	1.4E-09		4.1E-08					
Soil - All Depths	VP-56	Pathway Total - Chemicals			5.2E-03	8.7E-05		5.3E-03					
Industrial Worker													
Soil - All Depths	VP-56	Thallium	13/16	8.90E-01	5.4E-03	3.1E-04		5.8E-03					
Soil - All Depths	VP-56	Inorganics Pathway Total			5.4E-03	3.1E-04		5.8E-03					
Soil - All Depths	VP-56	Dimethylbenzene	6/16	3.00E-03	7.3E-10	9.1E-11		8.2E-10					
Soil - All Depths	VP-56	Organics Pathway Total			7.3E-10	9.1E-11		8.2E-10					
Soil - All Depths	VP-56	Pathway Total - Chemicals			5.4E-03	3.1E-04		5.8E-03					
Maintenance Worker													
Soil - All Depths	VP-56	Thallium	13/16	8.90E-01	5.4E-04	1.1E-06		5.4E-04					
Soil - All Depths	VP-56	Inorganics Pathway Total			5.4E-04	1.1E-06		5.4E-04					
Soil - All Depths	VP-56	Dimethylbenzene	6/16	3.00E-03	4.1E-09	1.9E-11		4.1E-09					
Soil - All Depths	VP-56	Organics Pathway Total			4.1E-09	1.9E-11		4.1E-09					
Soil - All Depths	VP-56	Pathway Total - Chemicals			5.4E-04	1.1E-06		5.4E-04					
Recreational/Trespasser													
Soil - All Depths	VP-56	Thallium	13/16	8.90E-01	7.9E-04	8.1E-05		8.7E-04					
Soil - All Depths	VP-56	Inorganics Pathway Total			7.9E-04	8.1E-05		8.7E-04					
Soil - All Depths	VP-56	Dimethylbenzene	6/16	3.00E-03	1.1E-10	2.4E-11		1.3E-10					
Soil - All Depths	VP-56	Organics Pathway Total			1.1E-10	2.4E-11		1.3E-10					
Soil - All Depths	VP-56	Pathway Total - Chemicals			7.9E-04	8.1E-05		8.7E-04					
Residential													
Soil - All Depths	VP-56	Thallium	13/16	8.90E-01	2.1E-02	3.5E-04		2.1E-02					
Soil - All Depths	VP-56	Inorganics Pathway Total			2.1E-02	3.5E-04		2.1E-02					
Soil - All Depths	VP-56	Dimethylbenzene	6/16	3.00E-03	2.8E-09	1.0E-10		2.9E-09					
Soil - All Depths	VP-56	Organics Pathway Total			2.8E-09	1.0E-10		2.9E-09					
Soil - All Depths	VP-56	Pathway Total - Chemicals			2.1E-02	3.5E-04		2.1E-02					

HQ = Hazard Quotient
HI = Hazard Index
COPC = Contaminant of Potential Concern

[a] COPC codes:
H = COPC based on hazard result
R = COPC based on risk result