APP-015-T

United States Nuclear Regulatory Commission Official Hearing Exhibit

In the Matter of: POWERTECH USA, INC. (Dewey-Burdock In Situ Uranium Recovery Facility)

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POWERTECH (USA) INC.

Dewey-Burdock Project
Application for NRC Uranium Recovery License
Fall River and Custer Counties, South Dakota
Technical Report

Appendices
Volume IV
Appendix 2.8-I – 3.1-A

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Prepared for

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POWERTECH (USA) INC.

Dewey-Burdock Project
Application for NRC
Uranium Recovery License
Fall River and Custer Counties
South Dakota
Technical Report

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POWERTECH (USA) INC.

APPENDIX 2.8-I

COMPILED HABITAT DATA FORMS

SAMPLE COLLECTION FORM - STREAMS

Site ID	BVC01	Date	4/15/2008

Water Chemistry		
Sample ID	Transect	Comments
		NA - Sampled by Respec

Reach-wide Benthos Sample		
Sample ID	No. of Jars	Comment
BVC01HF	1	High flow sampling. Composit sample from 11 transects. Midge hatch in progress.

Transect		A		B		C		D		E		F		G		H		I		J		K	
Substrate	Channel	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan
Fine/Sand	Pool		P	F	P							F	P	F	P							F	P
Gravel	Glide								G		G										G		
Coarse	Riffle	C				C	R	C		C						C	R	C	R	C			
other	Run																						

Transect		A	B	C	D	E	F	G	H	I	J	K
Sample Location	Left											
	Right											
	Center											

Substrate Size Classes
Fine/Sand - ladybug or smaller (<2mm)
Gravel - ladybug to tennis ball (2 to 64mm)
Coarse - tennis ball to car sized (64 to 4000mm)
Other - bedrock, hardpan, wood etc

SAMPLE COLLECTION FORM - STREAMS

Site ID	BVC04	Date	4/14/2008

Water Chemistry		
Sample ID	Transect	Comments
		NA - Sampled by Respec

Reach-wide Benthos Sample		
Sample ID	No. of Jars	Comment
BVC04HF	2	Spring sampling. Composit sample from 11 transects. Midge hatch in progress.

Transect		A		B		C		D		E		F		G		H		I		J		K	
Substrate	Channel	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan
Fine/Sand	Pool							F	P	F	P	F	P	F	P			F	P	F	P	F	P
Gravel	Glide	G		G		G																	
Coarse	Riffle		R		R		R									C	R						
other	Run																						

Transect		A	B	C	D	E	F	G	H	I	J	K
Sample Location	Left											
	Right											
	Center											

Substrate Size Classes
Fine/Sand - ladybug or smaller (<2mm)
Gravel - ladybug to tennis ball (2 to 64mm)
Coarse - tennis ball to car sized (64 to 4000mm)
Other - bedrock, hardpan, wood etc

On Site Description Data

Section A

Project Site ID: BVC01		T 7S, R 1E, SW 1/4 of Sec 9		Date: 14 APR 2008
Stream Name: Beaver Creek				Time: 14:51
Transect 1(Downstream)			**Transect 11(Upstream)**	
GPS Coordinates (utm):	Northing: 43°26' 57.11"	Easting: 104°00' 56.12"	Northing: 43°26' 57.00"	Easting: 104°00' 48.26"
Investigators: C. Foreman, G. McKee (Sections A, B, C), A. Wones, K. Shook, E. Krantz (Sections D, E, F, G, H, I, J)				

Section B

Preliminary Mean Stream Width (PMSW)

	Width Number											
	1	2	3	4	5	6	7	8	9	10	Sum	Avg. PMSW
Width (0.1m)	6.7	6.9	7.7	8.8	5.9	11.3	8.2	5.0	5.9	7.1	73.5	7.35

Transect Spacing *:	22 m

*If PMSW <10m space transects every 3 PMSW. If >10m, transects are spaced every 2 PMSW.

Total Reach Length: 220 m

Reach Length = 11 Transects, 10 distances apart X 3 PMSW = 30 PMSW or 20 PMSW if width >10m.

Section C

Water Quality

Reading	Time (2400)	Water Temperature (°C)	Air Temperature (oC)	Turbidity (NTU)	Secchi (cm)	Dissolved Oxygen (mg/L	Specific Conductance (µS/cm)	Conductivity (µS/cm)
Morning								
Afternoon	14:55	16.0	16.9	14.3	-	12.21	7,186	

Visual Observations

1) Odor (~~Yes~~ / No)	2) Septic (~~Yes~~ / No)	3) Deadfish (~~Yes~~ / No)	4) Surface Film (~~Yes~~ / No)
5) Color: Clear		6) Ice Cover (~~Yes~~ / No)	

Weather Conditions:	Current	Past 24 hrs
Clear/sunny	✓	✓
Partly cloudy	☐	☐
Intermittent showers	☐	☐
Steady rain	☐	☐
Heavy rain	☐	☐

Field Comments: Heavy silt deposition in pools. WQ by Respec. pH = 8.27

Section D

Habitats Available number of each (also place on map Section E)

Pool 3 Run/Glide 2 Riffle 3 Other (describe) see Table 1
Lengths of Riffle(s): 10.7, 10.7, 6.7, _____, _____.
Nearest Transect # : 3, 9, 11, _____, _____.
Total Length (riffles) = 28.0
Pool Forming Elements See Table 1= _____LS, F

Map, Slope Measurements, and Photo-documentation Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Date: 16 APR 2008

Section E cont.

Draw a map of the site with location of most upstream and most downstream transects. Include locations of photographic points, direction of photograph, and frame number.

Approximately 240 m.

Bed Substrate Composition

Project Site ID:BVC01	Stream Name: Beaver Creek	Date: 17 APR 2008

Section F

Organic Substrates

	Description	Tally	Number
Detritus	sticks, wood, coarse plant material (CPOM)		2
Muck-Mud	black, very fine organic (FPOM)		

Inorganic Substrates

	Diameter	Tally	Number
Clay	<0.004 (slick)		1
Silt	0.004-0.062		15
Sand	0.062-2 (gritty)		
Very Fine Gravel	>2-4		
Fine Gravel	>4-8		
Medium Gravel	>8-16		1
Coarse Gravel	>16-32		7
Very Coarse Gravel	>32-64		17
Cobble	>64-128		9
Large Cobble	>128-256		3
Boulder	>256-512		
Large Boulder	>512		
		Total Number:	55

Section G

Large Woody Debris Data

1

Project Site ID: BVC01 Stream Name: Beaver Creek m/d/yr: 04/17/2008 Page 1 of 1

Transect Spacing	Log Jam Number	LWD Number	Zone	Meander Location	Habitat Association	Angle	Length	Diameter
1-2	0	0						
2-3	0	0						
3-4	0	0						
4-5	0	0						
5-6	0	0						
6-7	0	0						
7-8	0	0						
8-9	0	0						
9-10	0	0						
10-11	0	0						

Zone: Zone 1 is water surface at baseflow, Zone 2 is between baseflow surface and bankfull flow surface, Zone 3 is bankfull channel width above bankfull flow surface.
Meander Location: IM=inside meander, OM=outside meander, CO=crossover, SS=straight section
Habitat Association: PL=pool, RF=riffle, RN=run

LARGE WOODY DEBRIS CATEGORIES (≥10 cm small end diameter; ≥1.5 m length)				
Categories	**1**	**2**	**3**	**4**
Diameter Large End	0.1-<0.3m	0.3-0.6m	0.6-0.8m	>0.8m
Length	>1.5-5m	5-15m	>15m	-

Stream Shade and Canopy Cover Monitoring

Project Site ID:BVC01	Stream Name: Beaver Creek	Date: 17 APR 2008

Section H

Site Name:BVC04							Date: 4/17/2008
Reach Length:				Transect Interval:			Initials:
Transect	Left Bank	Center Upstream	Center Right	Center-downstream	Center Left	Right Bank	Comments:
1	0	0	0	0	0	0	
2	0	0	0	0	0	7	RB = bank
3	0	0	0	0	0	6	RB = bank
4	7	0	0	0	0	5	LB = grass/bank RB = bank
5	9	0	0	0	0	13	LB = grass/bank RB = grass/bank
6	3	0	0	0	0	4	LB = grass RB = grass
7	16	0	0	0	0	3	LB = grass RB = grass
8	4	0	0	0	0	0	LB = grass
9	2	0	0	0	0	0	LB = Bank
10	3	0	0	0	0	0	LB = Grass
11	0	0	0	0	0	0	

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 4/15/08		__1___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	1.3	1.3
Bank Angle (degrees)	25	21
Streambank length (0.1 m)	8.6	2.7
Length of Streambank Vegetated (0.1 m)	8.6	2.7
Length of Streambank Eroded (0.1 m)	0	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / pasture/rangeland / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / pasture/rangeland / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / moderate / high	none / low / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / none	seedling/sprout / young/sapling / mature / decadent / dead / none
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	1.5	0.0		
LEW	3.0	0.4	0.00	
LCB	3.5	0.5	0.09	
STR (@1/4)	4.9	0.5	0.12	
STR (@1/2)	6.1	0.4	0.03	
STR (@3/4)	7.5	0.5	0.09	
RCB	8.8	0.4	0.03	
REW	9.4	0.4	0.00	
RBF	11.8	0.0		
RTB	13.7			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =__13.4__

Bankfull width (RBF-LBF)=____10.2__

Channel Bottom Width (RCB-LCB)=____5.4__

Stream Width (REW-LEW)=___6.3_

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 4/15/08		__2___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	1.7	1.8
Bank Angle (degrees)	**15**	41
Streambank length (0.1 m)	8.6	2.7
Length of Streambank Vegetated (0.1 m)	8.6	2.7
Length of Streambank Eroded (0.1 m)	0	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / pasture/rangeland / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / pasture/rangeland / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / moderate / high	none / low / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / not present	seedling/sprout / young/sapling / mature / decadent / dead / not present
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	6.9	0.0		
LEW	8.1	0.3	0.00	
LCB	10.4	0.6	0.30	
STR (@1/4)	9.6	0.4	0.09	
STR (@1/2)	11.8	0.8	0.52	
STR (@3/4)	13.3	0.7	0.43	
RCB	13.9	0.6	0.37	
REW	14.6	0.3	0.00	
RBF	15.0	0.0		
RTB	15.9			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___15.5_____

Bankfull width (RBF-LBF)=____8.1____

Channel Bottom Width (RCB-LCB)=____3.5_____

Stream Width (REW-LEW)=____6.5_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __3___ of 11
Date: 4/15/08		
Habitat Type Along Transect (circle one): pool riffle [run]		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	1.6	1.6
Bank Angle (degrees)	8	48
Streambank length (0.1 m)	12.0	3.3
Length of Streambank Vegetated (0.1 m)	12.0	0.5
Length of Streambank Eroded (0.1 m)	0	2.9
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.2	0.2
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	9.8	0.0		
LEW	11.2	0.5	0.00	
LCB	12.7	0.5	0.06	
STR (@1/4)	12.9	0.5	0.09	
STR (@1/2)	14.2	0.5	0.06	
STR (@3/4)	15.1	0.5	0.09	
RCB	15.6	0.5	0.06	
REW	16.0	0.3	0.00	
RBF	16.9	0.0		
RTB	17.7			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.4_____

Bankfull width (RBF-LBF)=____7.2____

Channel Bottom Width (RCB-LCB)=____3.0_____

Stream Width (REW-LEW)=____4.8_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __4___ of 11
Date: 4/15/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	1.7	1.7
Bank Angle (degrees)	15	43
Streambank length (0.1 m)	8.1	2.6
Length of Streambank Vegetated (0.1 m)	8.1	2.6
Length of Streambank Eroded (0.1 m)	0	0
Length of Streambank Deposition (0.1 m)	0.6	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.3	0.1
Undercut Bank (0.1 m)	0.2	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	7.9	0.0		
LEW	7.8	0.2	0.00	
LCB	8.0	0.3	0.12	
STR (@1/4)	9.6	0.3	0.06	
STR (@1/2)	11.2	0.4	0.15	
STR (@3/4)	12.9	0.4	0.15	
RCB	13.9	0.3	0.06	
REW	14.3	0.2	0.00	
RBF	14.4	0.0		
RTB	15.7			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___15.4_____

Bankfull width (RBF-LBF)=____6.5____

Channel Bottom Width (RCB-LCB)=____5.8_____

Stream Width (REW-LEW)=____6.6_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08, 4/17/08		__5___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.6	1.5
Bank Angle (degrees)	23	45
Streambank length (0.1 m)	4.0	4.0
Length of Streambank Vegetated (0.1 m)	3.9	3.2
Length of Streambank Eroded (0.1 m)	0.1	0.8
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.0			
LBF	3.7	0.0		
LEW	3.7	0.4	0.07	
LCB	4.7	0.7	0.21	
STR (@1/4)	5.8	0.6	0.29	
STR (@1/2)	7.3	0.6	0.31	
STR (@3/4)	9.5	0.6	0.25	
RCB	10.9	0.6	0.21	
REW	11.3	0.5	0.12	
RBF	11.7	0.1		
RTB	12.9			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___12.9____

Bankfull width (RBF-LBF)=____ 8.0___

Channel Bottom Width (RCB-LCB)=____ 6.2___

Stream Width (REW-LEW)=____7.6

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __6___ of 11
Date: 4/16/08, 4/17/08		
Habitat Type Along Transect (circle one):	[pool] riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.8	1.5
Bank Angle (degrees)	25	55
Streambank length (0.1 m)	3.0	2.2
Length of Streambank Vegetated (0.1 m)	3.0	
Length of Streambank Eroded (0.1 m)	0	
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland, [pasture/rangeland], prairie, wetland, shrub, woodland/forested, barnyard, developed, other-specify	cropland, [pasture/rangeland], prairie, wetland, shrub, woodland/forested, barnyard, developed, other-specify
Animal Vegetation Use (circle one)	none, [low], moderate, high	none, [low], moderate, high
Riparian Vegetation Type (Dominant)	sedge/rush, cottonwoods, [grass/forb], green ash, willows, silver maple, shrubs, other_____	sedge/rush, cottonwoods, [grass/forb], green ash, willows, silver maple, shrubs, other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout, young/sapling, mature, decadent, dead, [none]	seedling/sprout, young/sapling, mature, [decadent], dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	4.1	0.0		
LEW	4.7	0.9*	0.30	
LCB	4.7	0.9	0.30	
STR (@1/4)	6.4	0.9	0.42	
STR (@1/2)	8.5	1.0	0.64	
STR (@3/4)	10.5	0.9	0.59	
RCB	11.5	0.7	0.31	
REW	11.8	0.5*	0.14	
RBF	12.2	0.0		
RTB	13.1			

Location Codes:

LTB left top bank
RTB right top bank
LBF left bankfull
RBF right bankfull
LCB left channel bottom
RCB right channel bottom
LEW left edge water
REW right edge water
STR stream

Bank top width (RTB-LTB) =__12.6___

Bankfull width (RBF-LBF)=____ 8.1__

Channel Bottom Width (RCB-LCB)=__6.9____

Stream Width (REW-LEW)=___7.2___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08, 4/17/08		__7___ of 11
Habitat Type Along Transect (circle one):	[pool] riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.6	1.8
Bank Angle (degrees)	23	50
Streambank length (0.1 m)	3.0	2.2
Length of Streambank Vegetated (0.1 m)	2.9	1.5
Length of Streambank Eroded (0.1 m)	0.1	0.7
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.2	0.2
Undercut Bank (0.1 m)	0	0.25
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	4.1	0.0		
LEW	4.7	0.7	0.21	
LCB	4.7	0.7	0.21	
STR (@1/4)	6.4	1.0	0.50	
STR (@1/2)	8.4	1.0	0.51	
STR (@3/4)	10.1	0.9	0.40	
RCB	12.0	0.9	0.39	
REW	12.5	0.7	0.16	
RBF	13.2	0.0		
RTB	14.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___13.5__

Bankfull width (RBF-LBF)=____ 9.1__

Channel Bottom Width (RCB-LCB)=____7.3___

Stream Width (REW-LEW)=_____7.8__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __8___ of 11
Date: 4/16/08, 4/17/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.5	1.5
Bank Angle (degrees)	23	41
Streambank length (0.1 m)	3.0	3.0
Length of Streambank Vegetated (0.1 m)	3.0	1.8
Length of Streambank Eroded (0.1 m)	0	1.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.2	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland; [pasture/rangeland]; prairie; wetland; shrub; woodland/forested; barnyard; developed; other-specify	cropland; [pasture/rangeland]; prairie; wetland; shrub; woodland/forested; barnyard; developed; other-specify
Animal Vegetation Use (circle one)	none; low; [moderate]; high	none; low; [moderate]; high
Riparian Vegetation Type (Dominant)	sedge/rush; cottonwoods; [grass/forb]; green ash; willows; silver maple; shrubs; other_____	sedge/rush; cottonwoods; grass/forb; green ash; willows; silver maple; [shrubs]; other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout; young/sapling; mature; decadent; dead; [none]	seedling/sprout; young/sapling; mature; decadent; dead; [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	3.4	0.0		
LEW	4.0	0.6	0.10	
LCB	4.4	0.6	0.20	
STR (@1/4)	5.6	0.6	0.20	
STR (@1/2)	7.2	0.6	0.19	
STR (@3/4)	8.8	0.7	0.24	
RCB	10.1	0.7	0.20	
REW	10.6	0.5	0.00	
RBF	11.9	1.0		
RTB	12.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___12.0___

Bankfull width (RBF-LBF)=___8.5___

Channel Bottom Width (RCB-LCB)=___ 5.7____

Stream Width (REW-LEW)=___ 6.6

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __9___ of 11
Date: 4/16/08, 4/17/08		
Habitat Type Along Transect (circle one): pool riffle [run]		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	1.6	1.5
Bank Angle (degrees)	25	25
Streambank length (0.1 m)	3.3	4.8
Length of Streambank Vegetated (0.1 m)	2.9	8.8
Length of Streambank Eroded (0.1 m)	0.4	0.4
Length of Streambank Deposition (0.1 m)	0	1.0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.7
Undercut Bank (0.1 m)	0.2	0
Riparian landuse (circle one)	Cropland; [pasture/rangeland]; prairie; wetland; shrub; woodland/forested; barnyard; developed; other-specify	cropland; [pasture/rangeland]; prairie; wetland; shrub; woodland/forested; barnyard; developed; other-specify
Animal Vegetation Use (circle one)	none; low; [moderate]; high	none; low; [moderate]; high
Riparian Vegetation Type (Dominant)	sedge/rush; cottonwoods; grass/forb; green ash; willows; silver maple; [shrubs]; other_____	sedge/rush; cottonwoods; grass/forb; green ash; willows; silver maple; [shrubs]; other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout; young/sapling; mature; decadent; dead; [none]	seedling/sprout; young/sapling; [mature]; decadent; dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	3.7	0.0		
LEW	4.0	0.5	0.00	
LCB	4.7	0.5	0.18	
STR (@1/4)	5.6	0.5	0.19	
STR (@1/2)	6.9	0.5	0.19	
STR (@3/4)	8.7	0.5	0.11	
RCB	9.4	0.4	0.11	
REW	10.9	0.5	0.01	
RBF	12.5	0.0		
RTB	14.3			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___13.8___

Bankfull width (RBF-LBF)=____ 8.8___

Channel Bottom Width (RCB-LCB)=____ 4.7___

Stream Width (REW-LEW)=____6.9

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08, 4/17/08		__10___ of 11
Habitat Type Along Transect (circle one): pool riffle run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.8	2.0
Bank Angle (degrees)	29	20
Streambank length (0.1 m)	2.8	6
Length of Streambank Vegetated (0.1 m)	2.4	5.8
Length of Streambank Eroded (0.1 m)	0.4	0.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.2	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	3.4	0.0		
LEW	3.6	0.4	0.02	
LCB	3.9	0.6	0.20	
STR (@1/4)	4.9	0.7	0.32	
STR (@1/2)	6.1	0.8	0.38	
STR (@3/4)	7.5	0.8	0.19	
RCB	8.0	0.8	0.14	
REW	8.5	0.7	0.00	
RBF	10.2	0.2		
RTB	14.3			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___13.8___

Bankfull width (RBF-LBF)=____ 6.8__

Channel Bottom Width (RCB-LCB)=____4.0

Stream Width (REW-LEW)=____4.9____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08, 4/17/08		__11___ of 11
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)		
Bank Angle (degrees)	35	10
Streambank length (0.1 m)	5.0	10.4
Length of Streambank Vegetated (0.1 m)	2.4	9.7
Length of Streambank Eroded (0.1 m)	2.6	0.7
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.2	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	1.5	0.0		
LEW	3.3	0.5	0.01	
LCB	3.5	0.7	0.13	
STR (@1/4)	4.2	0.7	0.20	
STR (@1/2)	5.1	0.7	0.18	
STR (@3/4)	5.8	0.7	0.11	
RCB	6.3	0.7	0.08	
REW	6.7	0.5	0.00	
RBF	8.8	0.2		
RTB	16.8			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.3__

Bankfull width (RBF-LBF)=_____7.3_

Channel Bottom Width (RCB-LCB)=___2.9

Stream Width (REW-LEW)=____ 3.5__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

SAMPLE COLLECTION FORM - STREAMS

Site ID	BVC01	Date	7/9/2008

Water Chemistry		
Sample ID	Transect	Comments
		NA

Reach-wide Benthos Sample		
Sample ID	No. of Jars	Comment
BVC01	1	Low flow sampling. Composit sample from 11 transects. Appears to have low benthic abundance.

Transect		A		B		C		D		E		F		G		H		I		J		K	
Substrate	Channel	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan
Fine/Sand	Pool								P		P		P								P		P
Gravel	Glide	G	GL	G	GL			G		G		G		G		G		G		G		G	
Coarse	Riffle					C	R								R		R		R				
other	Run																						

Transect		A	B	C	D	E	F	G	H	I	J	K
Sample Location	Left	X			X			X			X	
	Right		X			X			X			X
	Center			X			X			X		

Substrate Size Classes
Fine/Sand - ladybug or smaller (<2mm)
Gravel - ladybug to tennis ball (2 to 64mm)
Coarse - tennis ball to car sized (64 to 4000mm)
Other - bedrock, hardpan, wood etc

SAMPLE COLLECTION FORM - STREAMS

Site ID	BVC04	Date	7/8/2008

Water Chemistry		
Sample ID	Transect	Comments

Reach-wide Benthos Sample		
Sample ID	No. of Jars	Comment
BVC04	2	Spring sampling. Composit sample from 11 transects.

Transect		A		B		C		D		E		F		G		H		I		J		K	
Substrate	Channel	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan	Sub	Chan
Fine/Sand	Pool											F				F	P	F	P	F	P		P
Gravel	Glide		GL			G	GL	G		G			GL	G									
Coarse	Riffle	C		C	R				R		R				R							C	
other	Run																						

Transect		A	B	C	D	E	F	G	H	I	J	K
Sample Location	Left	X			X			X			X	
	Right		X			X			X			X
	Center			X			X			X		

Substrate Size Classes
Fine/Sand - ladybug or smaller (<2mm)
Gravel - ladybug to tennis ball (2 to 64mm)
Coarse - tennis ball to car sized (64 to 4000mm)
Other - bedrock, hardpan, wood etc

On Site Description Data

Section A

Project Site ID: BVC01		T_____, R_____, _____1/4 of Sec_____		Date: 09 JUL 2008
Stream Name: Beaver Creek				Time: 14:51
Transect 1(Upstream)			**Transect 11(Downstream)**	
GPS Coordinates (utm): WGS84	Northing: 4820631.96	Easting: 0571323.79	Northing: 4820515.00	Easting: 0571485.75
Investigators: C. Foreman, G. McKee (Sections A, B, C), A. Wones, K. Shook, M. Winland (Sections D, E, F, G, H, I, J)				

Section B

Preliminary Mean Stream Width (PMSW)

	Width Number											
	1	2	3	4	5	6	7	8	9	10	Sum	Avg. PMSW
Width (0.1m)	6.7	6.9	7.7	8.8	5.9	11.3	8.2	5.0	5.9	7.1	73.5	7.35

Transect Spacing *:	22 m

*If PMSW <10m space transects every 3 PMSW. If >10m, transects are spaced every 2 PMSW.

Total Reach Length: 220 m

Reach Length = 11 Transects, 10 distances apart X 3 PMSW = 30 PMSW or 20 PMSW if width >10m.

Section C

Water Quality

Reading	Time (2400)	Water Temperature (°C)	Air Temperature (oC)	Turbidity (NTU)	Secchi (cm)	Dissolved Oxygen (mg/L	Specific Conductance (µS/cm)	Conductivity (µS/cm)
Morning	0945	23.63	25.5			8.41		5,939
Afternoon								

Visual Observations

1) Odor (~~Yes~~ / No)	**2) Septic (~~Yes~~ / No)**	**3) Deadfish (~~Yes~~ / No)**	**4) Surface Film (~~Yes~~ / No)**
5) Color: Olive Drab, clear		**6) Ice Cover (~~Yes~~ / No)**	

Weather Conditions:	Current	Past 24 hrs
Clear/sunny	☐	☐
Partly cloudy	✓	✓
Intermittent showers	☐	☐
Steady rain	☐	☐
Heavy rain	☐	☐

Field Comments: wind 5-10 mph, sparse high clouds.

Section D

Habitats Available number of each (also place on map Section E)

Pool 2 Run/Glide 1 Riffle 2 Other (describe) see Table 1
Lengths of Riffle(s): 13, 57.8, 6.7, _____, _____.
Nearest Transect # : 3, 7, _____, _____, _____.
Total Length (riffles) = 70.8
Pool Forming Elements See Table 1= _____ F

Map, Slope Measurements, and Photo-documentation Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Date: 09 JUL 2008

Section E cont.

Draw a map of the site with location of most upstream and most downstream transects. Include locations of photographic points, direction of photograph, and frame number.

N
W E
S

Approximately 320 m.

Bed Substrate Composition

Project Site ID:BVC01	Stream Name: Beaver Creek	Date: 09 JUL 2008

Section F

Organic Substrates

	Description	Tally	Number
Detritus	sticks, wood, coarse plant material (CPOM)		2
Muck-Mud	black, very fine organic (FPOM)		6

Inorganic Substrates

	Diameter	Tally	Number
Clay	<0.004 (slick)		1
Silt	0.004-0.062		8
Sand	0.062-2 (gritty)		1
Very Fine Gravel	>2-4		6
Fine Gravel	>4-8		2
Medium Gravel	>8-16		19
Coarse Gravel	>16-32		15
Very Coarse Gravel	>32-64		28
Cobble	>64-128		20
Large Cobble	>128-256		5
Boulder	>256-512		1
Large Boulder	>512		1
		Total Number:	105

Section G

Large Woody Debris Data

1

Project Site ID: BVC01 Stream Name: Beaver Creek m/d/yr: 07/09/2008 Page 1 of 1

Transect Spacing	Log Jam Number	LWD Number	Zone	Meander Location	Habitat Association	Angle	Length	Diameter
1-2	0	0						
2-3	0	0						
3-4	0	0						
4-5	0	0						
5-6	0	0						
6-7	0	0						
7-8	0	0						
8-9	0	0						
9-10	0	0						
10-11	0	0						

Zone: Zone 1 is water surface at baseflow, Zone 2 is between baseflow surface and bankfull flow surface, Zone 3 is bankfull channel width above bankfull flow surface.
Meander Location: IM=inside meander, OM=outside meander, CO=crossover, SS=straight section
Habitat Association: PL=pool, RF=riffle, RN=run

LARGE WOODY DEBRIS CATEGORIES (≥10 cm small end diameter; ≥1.5 m length)				
Categories	**1**	**2**	**3**	**4**
Diameter Large End	0.1-<0.3m	0.3-0.6m	0.6-0.8m	>0.8m
Length	>1.5-5m	5-15m	>15m	-

Stream Shade and Canopy Cover Monitoring

Project Site ID:BVC01	Stream Name: Beaver Creek	Date: 17 APR 2008

Section H

Site Name:BVC01							Date: 7/09/2008
Reach Length:				Transect Interval:			Initials:
Transect	Left Bank	Center Upstream	Center Right	Center-downstream	Center Left	Right Bank	Comments:
1	0	0	0	0	0	0	
2	0	0	0	0	0	4	RB = bank
3	0	0	0	0	0	7	RB = bank
4	0	0	0	0	0	0	LB = grass/bank RB = bank
5	0	0	0	0	0	0	LB = grass/bank RB = grass/bank
6	0	0	0	0	0	3	LB = grass RB = grass
7	0	0	0	0	0	0	LB = grass RB = grass
8	0	0	0	0	0	0	LB = grass
9	0	0	0	0	0	0	LB = Bank
10	0	0	0	0	0	0	LB = Grass
11	0	0	0	0	0	0	

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __1___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool riffle [run]		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.56	1.52
Bank Angle (degrees)	24	16
Streambank length (0.1 m)	3.5	6.4
Length of Streambank Vegetated (0.1 m)	3.5	6.4
Length of Streambank Eroded (0.1 m)	0	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.2	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.0			
LBF	1.0	0.0		
LEW	2.6	0.66	0.00	
LCB	3.3	0.73	0.12	
STR (@1/4)	4.5	0.74	0.18	
STR (@1/2)	6.0	0.77	0.23	
STR (@3/4)	7.8	0.77	0.25	
RCB	8.7	0.69	0.16	
REW	9.2	0.56	0.00	
RBF	10.9	0.18		
RTB	14.6			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =__14.6__

Bankfull width (RBF-LBF)=____9.9__

Channel Bottom Width (RCB-LCB)=____5.4__

Stream Width (REW-LEW)=___6.6_

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__2___ of 11
Habitat Type Along Transect (circle one): pool riffle run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	2.57	2.80
Bank Angle (degrees)	**8**	55
Streambank length (0.1 m)	10.35	3.2
Length of Streambank Vegetated (0.1 m)	10.32	3.2
Length of Streambank Eroded (0.1 m)	0	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.10
Undercut Bank (0.1 m)	0	010
Riparian landuse (circle one)	Cropland / pasture/rangeland / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / pasture/rangeland / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / moderate / high	none / low / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / not present	seedling/sprout / young/sapling / mature / decadent / dead / not present
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.5	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	20.5			
LBF	27.3	0.0		
LEW	28.0	0.59	0.00	
LCB	30.0	0.95	0.35	
STR (@1/4)	31.0	1.09	0.48	
STR (@1/2)	32.4	1.20	0.54	
STR (@3/4)	33.9	1.24	0.53	
RCB	34.7	1.18	0.46	
REW	35.0	0.77	0.00	
RBF	35.0	0.25		
RTB	36.2			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___15.7_____

Bankfull width (RBF-LBF)=____7.7____

Channel Bottom Width (RCB-LCB)=____4.7_____

Stream Width (REW-LEW)=____7.0_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__3___ of 11
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	1.9	2.5
Bank Angle (degrees)	8	54
Streambank length (0.1 m)	12.7	3.0
Length of Streambank Vegetated (0.1 m)	12.7	2.0
Length of Streambank Eroded (0.1 m)	0	1.0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp*. 0.2, grass sp. 0.2. Total = 0.4	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	20.0			
LBF	29.1	0.00		
LEW	31.7	0.67	0.00	
LCB	32.4	0.77	0.11	
STR (@1/4)	33.2	0.85	0.17	
STR (@1/2)	34.1	0.87	0.19	
STR (@3/4)	35.0	0.93	0.18	
RCB	35.4	0.91	0.15	
REW	35.8	0.77	0.00	
RBF	35.9	0.35		
RTB	37.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.0_____

Bankfull width (RBF-LBF)=____6.8____

Channel Bottom Width (RCB-LCB)=____3.0_____

Stream Width (REW-LEW)=____4.1_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__4___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	1.6	2.0
Bank Angle (degrees)	14	25
Streambank length (0.1 m)	7.9	6.0
Length of Streambank Vegetated (0.1 m)	7.4	5.4
Length of Streambank Eroded (0.1 m)	0.5	0.6
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / **pasture/rangeland** / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / **pasture/rangeland** / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / **moderate** / high	none / low / **moderate** / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / **grass/forb** / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / **grass/forb** / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / **none**	seedling/sprout / young/sapling / mature / decadent / dead / **none**
Submergent Macrophytes (0.1 m)	*Chara sp.* 0.5	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.5	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	5.8	0.00		
LEW	6.1	0.65	0.00	
LCB	7.6	0.80	0.27	
STR (@1/4)	8.5	0.81	0.23	
STR (@1/2)	9.9	0.91	0.29	
STR (@3/4)	11.8	1.10	0.26	
RCB	12.7	0.85	0.22	
REW	13.4	0.70	0.00	
RBF	13.9	0.00		
RTB	19.4			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___19.1_____

Bankfull width (RBF-LBF)=____8.2____

Channel Bottom Width (RCB-LCB)=____5.1_____

Stream Width (REW-LEW)=____7.3_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__5___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	2.1	2.1
Bank Angle (degrees)	21	32
Streambank length (0.1 m)	7.7	4.2
Length of Streambank Vegetated (0.1 m)	7.7	3.18
Length of Streambank Eroded (0.1 m)	0	0.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.2	0.1
Undercut Bank (0.1 m)	0.2	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.3	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.4			
LBF	6.2	0.00		
LEW	6.5	0.70	0.02	
LCB	7.2	0.98	0.35	
STR (@1/4)	8.5	1.12	0.49	
STR (@1/2)	10.1	1.28	0.59	
STR (@3/4)	12.5	1.12	0.48	
RCB	13.8	0.99	0.30	
REW	14.1	0.87	0.15	
RBF	14.6	0.00		
RTB	17.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.6____

Bankfull width (RBF-LBF)=____ 8.4___

Channel Bottom Width (RCB-LCB)=____ 6.7___

Stream Width (REW-LEW)=____7.7

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__6___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	1.9	1.9
Bank Angle (degrees)	22	36
Streambank length (0.1 m)	7.0	3.4
Length of Streambank Vegetated (0.1 m)	6.9	3.2
Length of Streambank Eroded (0.1 m)	0.1	0.2
Length of Streambank Deposition (0.1 m)	0	2.5
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	0.1
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.1	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	2.0			
LBF	5.0	0.00		
LEW	5.7	0.61	0.00	
LCB	5.8	0.89	0.34	
STR (@1/4)	7.4	0.90	0.48	
STR (@1/2)	9.4	1.03	0.55	
STR (@3/4)	11.7	0.98	0.44	
RCB	13.4	0.91	0.37	
REW	13.9	0.79	0.24	
RBF	14.5	0.05		
RTB	15.3			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =__13.3___

Bankfull width (RBF-LBF)=____ 9.5__

Channel Bottom Width (RCB-LCB)=__7.6____

Stream Width (REW-LEW)=___8.2___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __7___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.7	1.5
Bank Angle (degrees)	22	23
Streambank length (0.1 m)	5.8	4.8
Length of Streambank Vegetated (0.1 m)	5.7	4.6
Length of Streambank Eroded (0.1 m)	0.1	0.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	*Chara sp.* 0.05	
Emergent Macrophytes (0.1 m)	Juncus Sp. & Grass 0.30	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.0			
LBF	4.7	0.00		
LEW	5.4	0.60	0.17	
LCB	6.0	0.62	0.20	
STR (@1/4)	7.1	0.58	0.16	
STR (@1/2)	8.5	0.50	0.17	
STR (@3/4)	6.0	0.49	0.19	
RCB	10.7	0.44	0.15	
REW	11.2	0.35	0.01	
RBF	13.4	0.03		
RTB	15.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___14.0__

Bankfull width (RBF-LBF)=____ 8.7__

Channel Bottom Width (RCB-LCB)=____4.7___

Stream Width (REW-LEW)=_____5.8__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number __8___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.9	1.6
Bank Angle (degrees)	25	11
Streambank length (0.1 m)	4.3	5.5
Length of Streambank Vegetated (0.1 m)	3.9	5.3
Length of Streambank Eroded (0.1 m)	0.4	0.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.10	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead / none
Submergent Macrophytes (0.1 m)	*Chara sp.* 0.1	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.25	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.7			
LBF	4.0	0.00		
LEW	4.1	0.58	0.13	
LCB	4.4	0.75	0.30	
STR (@1/4)	5.6	0.58	0.29	
STR (@1/2)	7.0	0.48	0.18	
STR (@3/4)	8.6	0.42	0.17	
RCB	9.9	0.38	0.15	
REW	10.3	0.35	0.10	
RBF	10.6	0.00		
RTB	14.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.9_____

Bankfull width (RBF-LBF)=____11.3____

Channel Bottom Width (RCB-LCB)=___8.1_ _____

Stream Width (REW-LEW)=___8.1___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__9___ of 11
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	2.2	2.0
Bank Angle (degrees)	32	12.5
Streambank length (0.1 m)	3.9	8.4
Length of Streambank Vegetated (0.1 m)	2.9	8.2
Length of Streambank Eroded (0.1 m)	1.0	0.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	0
Undercut Bank (0.1 m)	0.1	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	*Chara sp.* 0.20	
Emergent Macrophytes (0.1 m)	*Juncus sp.* 0.1	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	3.7			
LBF	5.5	0.0		
LEW	6.5	0.2	0.05	
LCB	7.0	0.2	0.10	
STR (@1/4)	8.8	0.4	0.31	
STR (@1/2)	10.4	0.3	0.35	
STR (@3/4)	12.2	0.4	0.31	
RCB	14.3	0.2	0.14	
REW	14.7	0.0	0.01	
RBF	14.9	-0.4		
RTB	22.6			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___18.9___

Bankfull width (RBF-LBF)=____ 9.4___

Channel Bottom Width (RCB-LCB)=____ 7.3___

Stream Width (REW-LEW)=____8.2

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__10___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	2.0	1.7
Bank Angle (degrees)	33	34.5
Streambank length (0.1 m)	6.0	7.6
Length of Streambank Vegetated (0.1 m)	4.5	6.60
Length of Streambank Eroded (0.1 m)	1.5	1.0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp*. 0.1	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	-0.6			
LBF	2.6	0.0		
LEW	2.9	0.60	0.01	
LCB	3.9	1.19	0.60	
STR (@1/4)	5.0	1.04	0.58	
STR (@1/2)	6.3	0.87	0.45	
STR (@3/4)	8.2	0.82	0.24	
RCB	9.2	0.92	0.18	
REW	9.8	0.84	0.00	
RBF	11.5	0		
RTB	16.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.6___

Bankfull width (RBF-LBF)=____ 8.9__

Channel Bottom Width (RCB-LCB)=____5.3

Stream Width (REW-LEW)=____6.9____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC01	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__11___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	2.1	1.9
Bank Angle (degrees)	30	30
Streambank length (0.1 m)	4.3	4.0
Length of Streambank Vegetated (0.1 m)	3.6	3.9
Length of Streambank Eroded (0.1 m)	0.7	0.1
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / low / [moderate] / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus Sp.* 0.5	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.0			
LBF	2.8	0.0		
LEW	3.6	0.90	0.00	
LCB	4.0	1.15	0.30	
STR (@1/4)	5.4	1.42	0.52	
STR (@1/2)	7.0	1.53	0.63	
STR (@3/4)	9.0	1.45	0.55	
RCB	9.7	1.30	0.41	
REW	11.0	0.96	0.00	
RBF	11.6	0.44		
RTB	13.6			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___12.6__

Bankfull width (RBF-LBF)=_____8.8_

Channel Bottom Width (RCB-LCB)=___5.6

Stream Width (REW-LEW)=____ 7.4__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

On Site Description Data

Section A

Project Site ID: BVC04		T_____, R_____, _____1/4 of Sec_____		Date: 14 APR 2008
Stream Name: Beaver Creek				Time: 17:32
Transect 1(Upstream)			**Transect 11(Downstream)**	
GPS Coordinates (utm):	Northing: 4810963	Easting: 0579684	Northing:	Easting:
Investigators: C. Foreman, G. McKee (Sections A, B, C), A. Wones, K. Shook, E. Krantz (Sections D, E, F, G, H, I, J)				

Section B

Preliminary Mean Stream Width (PMSW)

	Width Number											
	1	2	3	4	5	6	7	8	9	10	Sum	Avg. PMSW
Width (0.1m)	6.1	7.1	3.6	6.7	7.7	7.0	8.0	5.5	5.4	4.5	61.6	6.2

Transect Spacing *:	18.5

*If PMSW <10m space transects every 3 PMSW. If >10m, transects are spaced every 2 PMSW.

Total Reach Length: 184.9

Reach Length = 11 Transects, 10 distances apart X 3 PMSW = 30 PMSW or 20 PMSW if width >10m.

Section C

Water Quality

Reading	Time (2400)	Water Temperature (°C)	Air Temperature (oC)	Turbidity (NTU)	Secchi (cm)	Dissolved Oxygen (mg/L	Specific Conductance (µS/cm)	Conductivity (µS/cm)
Morning	11:28	7.0	-	-	-	-	-	-
Afternoon	18:43	16.03	-	11.8	-	9.20	5109	

Visual Observations

1) Odor (~~Yes~~ / No)	2) Septic (~~Yes~~ / No)	3) Deadfish (~~Yes~~ / No)	4) Surface Film (~~Yes~~ / No)
5) Color: Clear		6) Ice Cover (~~Yes~~ / No)	

Weather Conditions:	Current	Past 24 hrs
Clear/sunny	✓	✓
Partly cloudy	☐	☐
Intermittent showers	☐	☐
Steady rain	☐	☐
Heavy rain	☐	☐

Field Comments: Heavy silt deposition in pools.

Section D

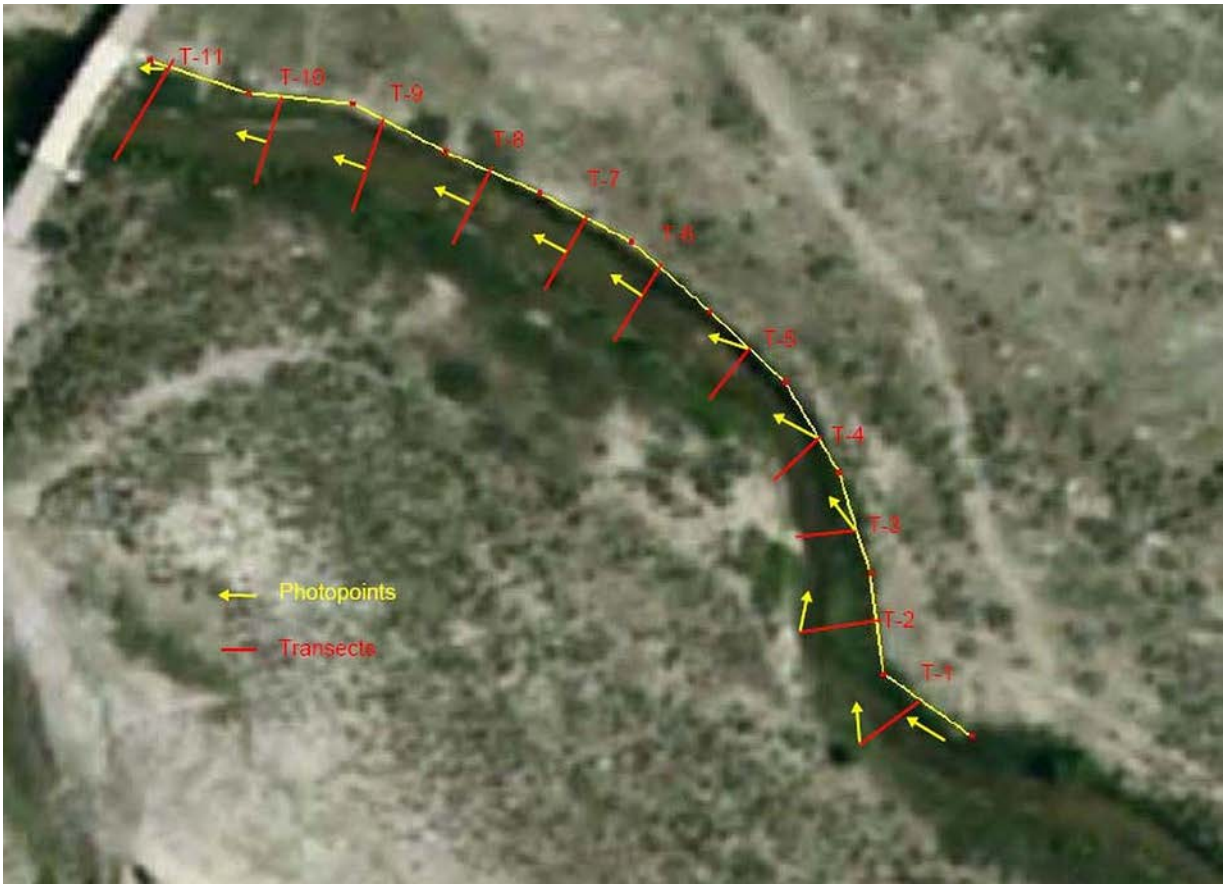
Habitats Available number of each (also place on map Section E)	Pool 2 Run/Glide 2 Riffle 3 Other (describe) see Table 1 Lengths of Riffle(s): 22.0, 22.0, 10.7, _____, _____. Nearest Transect # : 1,2, 2,3, 8, _____, _____. Total Length (riffles) =____54.6____ Pool Forming Elements See Table 1= _____LS, F

Map, Slope Measurements, and Photo-documentation Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Date: 16 APR 2008

Section E cont.

Draw a map of the site with location of most upstream and most downstream transects. Include locations of photographic points, direction of photograph, and frame number.



Approximately 200 m.

Bed Substrate Composition

Project Site ID:BVC04	Stream Name: Beaver Creek	Date: 16 APR 2008

Section F

Organic Substrates

	Description	Tally	Number
Detritus	sticks, wood, coarse plant material (CPOM)		1
Muck-Mud	black, very fine organic (FPOM)		

Inorganic Substrates

	Diameter	Tally	Number
Clay	<0.004 (slick)		1
Silt	0.004-0.062		26
Sand	0.062-2 (gritty)		4
Very Fine Gravel	>2-4		3
Fine Gravel	>4-8		3
Medium Gravel	>8-16		3
Coarse Gravel	>16-32		5
Very Coarse Gravel	>32-64		5
Cobble	>64-128		4
Large Cobble	>128-256		
Boulder	>256-512		
Large Boulder	>512		
		Total Number:	55

Section G

Large Woody Debris Data

1

Project Site ID: BVC04 Stream Name: Beaver Creek m/d/yr: 04/16/2008 Page 1 of 1

Transect Spacing	Log Jam Number	LWD Number	Zone	Meander Location	Habitat Association	Angle	Length	Diameter
1-2	0	0						
2-3	0	0						
3-4	0	0						
4-5	0	1	2	IM	Run	0	4.5	0.25
5-6	1	1	2	OM	Riffle	90	3.0	0.15
5-6	1	2	2	OM	Riffle	45	1.5	0.10
5-6	1	3	2	OM	Riffle	35	1.8	0.25
5-6	1	4	2	OM	Riffle	125	2.0	0.10
5-6	1	5	2	OM	Riffle	45	1.6	0.15
6-7	0	0						
7-8	0	0						
8-9	0	1	2	SS	Riffle	45	2.0	0.17
8-9	0	2	2	SS	Riffle	45	2.2	0.15
9-10	0	0						
10-11	0	0						

Zone: Zone 1 is water surface at baseflow, Zone 2 is between baseflow surface and bankfull flow surface, Zone 3 is bankfull channel width above bankfull flow surface.
Meander Location: IM=inside meander, OM=outside meander, CO=crossover, SS=straight section
Habitat Association: PL=pool, RF=riffle, RN=run

LARGE WOODY DEBRIS CATEGORIES (≥10 cm small end diameter; ≥1.5 m length)				
Categories	**1**	**2**	**3**	**4**
Diameter Large End	0.1-<0.3m	0.3-0.6m	0.6-0.8m	>0.8m
Length	>1.5-5m	5-15m	>15m	-

Stream Shade and Canopy Cover Monitoring

Project Site ID:BVC04	Stream Name: Beaver Creek	Date: 16 APR 2008

Section H

Site Name:BVC04							Date: 4/16/2008
Reach Length: 220 m				Transect Interval: 22 m			Initials: AW
Transect	Left Bank	Center Upstream	Center Right	Center-downstream	Center Left	Right Bank	Comments:
1	0	0	0	0	0	5	RB = Shrubs
2	0	0	0	0	0	2	RB = Tree
3	0	0	0	0	0	5	RB = Tree
4	2	0	0	0	0	0	LB = Shrubs
5	6	0	0	0	0	0	LB = Shrubs
6	4	0	0	0	0	0	LB = Bank
7	8	0	0	0	0	3	LB = Bank RB = Shrub
8	6	0	0	0	0	0	LB = Bank
9	3	0	0	0	0	10	LB = Bank RB = Shrubs
10	2	0	0	0	0	4	LB = Forbs RB = Grass
11	5	13	0	0	4	4	LB, CU, CL = Bridge RB = Shrubs
Note: No leaves on trees and shrubs. Cover from shrubs reported here is more potential than actual cover at this time of year.							

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__1___ of 11
Habitat Type Along Transect (circle one): pool	riffle	run

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	3.7	3.9
Bank Angle (degrees)	26.0	40.0
Streambank length (0.1 m)	8.0	6.0
Length of Streambank Vegetated (0.1 m)	8.0	5.4
Length of Streambank Eroded (0.1 m)	0	0.6
Length of Streambank Deposition (0.1 m)	0.4	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / [mature] / decadent / dead	seedling/sprout / young/sapling / mature / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	5.1	0.0		
LEW	7.1	* 1.0	0.0	
LCB	7.9	1.1	0.18	
STR (@1/4)	9.1	1.2	0.19	
STR (@1/2)	10.1	1.2	0.21	
STR (@3/4)	11.6	1.4	0.20	
RCB	12.2	1.3	0.17	
REW	13.1	* 1.3	0.09	
RBF	13.5	0.4		
RTB	17.4			

Location Codes:

LTB left top bank
RTB right top bank
LBF left bankfull
RBF right bankfull
LCB left channel bottom
RCB right channel bottom
LEW left edge water
REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.1_____

Bankfull width (RBF-LBF)=____8.4____

Channel Bottom Width (RCB-LCB)=____4.4_____

Stream Width (REW-LEW)=____6.0_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__2___ of 11
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	2.3	2.2
Bank Angle (degrees)	**27**	34
Streambank length (0.1 m)	4.6	4.8
Length of Streambank Vegetated (0.1 m)	4.0	3.6
Length of Streambank Eroded (0.1 m)	0.6	1.2
Length of Streambank Deposition (0.1 m)	0	0.4
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [not present]	seedling/sprout / young/sapling / [mature] / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	1.8	0.0		
LEW	4.1	* 0.3	0.0	
LCB	4.6	0.4	0.20	
STR (@1/4)	5.4	0.3	0.12	
STR (@1/2)	6.4	0.3	0.12	
STR (@3/4)	7.5	0.4	0.17	
RCB	8.1	0.4	0.17	
REW	8.8	* 0.3	0.0	
RBF	10.0	0.0		
RTB	11.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___10.7_____

Bankfull width (RBF-LBF)=____8.2____

Channel Bottom Width (RCB-LCB)=____3.5_____

Stream Width (REW-LEW)=____4.7_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__3___ of 11
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.8	2.0
Bank Angle (degrees)	11	50
Streambank length (0.1 m)	11.3	2.4
Length of Streambank Vegetated (0.1 m)	10.7	1.2
Length of Streambank Eroded (0.1 m)	0.6	1.2
Length of Streambank Deposition (0.1 m)	0	0.4
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	1.0
Undercut Bank (0.1 m)	0	0.1
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.4			
LBF	10.6	0.0		
LEW	11.7	* 0.4	0.0	
LCB	12.0	0.4	0.06	
STR (@1/4)	12.7	0.5	0.11	
STR (@1/2)	13.7	0.5	0.12	
STR (@3/4)	14.9	0.5	0.13	
RCB	15.9	0.6	0.20	
REW	15.9	* 0.6	0.20	
RBF	16.6	0.0		
RTB	17.3			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___15.9_____

Bankfull width (RBF-LBF)=____5.9____

Channel Bottom Width (RCB-LCB)=____4.0_____

Stream Width (REW-LEW)=____4.2_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __4___ of 11
Date: 4/16/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	1.8	1.6
Bank Angle (degrees)	26.5	38.0
Streambank length (0.1 m)	4.7	3.0
Length of Streambank Vegetated (0.1 m)	3.5	2.6
Length of Streambank Eroded (0.1 m)	1.2	0.4
Length of Streambank Deposition (0.1 m)	0.6	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0			
LBF	3.0	0.0		
LEW	4.1	* 0.5	0.0	
LCB	4.5	0.6	0.15	
STR (@1/4)	6.0	0.5	0.09	
STR (@1/2)	7.5	0.4	0.10	
STR (@3/4)	9.1	0.4	0.10	
RCB	10.5	0.4	0.05	
REW	11.0	* 0.4	0	
RBF	12.3	-0.1		
RTB	13.1			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___13.1_____

Bankfull width (RBF-LBF)=____9.3____

Channel Bottom Width (RCB-LCB)=____6.0_____

Stream Width (REW-LEW)=____6.9_____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__5___ of 11
Habitat Type Along Transect (circle one): pool riffle run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	2.5	2.2
Bank Angle (degrees)	48	40.0
Streambank length (0.1 m)	3.2	6.0
Length of Streambank Vegetated (0.1 m)	0.3	5.4
Length of Streambank Eroded (0.1 m)	2.9	0.6
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	1.3	0.0		
LEW	2.5	0.8	0.00	
LCB	2.8	1.0	0.20	
STR (@1/4)	9.7	1.0	0.28	
STR (@1/2)	5.5	0.8	0.15	
STR (@3/4)	7.3	0.7	0.12	
RCB	8.7	0.7	0.06	
REW	9.0	0.7	0.00	
RBF	11.0	0.0		
RTB	14.3			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___14.0____

Bankfull width (RBF-LBF)=____ 9.7___

Channel Bottom Width (RCB-LCB)=____ 5.9___

Stream Width (REW-LEW)=____6.5

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __6___ of 11
Date: 4/16/08		
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	3.5	3.6
Bank Angle (degrees)	46	20
Streambank length (0.1 m)	4.6	6.3
Length of Streambank Vegetated (0.1 m)	1.6	5.6
Length of Streambank Eroded (0.1 m)	2.8	0.7
Length of Streambank Deposition (0.1 m)	0	2.5
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.0			
LBF	1.9	0		
LEW	2.7	0.4*	0.00	
LCB	3.2	0.6	0.24	
STR (@1/4)	4.4	0.7	0.31	
STR (@1/2)	6.1	0.7	0.26	
STR (@3/4)	8.0	0.6	0.20	
RCB	8.8	0.6	0.10	
REW	10.0	0.5*	0.00	
RBF	13.1	0.0		
RTB	12.1			

Location Codes:

LTB left top bank
RTB right top bank
LBF left bankfull
RBF right bankfull
LCB left channel bottom
RCB right channel bottom
LEW left edge water
REW right edge water
STR stream

Bank top width (RTB-LTB) =__17.1___

Bankfull width (RBF-LBF)=____ 11.3__

Channel Bottom Width (RCB-LCB)=__5.6____

Stream Width (REW-LEW)=___7.3___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__7___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	3.2	3.1
Bank Angle (degrees)	55	50
Streambank length (0.1 m)	4.0	5.2
Length of Streambank Vegetated (0.1 m)	1.8	4.2
Length of Streambank Eroded (0.1 m)	2.2	1.0
Length of Streambank Deposition (0.1 m)	0	0.5
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.2
Undercut Bank (0.1 m)	0	0.25
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.6			
LBF	3.4	0.0		
LEW	3.7	0.3	0.00	
LCB	4.0	0.5	0.20	
STR (@1/4)	6.4	0.8	0.60	
STR (@1/2)	8.5	0.6	0.61	
STR (@3/4)	11.4	0.7	0.73	
RCB	13.7	0.4	0.42	
REW	14.3	0.2	0.04	
RBF	14.5	-0.5		
RTB	17.7			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.1__

Bankfull width (RBF-LBF)=____ 11.1__

Channel Bottom Width (RCB-LCB)=____9.7___

Stream Width (REW-LEW)=_____10.7__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __8___ of 11
Date: 4/16/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	3.2	3.1
Bank Angle (degrees)	55	25
Streambank length (0.1 m)	3.9	8.3
Length of Streambank Vegetated (0.1 m)	1.3	5.8
Length of Streambank Eroded (0.1 m)	2.6	2.5
Length of Streambank Deposition (0.1 m)	0	0.4
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.4			
LBF	2.4	0.0		
LEW	3.4	0.6*	0.10	
LCB	3.5	0.6	0.04	
STR (@1/4)	4.3	0.6	0.18	
STR (@1/2)	8.5	0.5	0.12	
STR (@3/4)	10.6	0.5	0.18	
RCB	11.6	0.5	0.16	
REW	11.6	0.5*	0.16	
RBF	13.7	0.0		
RTB	18.3			

Location Codes:

LTB left top bank
RTB right top bank
LBF left bankfull
RBF right bankfull
LCB left channel bottom
RCB right channel bottom
LEW left edge water
REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.9_____

Bankfull width (RBF-LBF)=____11.3____

Channel Bottom Width (RCB-LCB)=___8.1_ _____

Stream Width (REW-LEW)=___8.1___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__9___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	3.2	3.2
Bank Angle (degrees)	48	24.5
Streambank length (0.1 m)	4.1	9.0
Length of Streambank Vegetated (0.1 m)	2.1	8.8
Length of Streambank Eroded (0.1 m)	2.0	0.2
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.7
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	3.7			
LBF	5.5	0.0		
LEW	6.5	0.2	0.05	
LCB	7.0	0.2	0.10	
STR (@1/4)	8.8	0.4	0.31	
STR (@1/2)	10.4	0.3	0.35	
STR (@3/4)	12.2	0.4	0.31	
RCB	14.3	0.2	0.14	
REW	14.7	0.0	0.01	
RBF	14.9	-0.4		
RTB	22.6			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___18.9___

Bankfull width (RBF-LBF)=____ 9.4___

Channel Bottom Width (RCB-LCB)=____ 7.3___

Stream Width (REW-LEW)=____8.2

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__10___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	1.7	1.8
Bank Angle (degrees)	25	28
Streambank length (0.1 m)	3.0	4.2
Length of Streambank Vegetated (0.1 m)	2.7	3.8
Length of Streambank Eroded (0.1 m)	0.3	0.4
Length of Streambank Deposition (0.1 m)	0.8	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / low / [moderate] / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.7			
LBF	1.8	0.0		
LEW	3.2	0.5	0.02	
LCB	3.5	0.6	0.10	
STR (@1/4)	4.9	0.7	0.26	
STR (@1/2)	7.3	0.7	0.35	
STR (@3/4)	8.5	0.6	0.30	
RCB	10.1	0.6	0.17	
REW	10.3	0.5	0.00	
RBF	10.4	0.1		
RTB	13.1			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___12.4___

Bankfull width (RBF-LBF)=____ 8.6__

Channel Bottom Width (RCB-LCB)=____6.6

Stream Width (REW-LEW)=____7.1____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 4/16/08		__11___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	P
Bank Height (0.1 m)	1.9	2.1
Bank Angle (degrees)	30	37
Streambank length (0.1 m)	3.2	3.7
Length of Streambank Vegetated (0.1 m)	1.7	2.7
Length of Streambank Eroded (0.1 m)	1.5	1.0
Length of Streambank Deposition (0.1 m)	2.0	0.5
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	0	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.0			
LBF	0.6	0.0		
LEW	3.0	0.6	0.01	
LCB	3.7	0.8	0.20	
STR (@1/4)	4.9	0.8	0.24	
STR (@1/2)	6.1	1.0	0.35	
STR (@3/4)	7.9	1.0	0.31	
RCB	8.8	1.0	0.20	
REW	9.6	0.8	0.00	
RBF	7.3	0.4		
RTB	12.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___12.5__

Bankfull width (RBF-LBF)=_____6.7_

Channel Bottom Width (RCB-LCB)=___5.2

Stream Width (REW-LEW)=____ 6.5__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

On Site Description Data

Section A

Project Site ID: BVC04		T_____, R_____, _____1/4 of Sec_____		Date: 8 JUL 2008
Stream Name: Beaver Creek				Time: 12:05
Transect 1(Upstream)			**Transect 11(Downstream)**	
GPS Coordinates (utm): WGS 84	Northing: 4811175.61	Easting: 0579834.93	Northing: 4811171.63	Easting: 0579653.03
Investigators: A. Wones, K. Shook, L. Dunn				

Section B

Preliminary Mean Stream Width (PMSW)

	Width Number											
	1	2	3	4	5	6	7	8	9	10	Sum	Avg. PMSW
Width (0.1m)	6.1	7.1	3.6	6.7	7.7	7.0	8.0	5.5	5.4	4.5	61.6	6.2

Transect Spacing *: 18.5

*If PMSW <10m space transects every 3 PMSW. If >10m, transects are spaced every 2 PMSW.

Total Reach Length: 184.9

Reach Length = 11 Transects, 10 distances apart X 3 PMSW = 30 PMSW or 20 PMSW if width >10m.

Section C

Water Quality

Reading	Time (2400)	Water Temperature (°C)	Air Temperature (oC)	Turbidity (NTU)	Secchi (cm)	Dissolved Oxygen (mg/L	Specific Conductance (µS/cm)	Conductivity (µS/cm)
Morning			-	-	-	-	-	-
Afternoon	12:05	24	25	-	-	-	-	-

Visual Observations

1) Odor (~~Yes~~ / No)	**2) Septic (~~Yes~~ / No)**	**3) Deadfish (~~Yes~~ / No)**	**4) Surface Film (~~Yes~~ / No)**
5) Color: Clear, Olive drab		**6) Ice Cover (~~Yes~~ / No)**	

Weather Conditions:	Current	Past 24 hrs
Clear/sunny	☐	☐
Partly cloudy	✓	☐
Intermittent showers	☐	✓
Steady rain	☐	☐
Heavy rain	☐	☐

Field Comments: Heavy silt deposition in pools.

Section D

Habitats Available number of each (also place on map Section E)

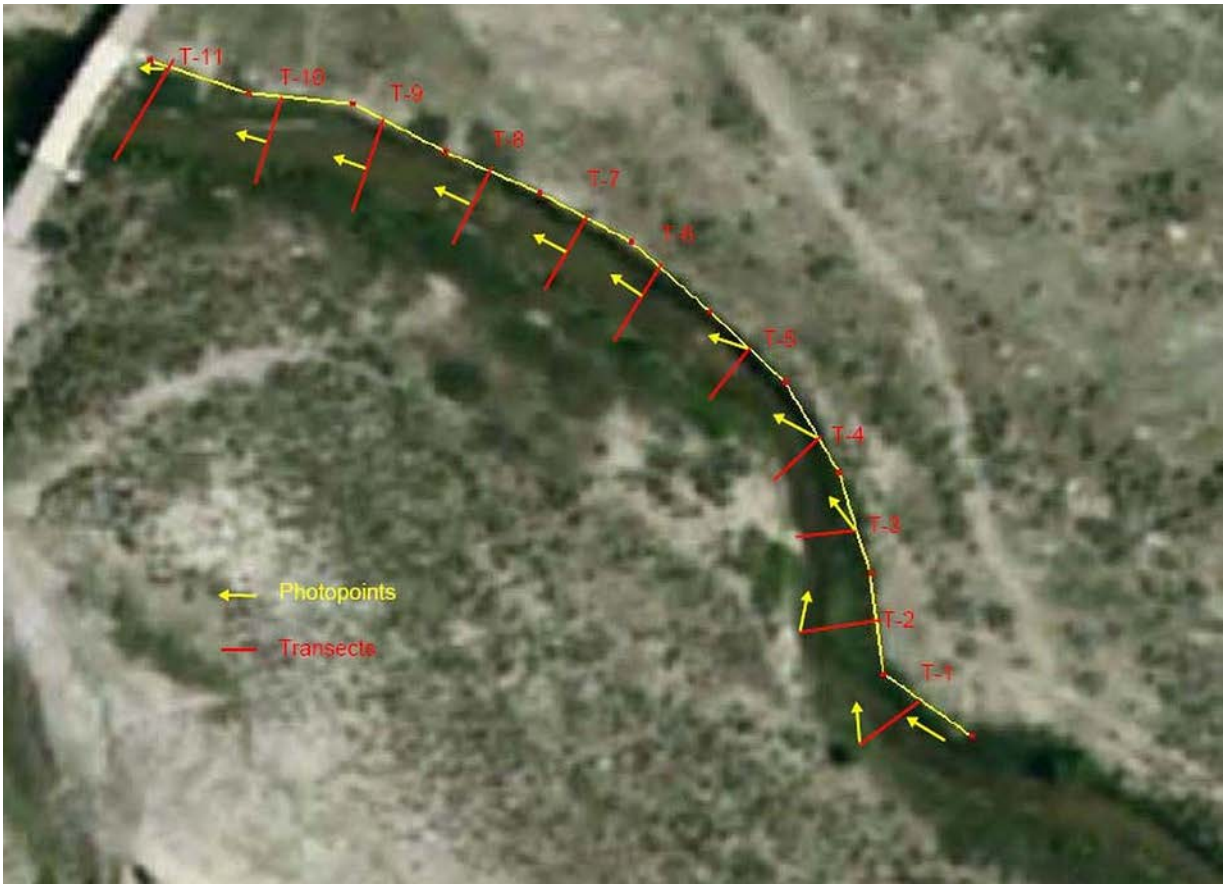
Pool 1 Run/Glide 3 Riffle 3 Other (describe) see Table 1
Lengths of Riffle(s): 25.3 , 18.6 * , 14.0* . * Two sides of an island .
Nearest Transect # : 2 , 4 , 7 , _____, _____.
Total Length (riffles) =____57.9____
Pool Forming Elements See Table 1= ____ F

Map, Slope Measurements, and Photo-documentation Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Date: 8 July 2008

Section E cont.

Draw a map of the site with location of most upstream and most downstream transects. Include locations of photographic points, direction of photograph, and frame number.



Approximately 200 m.

Bed Substrate Composition

Project Site ID:BVC04	Stream Name: Beaver Creek	Date: 8JUL 2008

Section F

Organic Substrates

	Description	Tally	Number
Detritus	sticks, wood, coarse plant material (CPOM)		
Muck-Mud	black, very fine organic (FPOM)		20

Inorganic Substrates

	Diameter	Tally	Number
Clay	<0.004 (slick)		1
Silt	0.004-0.062		15
Sand	0.062-2 (gritty)		10
Very Fine Gravel	>2-4		0
Fine Gravel	>4-8		7
Medium Gravel	>8-16		9
Coarse Gravel	>16-32		13
Very Coarse Gravel	>32-64		18
Cobble	>64-128		11
Large Cobble	>128-256		1
Boulder	>256-512		
Large Boulder	>512		
		Total Number:	105

Section G

Large Woody Debris Data

1

Project Site ID: BVC04 Stream Name: Beaver Creek m/d/yr: 07/11/2008 Page 1 of 1

Transect Spacing	Log Jam Number	LWD Number	Zone	Meander Location	Habitat Association	Angle	Length	Diameter
1-2	0	0						
2-3	0	0						
3-4	0	0						
4-5	0	0						
5-6	0	0						
6-7	0	0						
7-8	0	1	2	SS	Riffle	250	2.0	0.12
8-9	0	0						
9-10	0	0						
10-11	0	2	3	SS	Pool	180	8.0	0.4

Zone: Zone 1 is water surface at baseflow, Zone 2 is between baseflow surface and bankfull flow surface, Zone 3 is bankfull channel width above bankfull flow surface.
Meander Location: IM=inside meander, OM=outside meander, CO=crossover, SS=straight section
Habitat Association: PL=pool, RF=riffle, RN=run

LARGE WOODY DEBRIS CATEGORIES (≥10 cm small end diameter; ≥1.5 m length)				
Categories	**1**	**2**	**3**	**4**
Diameter Large End	0.1-<0.3m	0.3-0.6m	0.6-0.8m	>0.8m
Length	>1.5-5m	5-15m	>15m	-

Stream Shade and Canopy Cover Monitoring

Project Site ID:BVC04	Stream Name: Beaver Creek	Date: 8 JUL 2008

Section H

Site Name:BVC04							Date: 7/8/2008
Reach Length: 185 m				Transect Interval: 18.5 m			Initials: KS, LD
Transect	Left Bank	Center Upstream	Center Right	Center-downstream	Center Left	Right Bank	Comments:
1	0	0	0	0	0	8	RB = Shrubs
2	0	0	0	0	0	0	RB = Tree
3	2	0	0	0	0	1	RB = Tree
4	4	0	0	0	0	0	LB = Shrubs
5	8	0	0	0	0	4	LB = Shrubs
6	5	0	0	0	0	3	LB = Bank
7	13	0	0	0	0	3	LB = Bank RB = Shrub
8	8	0	0	0	0	9	LB = Bank
9	3	0	0	0	0	13	LB = Bank RB = Shrubs
10	11	0	0	0	0	11	LB = Forbs RB = Grass
11	12	16	2	0	9	12	LB, CU, CL = Bridge RB = Shrubs
Note: Cover in Transect 11 from bridge.							

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __1___ of 11
Date: 7/8/08		
Habitat Type Along Transect (circle one): pool riffle [run]		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	2.1	2.8
Bank Angle (degrees)	14	57
Streambank length (0.1 m)	8.3	5.0
Length of Streambank Vegetated (0.1 m)	7.3	4.0
Length of Streambank Eroded (0.1 m)	0	1.0
Length of Streambank Deposition (0.1 m)	1.0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	0.3
Undercut Bank (0.1 m)	0	0.3
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus Sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.4			
LBF	7.8	0.00		
LEW	9.3	0.58	0.00	
LCB	10.7	0.90	0.32	
STR (@1/4)	11.3	1.31	0.45	
STR (@1/2)	11.8	0.90	0.40	
STR (@3/4)	12.4	0.90	0.40	
RCB	13.3	1.60	0.39	
REW	13.6	0.81	0.35	
RBF	13.7	0.10		
RTB	16.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___16.1_____

Bankfull width (RBF-LBF)=____ 6.0___

Channel Bottom Width (RCB-LCB)=____ 2.6

Stream Width (REW-LEW)=___ 4.3____

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__2___ of 11
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	2.2	2.3
Bank Angle (degrees)	**16**	27
Streambank length (0.1 m)	8.1	4.6
Length of Streambank Vegetated (0.1 m)	8.5	3.1
Length of Streambank Eroded (0.1 m)	0.5	1.0
Length of Streambank Deposition (0.1 m)	0	0.5
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	0.1
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [not present]	seedling/sprout / young/sapling / mature / decadent / dead / [not present]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus Sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.0			
LBF	6.1	0.00		
LEW	8.5	0.25	0.00	
LCB	8.9	0.38	0.11	
STR (@1/4)	9.8	0.41	0.15	
STR (@1/2)	10.6	0.47	0.22	
STR (@3/4)	11.6	0.46	0.17	
RCB	12.0	0.47	0.12	
REW	13.1	0.38	0.00	
RBF	14.2	-0.02		
RTB	16.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =__15.0____

Bankfull width (RBF-LBF)=___8.2__

Channel Bottom Width (RCB-LCB)=_3.1___

Stream Width (REW-LEW)=____ __4.6

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __3___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool riffle [run]		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	2.7	2.4
Bank Angle (degrees)	30	25
Streambank length (0.1 m)	5.3	6.3
Length of Streambank Vegetated (0.1 m)	5.0	4.3
Length of Streambank Eroded (0.1 m)	0.3	1.0
Length of Streambank Deposition (0.1 m)	0	1.0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	0.1
Undercut Bank (0.1 m)	0.2	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / [decadent] / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.5			
LBF	4.0	0.00		
LEW	4.6	0.31	0.05	
LCB	5.1	0.69	0.31	
STR (@1/4)	6.2	0.58	0.29	
STR (@1/2)	7.6	0.44	0.19	
STR (@3/4)	9.0	0.45	0.15	
RCB	9.8	0.43	0.16	
REW	10.3	0.33	0.00	
RBF	12.6	-0.34		
RTB	15.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___15.0_____

Bankfull width (RBF-LBF)=____ ___8.6_

Channel Bottom Width (RCB-LCB)=___4.7_ _____

Stream Width (REW-LEW)=____ _____5.7

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __4___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	3.7	3.7
Bank Angle (degrees)	45	22
Streambank length (0.1 m)	4.7	7.3
Length of Streambank Vegetated (0.1 m)	1.0	7.30
Length of Streambank Eroded (0.1 m)	3.7	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.2
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead / none
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.3			
LBF	3.0	0.0		
LEW	3.4	0.54	0.06	
LCB	3.7	0.74	0.31	
STR (@1/4)	4.6	0.79	0.36	
STR (@1/2)	6.4	0.63	0.12	
STR (@3/4)	8.4	0.71	0.21	
RCB	9.2	0.76	0.17	
REW	10.4	0.67	0.00	
RBF	11.1	0.05		
RTB	17.6			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.3_____

Bankfull width (RBF-LBF)=____ _8.1___

Channel Bottom Width (RCB-LCB)=____ _5.5____

Stream Width (REW-LEW)=____ 7.0___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __5___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool riffle [run]		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	3.5	3.2
Bank Angle (degrees)	55	21
Streambank length (0.1 m)	4.4	8.0
Length of Streambank Vegetated (0.1 m)	2.0	7.5
Length of Streambank Eroded (0.1 m)	2.4	0.5
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.2
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	0.7			
LBF	2.2	0.0		
LEW	3.0	0.50	0.00	
LCB	3.3	0.84	0.32	
STR (@1/4)	4.6	0.91	0.49	
STR (@1/2)	6.8	0.75	0.38	
STR (@3/4)	8.6	0.50	0.26	
RCB	9.8	0.48	0.21	
REW	10.7	0.40	0.00	
RBF	13.4	0.0		
RTB	17.7			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.0____

Bankfull width (RBF-LBF)=____11.2___

Channel Bottom Width (RCB-LCB)=____ 6.6___

Stream Width (REW-LEW)=___7.7_

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __6___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool riffle run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	3.7	3.9
Bank Angle (degrees)	53	40
Streambank length (0.1 m)	4.6	5.7
Length of Streambank Vegetated (0.1 m)	4.1	5.7
Length of Streambank Eroded (0.1 m)	0.5	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0.1	2.0
Undercut Bank (0.1 m)	0.1	0.3
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	8.0			
LBF	10.3	0		
LEW	11.0	0.52	0.06	
LCB	11.3	0.85	0.38	
STR (@1/4)	13.0	0.97	0.52	
STR (@1/2)	14.6	1.02	0.53	
STR (@3/4)	18.4	1.02	0.50	
RCB	20.0	1.07	0.45	
REW	20.9	0.67	0.00	
RBF	21.5	0.0		
RTB	25.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.5_

Bankfull width (RBF-LBF)=____11.2__

Channel Bottom Width (RCB-LCB)=__8.7__

Stream Width (REW-LEW)=___ 9.9

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __7___ of 11
Date: 7/11/08		
Habitat Type Along Transect (circle one): pool [riffle] run		

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	3.4	3.6
Bank Angle (degrees)	60	29
Streambank length (0.1 m)	3.9	8.0
Length of Streambank Vegetated (0.1 m)	0.1	8.0
Length of Streambank Eroded (0.1 m)	3.8	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.3
Undercut Bank (0.1 m)	0	0.4
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	13.0			
LBF	14.1	0.0		
LEW	14.5	0.68	0.00	
LCB	14.9	0.84	0.19	
STR (@1/4)	15.9	0.99	0.34	
STR (@1/2)	22.2	1.01	0.29	
STR (@3/4)	23.6	1.13	0.23	
RCB	24.4	1.11	0.33	
REW	24.6	1.17	0.30	
RBF	25.3	0.02		
RTB	31.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___18.0__

Bankfull width (RBF-LBF)=___11.2__

Channel Bottom Width (RCB-LCB)=____ _9.5__

Stream Width (REW-LEW)=_____10.1__

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__8___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	P
Bank Height (0.1 m)	3.2	3.3
Bank Angle (degrees)	55	30
Streambank length (0.1 m)	4.4	7.6
Length of Streambank Vegetated (0.1 m)	3.4	7.2
Length of Streambank Eroded (0.1 m)	1.0	0
Length of Streambank Deposition (0.1 m)	0	0.4
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.1
Undercut Bank (0.1 m)	0	0
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead / none
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.0			
LBF	2.8	0.0		
LEW	3.1	1.05	0.00	
LCB	3.5	0.61	0.31	
STR (@1/4)	5.0	0.70	0.34	
STR (@1/2)	7.4	0.89	0.52	
STR (@3/4)	10.5	0.85	0.50	
RCB	11.7	0.70	0.27	
REW	12.5	0.60	0.11	
RBF	13.0	0.0		
RTB	18.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___17.0_____

Bankfull width (RBF-LBF)=___10.2____

Channel Bottom Width (RCB-LCB)=___ _8.2

Stream Width (REW-LEW)=__9.4___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 7/8/08		__9___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	3.8	3.7
Bank Angle (degrees)	40	26
Streambank length (0.1 m)	5.2	8.4
Length of Streambank Vegetated (0.1 m)	4.1	8.4
Length of Streambank Eroded (0.1 m)	1.1	0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.2
Undercut Bank (0.1 m)	0	0.1
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / [grass/forb] / green ash / willows / silver maple / [shrubs] / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / [young/sapling] / mature / decadent / dead
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	Juncus sp.	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.0			
LBF	3.5	0.0		
LEW	4.2	0.60	0.02	
LCB	4.3	1.05	0.42	
STR (@1/4)	7.2	0.90	0.44	
STR (@1/2)	9.3	1.02	0.55	
STR (@3/4)	11.2	1.10	0.40	
RCB	12.4	0.95	0.28	
REW	12.9	0.90	0.20	
RBF	13.1	0.0		
RTB	20.0			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___19.0___

Bankfull width (RBF-LBF)=___9.6___

Channel Bottom Width (RCB-LCB___8.1

Stream Width (REW-LEW)=___8.7_

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number
Date: 7/11/08		__10___ of 11
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	A	A
Bank Height (0.1 m)	3.5	3.7
Bank Angle (degrees)	20.5	28
Streambank length (0.1 m)	3.0	40
Length of Streambank Vegetated (0.1 m)	10.7	6.8
Length of Streambank Eroded (0.1 m)	10.7	6.8
Length of Streambank Deposition (0.1 m)	0.8	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	0.2
Undercut Bank (0.1 m)	0	0.2
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / [shrubs] / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / young/sapling / mature / decadent / dead / [none]	seedling/sprout / young/sapling / mature / decadent / dead / [none]
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	1.5			
LBF	9.9	0.0		
LEW	10.3	0.55	0.01	
LCB	11.5	0.82	0.31	
STR (@1/4)	12.5	0.85	0.36	
STR (@1/2)	14.3	0.95	0.41	
STR (@3/4)	16.3	1.04	0.38	
RCB	17.2	1.00	0.32	
REW	17.9	0.75	0.01	
RBF	18.3	0.0		
RTB	22.5			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___21.0___

Bankfull width (RBF-LBF)=____ 8.4__

Channel Bottom Width (RCB-LCB)=___5.7_

Stream Width (REW-LEW)=____ _7.6___

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Transect Data

Project Site ID: BVC04	Stream Name: Beaver Creek	Transect Number __11___ of 11
Date: 7/8/08		
Habitat Type Along Transect (circle one):	pool riffle run	

Section I

Streambank and Riparian Features	Left Bank	Right Bank
Bank Substrate (dominant)	Silt/Clay	Silt/Clay
Bank Slumpage (present, p or absent, a)	P	A
Bank Height (0.1 m)	3.2	3.8
Bank Angle (degrees)	35	37
Streambank length (0.1 m)	5.4	6.5
Length of Streambank Vegetated (0.1 m)	4.4	5.5
Length of Streambank Eroded (0.1 m)	1.0	1.0
Length of Streambank Deposition (0.1 m)	0	0
Riparian Buffer Width (m)	0	0
Overhanging Vegetation (0.1 m)	0	1.0
Undercut Bank (0.1 m)	0	0.1
Riparian landuse (circle one)	Cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify	cropland / [pasture/rangeland] / prairie / wetland / shrub / woodland/forested / barnyard / developed / other-specify
Animal Vegetation Use (circle one)	none / [low] / moderate / high	none / [low] / moderate / high
Riparian Vegetation Type (Dominant)	sedge/rush / cottonwoods / grass/forb / green ash / [willows] / silver maple / shrubs / other_____	sedge/rush / cottonwoods / grass/forb / green ash / willows / silver maple / shrubs / other_____
Riparian Age Class(es) of Trees, if present	seedling/sprout / [young/sapling] / mature / decadent / dead / none	seedling/sprout / [young/sapling] / mature / decadent / dead / none
Submergent Macrophytes (0.1 m)	0	
Emergent Macrophytes (0.1 m)	*Juncus sp.*	

Section J

Transect Data and Depth Velocity Data
(record units under the heading for each column)

Location Code	Station	Bankfull Depth	Water Depth	Velocity
LTB	5.0			
LBF	6.8	0.0		
LEW	8.6	0.78	0.01	
LCB	9.1	0.90	0.24	
STR (@1/4)	11.0	1.21	0.40	
STR (@1/2)	12.9	1.32	0.39	
STR (@3/4)	14.3	1.52	0.42	
RCB	15.8	1.50	0.28	
REW	16.2	1.31	0.14	
RBF	16.6	0.0		
RTB	20.9			

Location Codes:

LTB left top bank

RTB right top bank
LBF left bankfull
RBF right bankfull

LCB left channel bottom
RCB right channel bottom
LEW left edge water

REW right edge water
STR stream

Bank top width (RTB-LTB) =___15.9__

Bankfull width (RBF-LBF)=___9.8__ _

Channel Bottom Width (RCB-LCB)=__6.7_

Stream Width (REW-LEW)=____ __7.7

* Bankfull Depth for LEW or REW should equal L(R)CB Bankfull Depth minus L(R)CB Water Depth.

Photo 1. Site BVC01 looking upstream at Transect 1, April 15, 2008.

Photo 2. Site BVC01 looking upstream at Transect 2, April 15, 2008.

Photo 3. Site BVC01 looking upstream at Transect 3, April 15, 2008.

Photo 4. Site BVC01 looking upstream at Transect 4, April 15, 2008.

Photo 5. Site BVC01 looking upstream at Transect 5, April 15, 2008.

Photo 6. Site BVC01 f looking upstream at Transect 6, April 15, 2008.

Photo 7. Site BVC01 looking upstream at Transect 7, April 15, 2008.

Photo 8. Site BVC01 looking upstream at Transect 8, April 15, 2008.

Photo 9. Site BVC01 looking upstream at Transcect 9, April 15, 2008.

Photo 10. Site BVC01 looking upstream at Transcect 10, April 15, 2008.

Photo 11. Site BVC01 looking upstream at Transect 11 April 15, 2008.

Photo 12. Site BVC01 looking upstream from Transect 11 April 15, 2008.

Photo 13. Site BVC04 looking upstream from Transect 1 April 16, 2008.

Photo 14. Site BVC04 looking upstream from Transect 2 April 16, 2008.

Photo 15. Site BVC04 looking upstream from Transect 3 April 16, 2008.

Photo 16. Site BVC04 looking upstream from Transect 4 April 16, 2008.

Photo 17. Site BVC04 looking upstream from Transect 5 April 16, 2008.

Photo 18. Site BVC04 looking upstream from Transect 6 April 16, 2008.

Photo 19. Site BVC04 looking upstream from Transect 7 April 16, 2008.

Photo 20. Site BVC04 looking upstream from Transect 8 April 16, 2008.

Photo 21. Site BVC04 looking upstream from Transect 9 April 16, 2008.

Photo 22. Site BVC04 looking upstream from Transect 10 April 16, 2008.

Photo 23. Site BVC04 looking upstream from Transect 11 April 16, 2008.

Photo 24. Site BVC01 looking upstream at Transect 1, July 9, 2008.

Photo 25. Site BVC01 looking upstream at Transect 2, July 9, 2008.

Photo 26. Site BVC01 looking upstream at Transect 3, July 9, 2008.

Photo 27. Site BVC01 looking upstream at Transect 4, July 9, 2008.

Photo 28. Site BVC01 looking upstream at Transect 5, July 9, 2008.

Photo 29. Site BVC01 f looking upstream at Transect 6, July 9, 2008.

Photo 30. Site BVC01 looking upstream at Transect 7, July 9, 2008.

Photo 31. Site BVC01 looking upstream at Transect 8, July 9, 2008.

Photo 32. Site BVC01 looking upstream at Transect 9, July 9, 2008.

Photo 33. Site BVC01 looking upstream at Transect 10, July 9, 2008.

Photo 34. Site BVC01 looking upstream at Transect 11, July 9, 2008.

Photo 35. Site BVC04 looking upstream at Transect 1, July 8, 2008.

Photo 36. Site BVC04 looking upstream from Transect 1 July 8, 2008.

Photo 37. Site BVC04 looking upstream from Transect 2 July 8, 2008.

Photo 38. Site BVC04 looking upstream from Transect 3 July 8, 2008.

Photo 39. Site BVC04 looking upstream from Transect 4 July 8, 2008.

Photo 40. Site BVC04 looking upstream from Transect 5 July 8, 2008.

Photo 41. Site BVC04 looking upstream from Transect 6 July 8, 2008.

Photo 42. Site BVC04 looking upstream from Transect 7 July 8, 2008.

Photo 43. Site BVC04 looking upstream from Transect 8 July 8, 2008.

Photo 44. Site BVC04 looking upstream from Transect 9 July 8, 2008.

Photo 45. Site BVC04 looking upstream from Transect 10 July 8, 2008.

Photo 46. Site BVC04 looking upstream from Transect 11 July 8, 2008.

Photo 47. Site BVC04 looking downstream from Transect 11 July 8, 2008.

POWERTECH (USA) INC.

APPENDIX 2.8-J

FISH COLLECTION DATA FORMS

S. D. GAME FISH AND PARKS - STREAM SURVEY FIELD DATA SHEET
REVISED 2JUL2008

Stream Name: Beaver Creek

Site Number:

Site Description: BVC01 - Beaver Creek downstream

DATE (d d m m m y y): 16APR08

Site Length (meters): 100 S 09 R 01E T 07S

pH:
Cond. (umhos/cm): 7186
Temp.(C) air:
Water: 11.8

	Dist. below top net (meters)	Stream Widths (meters)
	0	07.450 05.07
	10	07.560 04.08
	20	07.670 05.06
	30	07.180 06.05
	40	06.690 06.04
	100	06.010 06.03

Smith-Roots
Mode:
Volts:

Personnel: A. Wones, K. Shook

#1		#2		#3		#4	
#5		#6		#7		#8	
Data		Scales		Lengths		Weights	

	Pass #1	Pass #2	Pass #3	Pass #4	Pass #5
Start time: (hhmm)					
End time: (hhmm)					
Smith-Root (seconds)					
Shocker #1					
Smith-Root (seconds)					
Shocker #2					
Smith-Root (seconds)					
Shocker #3					

Barge Shocker:
Range (H/L): Percent: Amps: . Pulse:

Pass	Start time (h h m m)	End time (h h m m)	Duration (seconds)	Anode #1	Anode #2	Anode #3
1						
2						
3						
4						
5						

Stream Name: Beaver Creek

Bulk Weights - (Record #5)

	(mm)			(mm)			Pass#	Species			Total Number			Total Weight		
Size Range:	2	9	to	0	6	4	1	F	H	M	0	6	4	0	8	1
Size Range:	4	1	to	4	8		1	P	L	K	0	0	2	0	0	8
Size Range:			to	1	2	0	1	G	R	S	0	0	1	0	2	5
Size Range:	4	8	to	0	4	8	1	L	N	D	0	0	1	0	0	<1
Size Range:			to													
Size Range:			to													
Size Range:			to													
Size Range:			to													
Size Range:			to													
Size Range:			to													

Digital Photos - Description

Top Blocking Net Looking Upstream 122

Top Blocking Net Looking Downstream

Bottom Blocking Net Looking Upstream 116

Bottom Blocking Net Looking Downstream

Upstream blocknet UTM: E 579651; N 4811171

Downstream blocknet UTM: E 579745; N 4811201

Video Camera

Tape #:

Begin:

End:

	(d d m m m y y)	Personnel
Photos labeled:		
Photos filed:		

Comments: FHM = fathead minnow, GRS = Green Sunfish, LND = Long-Nosed Dace.
PLK = Plains Killifish.

DATA ENTRY - RECORD 2

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

Field Q.C. by:

Batch Number:

DATA ENTRY - RECORD 3

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 4

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 5

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

REVISED 2JUL2008

Stream Name Beaver Creek

Site Number BVC01

DATE dd-mmm-yy						
1	6	A	P	R	0	8

example 0 2 M A Y 9 2

Page __1__ of_1__

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments	Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	FHM	030					Fathead Minnow	51	1	FHM	053					
2	1	FHM	048						52	1	FHM	040					
3	1	FHM	060						53	1	FHM	056					
4	1	FHM	062						54	1	FHM	049					
5	1	FHM	046						55	1	FHM	050					
6	1	FHM	050						56	1	FHM	030					
7	1	FHM	061						57	1	FHM	061					
8	1	FHM	059						58	1	FHM	036					
9	1	FHM	048						59	1	FHM	049					
10	1	FHM	052						60	1	FHM	053					
11	1	FHM	058						61	1	FHM	059					
12	1	FHM	043						62	1	FHM	038					
13	1	FHM	043						63	1	FHM	036					
14	1	FHM	059						64	1	FHM	042	0081				Combined Wt. For all FHM
15	1	FHM	059						65	1	PLK	041					Plains Killifish
16	1	FHM	062						66	1	PLK	048	0008				Combined Wt. For all PLK
17	1	FHM	041						67	1	GRS	120	0025				Green Sunfish
18	1	FHM	048						68	1	LND	048	000<1				Long-Nosed Dace
19	1	FHM	056						69	1							
20	1	FHM	060						70	1							
21	1	FHM	050						71	1							
22	1	FHM	044						72	1							
23	1	FHM	045						73	1							
24	1	FHM	061						74	1							
25	1	FHM	054						75	1							
26	1	FHM	030						76	1							
27	1	FHM	059						77	1							
28	1	FHM	030						78	1							
29	1	FHM	055						79	1							
30	1	FHM	046						80	1							
31	1	FHM	050						81	1							
32	1	FHM	031						82	1							
33	1	FHM	052						83	1							
34	1	FHM	066						84	1							
35	1	FHM	056						85	1							
36	1	FHM	030						86	1							
37	1	FHM	032						87	1							
38	1	FHM	035						88	1							
39	1	FHM	030						89	1							
40	1	FHM	034						90	1							
41	1	FHM	059						91	1							
42	1	FHM	052						92	1							
43	1	FHM	057						93	1							
44	1	FHM	064						94	1							
45	1	FHM	058						95	1							
46	1	FHM	037						96	1							
47	1	FHM	029						97	1							
48	1	FHM	046						98	1							
49	1	FHM	035						99	1							
50	1	FHM	064						00	1							

S. D. GAME FISH AND PARKS - STREAM SURVEY FIELD DATA SHEET

REVISED 2JUL2008

Stream Name: Beaver Creek

Site Number:

Site Description: BVC04 - Upstream Site

DATE (d d m m m y y): 16APR08

Site Length (meters): 100 S R T

pH:

Cond. (umhos/cm): 5109

Temp.(C) air:

Water: 7.0

Smith-Roots: Mode: Volts:

Dist. below top net (meters)	Stream Widths (meters)
0	50.0
10	10.4 60.4 4.2
20	70
30	6.5 80 4.7
40	6.9 90
	100 6.0

Personnel:

#1		#2		#3		#4	
#5		#6		#7		#8	
Data		Scales		Lengths		Weights	

	Pass #1	Pass #2	Pass #3	Pass #4	Pass #5
Start time: (hhmm)					
End time: (hhmm)					
Smith-Root (seconds)					
Shocker #1					
Smith-Root (seconds)					
Shocker #2					
Smith-Root (seconds)					
Shocker #3					

Barge Shocker:

Range (H/L): Percent: Amps: . Pulse:

Pass	Start time (h h m m)	End time (h h m m)	Duration (seconds)	Anode #1	Anode #2	Anode #3
1						
2						
3						
4						
5						

Stream Name: Beaver Creek

Bulk Weights - (Record #5)

	(mm)			(mm)			Pass#	Species			Total Number			Total Weight		
Size Range:	4	9	to	1	1	2	1	G	R	S	0	0	4	0	3	0
Size Range:		0	to	2	1	5	1	C	H	C	0	0	1	0	7	2
Size Range:			to				1	C	A	P			3		2	8
Size Range:	4	2	to	0	6	6	1	P	L	K	0	1	0	0	1	4
Size Range:	2	1	to	0	6	6	1	F	H	M		8	4	0	9	2
Size Range:			to													
Size Range:			to													
Size Range:			to													
Size Range:			to													
Size Range:			to													

Digital Photos - Description

Top Blocking Net Looking Upstream

Top Blocking Net Looking Downstream

Bottom Blocking Net Looking Upstream

Bottom Blocking Net Looking Downstream

Upstream Blocknet E 571380 N 4820615

Downstream blocknet E 571444 N4820551

Video Camera

Tape #:

Begin:

End:

	(d d m m m y y)	Personnel
Photos labeled:		
Photos filed:		

Comments: GRS=Green Sunfish, CHC= Channel Catfish, PLK= Plains Killifish, FHM= Fathead Minnow CAP= CARP

Water temp 7.0 C at 11:28 and 16.03 at 18:43; Turbidity 11.8, DO 9.20

DATA ENTRY - RECORD 2

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

Field Q.C. by: A. Wones

Batch Number:

DATA ENTRY - RECORD 3

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 4

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 5

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

REVISED 2JULY, 2008

Stream Name Beaver Creek

Site Number BVC04

DATE dd-mmm-yy						
1	6	A	P	R	0	8

example 0 2 M A Y 9 2

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments	Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	GRS	112	0025				Green Sunfish	51	1	FHM	045					
2	1	GRS	050						52	1	FHM	047					
3	1	GRS	049						53	1	FHM	031					
4	1	GRS	053	0030				Comb. Wt	54	1	FHM	048					
5	1	CHC	215	0072				Channel Catfish	55	1	FHM	055					
6	1	PLK	04					Plains Killifish	56	1	FHM	040					
7	1	PLK	06						57	1	FHM	045					
8	1	PLK	04					Comb. Wt	58	1	FHM	046					
9	1	PLK	05						59	1	FHM	035					
10	1	PLK	04						60	1	FHM	045					
11	1	PLK	04						61	1	FHM	054					
12	1	PLK	04						62	1	FHM	039					
13	1	PLK	05						63	1	FHM	043					
14	1	PLK	04						64	1	FHM	031					
15	1	PLK	04						65	1	FHM	058					
16	1	CAP	111	0021				Carp	66	1	FHM	056					
17	1	CAP	062					Comb. Wt of #17,18=7g	67	1	FHM	047					
18	1	CAP	053	7				Comb. Wt	68	1	FHM	053					
19	1	FHM	052					Fathead Minnow	69	1	FHM	032					
20	1	FHM	041	92				Comb. Wt .	70	1	FHM	038					
21	1	FHM	042						71	1	FHM	041					
22	1	FHM	054						72	1	FHM	039					
23	1	FHM	035						73	1	FHM	051					
24	1	FHM	037						74	1	FHM	044					
25	1	FHM	041						75	1	FHM	038					
26	1	FHM	043						76	1	FHM	057					
27	1	FHM	036						77	1	FHM	050					
28	1	FHM	033						78	1	FHM	041					
29	1	FHM	044						79	1	FHM	044					
30	1	FHM	046						80	1	FHM	057					
31	1	FHM	052						81	1	FHM	045					
32	1	FHM	036						82	1	FHM	047					
33	1	FHM	050						83	1	FHM	043					
34	1	FHM	039						84	1	FHM	045					
35	1	FHM	057						85	1	FHM	046					
36	1	FHM	036						86	1	FHM	052					
37	1	FHM	033						87	1	FHM	047					
38	1	FHM	039						88	1	FHM	040					
39	1	FHM	065						89	1	FHM	048					
40	1	FHM	043						90	1	FHM	045					
41	1	FHM	060						91	1	FHM	047					
42	1	FHM	021						92	1	FHM	041					
43	1	FHM	040						93	1	FHM	045					
44	1	FHM	030						94	1	FHM	035					
45	1	FHM	039						95	1	FHM	039					
46	1	FHM	056						96	1	FHM	047					
47	1	FHM	054						97	1	FHM	058					
48	1	FHM	063						98	1	FHM	047					
49	1	FHM	049						99	1	FHM	031					
50	1	FHM	066						_00	1	FHM	027					

S. D. GAME FISH AND PARKS - STREAM SURVEY FIELD DATA SHEET

REVISED 2JUL2008

Stream Name: Cheyenne River

Site Number:

Site Description: Site CHR05 - Cheyenne River at Marietta

DATE (d d m m m y y): 15 APR 08

Site Length (meters): 100 S 06 R 02E T 39N

pH:

Cond. (umhos/cm):

Temp.(C) air:

Water: 15.0

Dist. below top net (meters)

Stream Widths (meters)

0		5 0			
1 0		6 0			
2 0		7 0			
3 0		8 0			
4 0		9 0			
		1 0 0			

Smith-Roots

Mode:

Volts:

Personnel:

#1		#2		#3		#4	
#5		#6		#7		#8	
Data		Scales		Lengths		Weights	

	Pass #1	Pass #2	Pass #3	Pass #4	Pass #5
Start time: (hhmm)					
End time: (hhmm)					
Smith-Root (seconds)					
Shocker #1					
Smith-Root (seconds)					
Shocker #2					
Smith-Root (seconds)					
Shocker #3					

Barge Shocker:

Range (H/L): Percent: Amps: . Pulse:

Pass	Start time (h h m m)	End time (h h m m)	Duration (seconds)	Anode #1	Anode #2	Anode #3
1						
2						
3						
4						
5						

REVISED 2JUL2008

Stream Name: Cheyenne River

Bulk Weights - (Record #5)

	(mm)			(mm)			Pass#	Species			Total Number			Total Weight		
Size Range:	9	7	to	0	9	7		R	I	C	0	0	1	0	1	3
Size Range:	9	8	to	0	9	8		G	R	S	0	0	1	0	2	0
Size Range:	3	2	to	0	7	4		P	L	K	0	4	8	0	6	9
Size Range:	8	2	to	2	2	0		S	R	S	0	1	4	6	1	2
Size Range:	5	1	to	0	5	1		P	T	M	0	0	1	0	0	<1
Size Range:	3	1	to	0	6	7		S	A	S	0	3	8	0	5	3
Size Range:	2	5	to	0	8	8		C	R	C	1	0	0	0	9	1
Size Range:			to													
Size Range:			to													
Size Range:			to													

Digital Photos - Description

Top Blocking Net Looking Upstream

Top Blocking Net Looking Downstream

Bottom Blocking Net Looking Upstream

Bottom Blocking Net Looking Downstream

Upstream blocknet at UTM E0587455 N4804678

Downstream blocknet at UTM E0587538 N4804736

Video Camera

Tape #:

Begin:

End:

	(dd mm mm yy)	Personnel
Photos labeled:		
Photos filed:		

Comments: RIC= River Carpsucker; GRS = Green Sunfish; PLK = Plains kilifish; SRS = Shorthead Redhorse Sucker; PTM = Plains Topminnow; SAS = Sand Shiner; CRC = Creek Chub.

DATA ENTRY - RECORD 2

	(dd mm mm yy)	Personnel
Data Entry		
Verification:		

Field Q.C. by: A. Wones

Batch Number:

DATA ENTRY - RECORD 3

	(dd mm mm yy)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 4

	(dd mm mm yy)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 5

	(dd mm mm yy)	Personnel
Data Entry		
Verification:		

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

Revised: 08JUL08

Stream Name Cheyenne River

Site Number CHR05

DATE dd-mmm-yy: 15APR08

example 02MAY92

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	CRC	039					Creek Chu
2	1	CRC	068	091				Combined wt =
3	1	CRC	049					
4	1	CRC	050					
5	1	CRC	061					
6	1	CRC	045					
7	1	CRC	075					
8	1	CRC	039					
9	1	CRC	046					
10	1	CRC	038					
11	1	CRC	041					
12	1	CRC	035					
13	1	CRC	035					
14	1	CRC	058					
15	1	CRC	043					
16	1	CRC	040					
17	1	CRC	040					
18	1	CRC	060					
19	1	CRC	049					
20	1	CRC	037					
21	1	CRC	041					
22	1	CRC	033					
23	1	CRC	032					
24	1	CRC	052					
25	1	CRC	031					
26	1	CRC	026					
27	1	CRC	050					
28	1	CRC	046					
29	1	CRC	054					
30	1	CRC	045					
31	1	CRC	052					
32	1	CRC	033					
33	1	CRC	030					
34	1	CRC	050					
35	1	CRC	035					
36	1	CRC	071					
37	1	CRC	048					
38	1	CRC	066					
39	1	CRC	044					
40	1	CRC	041					
41	1	CRC	040					
42	1	CRC	039					
43	1	CRC	036					
44	1	CRC	070					
45	1	CRC	051					
46	1	CRC	042					
47	1	CRC	088					
48	1	CRC	036					
49	1	CRC	077					
50	1	CRC	075					
51	1	CRC	044					
52	1	CRC	042					
53	1	CRC	045					
54	1	CRC	077					
55	1	CRC	037					
56	1	CRC	048					
57	1	CRC	041					
58	1	CRC	074					
59	1	CRC	037					
60	1	CRC	038					
61	1	CRC	039					
62	1	CRC	040					
63	1	CRC	025					
64	1	CRC	042					
65	1	CRC	030					
66	1	CRC	052					
67	1	CRC	030					
68	1	CRC	058					
69	1	CRC	043					
70	1	CRC	060					
71	1	CRC	062					
72	1	CRC	052					
73	1	CRC	041					
74	1	CRC	058					
75	1	CRC	044					
76	1	CRC	041					
77	1	CRC	040					
78	1	CRC	042					
79	1	CRC	060					
80	1	CRC	038					
81	1	CRC	070					
82	1	CRC	057					
83	1	CRC	049					
84	1	CRC	047					
85	1	CRC	059					
86	1	CRC	059					
87	1	CRC	038					
88	1	CRC	058					
89	1	CRC	040					
90	1	CRC	032					
91	1	CRC	037					
92	1	CRC	036					
93	1	CRC	047					
94	1	CRC	041					
95	1	CRC	056					
96	1	CRC	048					
97	1	CRC	050					
98	1	CRC	040					
99	1	CRC	040					
00	1	CRC	045					

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

Revised: 2JUL08

Stream Name Cheyenne River

Site Number CHR05

DATE dd-mmm-yy
15APR08

example 02MAY92

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	RIC	097	0013				likely River carpsucker
2	1	GRS	098	0020				Green sunfish
3	1	PLK	058					Plains killifish.
4	1	PLK	065	0069				Combined wt
5	1	PLK	035					
6	1	PLK	057					
7	1	PLK	039					
8	1	PLK	070					
9	1	PLK	042					
10	1	PLK	072					
11	1	PLK	046					
12	1	PLK	036					
13	1	PLK	044					
14	1	PLK	052					
15	1	PLK	065					
16	1	PLK	040					
17	1	PLK	067					
18	1	PLK	068					
19	1	PLK	052					
20	1	PLK	060					
21	1	PLK	060					
22	1	PLK	074					
23	1	PLK	048					
24	1	PLK	041					
25	1	PLK	040					
26	1	PLK	032					
27	1	PLK	064					
28	1	PLK	057					
29	1	PLK	040					
30	1	PLK	043					
31	1	PLK	053					
32	1	PLK	068					
33	1	PLK	037					
34	1	PLK	042					
35	1	PLK	034					
36	1	PLK	046					
37	1	PLK	036					
38	1	PLK	040					
39	1	PLK	049					
40	1	PLK	048					
41	1	PLK	060					
42	1	PLK	041					
43	1	PLK	032					
44	1	PLK	051					
45	1	PLK	038					
46	1	PLK	040					
47	1	PLK	060					
48	1	PLK	045					
49	1	PLK	036					
50	1	PLK	044					
51	1	SRS	174	0072				Shorthead redhorse sucker
52	1	SRS	220	0122				
53	1	SRS	201	0100				
54	1	SRS	197	0094				
55	1	SRS	178	0080				
56	1	SRS	169	0054				
57	1	SRS	110	0007				
58	1	SRS	084	0005				
59	1	SRS	085	0003				
60	1	SRS	195	0098				
61	1	SRS	173	0068				
62	1	SRS	082	0003				
63	1	SRS	083	0003				
64	1	SRS	088	0003				
65	1	PTM	051	000<1				Plains Topminnow
66	1	SAS	067					Sand Shiner.
67	1	SAS	038	0053				Combined Wt
68	1	SAS	062					
69	1	SAS	058					
70	1	SAS	059					
71	1	SAS	060					
72	1	SAS	049					
73	1	SAS	047					
74	1	SAS	058					
75	1	SAS	059					
76	1	SAS	044					
77	1	SAS	047					
78	1	SAS	040					
79	1	SAS	055					
80	1	SAS	062					
81	1	SAS	051					
82	1	SAS	063					
83	1	SAS	044					
84	1	SAS	031					
85	1	SAS	045					
86	1	SAS	039					
87	1	SAS	057					
88	1	SAS	057					
89	1	SAS	057					
90	1	SAS	035					
91	1	SAS	034					
92	1	SAS	043					
93	1	SAS	046					
94	1	SAS	057					
95	1	SAS	049					
96	1	SAS	033					
97	1	SAS	050					
98	1	SAS	029					
99	1	SAS	043					
00	1	SAS	045					

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

Revised: 2JUL08

Stream Name Cheyenne River

Site Number CHR05

DATE dd-mmm-yy: 15APR08 (example 02MAY92)

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments	Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	SAS	033					Sand Shiner	51	1							
2	1	SAS	032						52	1							
3	1	SAS	032						53	1							
4	1								54	1							
5	1								55	1							
6	1								56	1							
7	1								57	1							
8	1								58	1							
9	1								59	1							
10	1								60	1							
11	1								61	1							
12	1								62	1							
13	1								63	1							
14	1								64	1							
15	1								65	1							
16	1								66	1							
17	1								67	1							
18	1								68	1							
19	1								69	1							
20	1								70	1							
21	1								71	1							
22	1								72	1							
23	1								73	1							
24	1								74	1							
25	1								75	1							
26	1								76	1							
27	1								77	1							
28	1								78	1							
29	1								79	1							
30	1								80	1							
31	1								81	1							
32	1								82	1							
33	1								83	1							
34	1								84	1							
35	1								85	1							
36	1								86	1							
37	1								87	1							
38	1								88	1							
39	1								89	1							
40	1								90	1							
41	1								91	1							
42	1								92	1							
43	1								93	1							
44	1								94	1							
45	1								95	1							
46	1								96	1							
47	1								97	1							
48	1								98	1							
49	1								99	1							
50	1								00	1							

S. D. GAME FISH AND PARKS - STREAM SURVEY FIELD DATA SHEET

Stream Name: Beaver Creek

Site Number:

DATE (d d m m m y y): 10JUL08

Site Description: BVC01 - Beaver Creek downstream

Site Length (meters): 100 S 09 R 01E T 07S

pH: 7.9

Cond. (umhos/cm): 2141

Temp.(C) air: 25.5

Water: 23.4

Dist. below top net (meters)	Stream Widths (meters)
0	0.5
10	6.0
20	7.0
30	8.0
40	9.0
	10.0

Smith-Roots: Mode: ___ Volts: ___

Personnel: A. Wones, K. Shook, M. Winland

#1 Data ___ #2 Scales ___ #3 Lengths ___ #4 Weights ___

#5 ___ #6 ___ #7 ___ #8 ___

	Pass #1	Pass #2	Pass #3	Pass #4	Pass #5
Start time: (hhmm)					
End time: (hhmm)					
Smith-Root (seconds)					
Shocker #1					
Smith-Root (seconds)					
Shocker #2					
Smith-Root (seconds)					
Shocker #3					

Barge Shocker:

Range (H/L): Percent: Amps: . Pulse:

Pass	Start time (h h m m)	End time (h h m m)	Duration (seconds)	Anode #1	Anode #2	Anode #3
1						
2						
3						
4						
5						

Stream Name: Beaver Creek

Bulk Weights - (Record #5)

	(mm)			(mm)			Pass#	Species			Total Number			Total Weight		
Size Range:			to	1	7	1	1	C	A	P			1		7	3
Size Range:	4	8	to		6	3	1	P	T	M			6		1	2
Size Range:			to		7	3	1	P	L	M			1			3
Size Range:			to		5	9	1	L	N	D			1			2
Size Range:	4	4	to		5	6	1	S	A	S		1	0		1	0
Size Range:	5	0	to		7	1	1	P	L	K			5			9
Size Range:	4	1	to		6	7	1	F	H	M		3	3		5	2
Size Range:			to													
Size Range:			to													
Size Range:			to													

Digital Photos - Description

Top Blocking Net Looking Upstream 107

Top Blocking Net Looking Downstream 108

Bottom Blocking Net Looking Upstream 103

Bottom Blocking Net Looking Downstream 104

Upstream blocknet UTM: N 579656; E 4811179

Downstream blocknet UTM: E 579641; N 4811209

Video Camera

Tape #:

Begin:

End:

	(d d m m m y y)	Personnel
Photos labeled:		
Photos filed:		

Comments: FHM = fathead minnow, LND = Long-Nosed Dace, SAS = Sand Shiner.
PLK = Plains Killifish, CAP = Carp, PTM = Plains Topminnow.
Mid reach looking upstream = 107, looking downstream 108.

DATA ENTRY - RECORD 2

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

Field Q.C. by: A. Wones

Batch Number:

DATA ENTRY - RECORD 3

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 4

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 5

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

Stream Name Beaver Creek
Site Number BVC01

DATE dd-mmm-yy: 1 0 J U L 0 8 (example 0 2 M A Y 9 2)

Page 1 OF 1

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments	Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	CAP	171	73				R	51	1	FHM	57					
2	1	PTM	61	12				R,C(#2-7)	52	1	FHM	48					
3	1	PTM	52					R	53	1	FHM	47					
4	1	PTM	48					R	54	1	FHM	44					
5	1	PTM	63					R	55	1	FHM	47					
6	1	PTM	62					V	56	1	FHM	42					
7	1	PTM	50					R	57	1	SAS	44	<1				
8	1	PLM	73	3				V	58	1							
9	1	LND	59	2				V	59	1							
10	1	SAS	62	7				R,(C#10-14)	60	1							
11	1	SAS	53					R	61	1							
12	1	SAS	53					R	62	1							
13	1	SAS	46					R	63	1							
14	1	SAS	56					R	64	1							
15	1	SAS	49	3				V,C(#15-18)	65	1							
16	1	SAS	58					V	66	1							
17	1	SAS	40					V	67	1							
18	1	SAS	43					V	68	1							
19	1	PLK	71	9				R,(C#19-23)	69	1							
20	1	PLK	60					R	70	1							
21	1	PLK	62					R	71	1							
22	1	PLK	57					R	72	1							
23	1	PLK	50					R	73	1							
24	1	FHM	48	52				C(#24-56)	74	1							
25	1	FHM	50						75	1							
26	1	FHM	48						76	1							
27	1	FHM	42						77	1							
28	1	FHM	43						78	1							
29	1	FHM	42						79	1							
30	1	FHM	59						80	1							
31	1	FHM	50						81	1							
32	1	FHM	48						82	1							
33	1	FHM	46						83	1							
34	1	FHM	58						84	1							
35	1	FHM	49						85	1							
36	1	FHM	54						86	1							
37	1	FHM	49						87	1							
38	1	FHM	60						88	1							
39	1	FHM	67						89	1							
40	1	FHM	57						90	1							
41	1	FHM	45						91	1							
42	1	FHM	53						92	1							
43	1	FHM	46						93	1							
44	1	FHM	44						94	1							
45	1	FHM	41						95	1							
46	1	FHM	58						96	1							
47	1	FHM	46						97	1							
48	1	FHM	56						98	1							
49	1	FHM	55						99	1							
50	1	FHM	50						00	1							

Comments: R = sample collected for radiological testing, V = voucher specimen, C = combined weight
5 voucher and 5 radiological samples taken from # 24-56

S. D. GAME FISH AND PARKS - STREAM SURVEY FIELD DATA SHEET

Stream Name: Beaver Creek

Site Number:

DATE (d d m m m y y): 1 0 J U L 0 8

Site Description: BVC04 - Beaver Creek upstream

Site Length (meters): 1 0 0 S R T

pH:

Cond. (umhos/cm):

Temp.(C) air: 3 5 . 0

Water: 2 8 . 0

Dist. below top net (meters)	Stream Widths (meters)
0	0 0 . 5 0 0 .
1 0	0 0 . 6 0 0 .
2 0	0 0 . 7 0 0 .
3 0	0 0 . 8 0 0 .
4 0	0 0 . 9 0 0 .
	1 0 0 0 .

Smith-Roots
Mode:
Volts:

Personnel: A. Wones, K. Shook, M. Winland

#1 Data | #2 Scales | #3 Lengths | #4 Weights | #5 | #6 | #7 | #8

	Pass #1	Pass #2	Pass #3	Pass #4	Pass #5
Start time: (hhmm)					
End time: (hhmm)					
Smith-Root (seconds)					
Shocker #1					
Smith-Root (seconds)					
Shocker #2					
Smith-Root (seconds)					
Shocker #3					

Barge Shocker:

Range (H/L): Percent: Amps: . Pulse:

Pass	Start time (h h m m)	End time (h h m m)	Duration (seconds)	Anode #1	Anode #2	Anode #3
1						
2						
3						
4						
5						

Stream Name: Beaver Creek

Bulk Weights - (Record #5)

	(m m)			(m m)			Pass#	Species			Total Number			Total Weight		
Size Range:			to	1	3	6	1	S	H	R			1	1	3	0
Size Range:			to	2	6	0	1	C	A	P			1	2	3	7
Size Range:	4	8	to		6	8	1	P	L	K			9		1	3
Size Range:	4	3	to		6	1	1	F	H	M		4	7		6	4
Size Range:	6	3	to		6	4	1	L	N	D			2			5
Size Range:	4	5	to		5	8	1	S	A	S		2	6		3	5
Size Range:			to													
Size Range:			to													
Size Range:			to													
Size Range:			to													

Digital Photos - Description

Top Blocking Net Looking Upstream 122

Top Blocking Net Looking Downstream 123

Bottom Blocking Net Looking Upstream 118

Bottom Blocking Net Looking Downstream 119

Upstream blocknet WGS84 UTM: E 5791444; N 4820573

Downstream blocknet WGS84 UTM: E 571373; N 4820623

Video Camera

Tape #:				
Begin:				
End:				

	(d d m m m y y)	Personnel
Photos labeled:		
Photos filed:		

Comments: FHM = fathead minnow, LND = Long-Nosed Dace, SAS = Sand Shiner.
SHR = Shorthead Redhorse Sucker, CAP = Carp, PLK = Plains Killifish.
Photo of the middle of reach looking upstream: 120, looking downstream: 121

DATA ENTRY - RECORD 2

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

Field Q.C. by: A. Wones

Batch Number:

DATA ENTRY - RECORD 3

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 4

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 5

	(d d m m m y y)	Personnel
Data Entry		
Verification:		

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

Stream Name Beaver Creek
Site Number BVC04

DATE dd-mmm-yy: 10JUL08 (example 02MAY92)

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments	Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	SHR	136	130				R	51	1	FHM	45					
2	1	CAP	260	237				R	52	1	FHM	51					
3	1	PLK	56	13				C	53	1	FHM	57					
4	1	PLK	68						54	1	FHM	55					
5	1	PLK	58						55	1	FHM	47					
6	1	PLK	48						56	1	FHM	53					
7	1	PLK	48						57	1	FHM	42					
8	1	PLK	62						58	1	FHM	49					
9	1	PLK	54						59	1	LND	63	3				V
10	1	PLK	52						60	1	LND	64	2				V
11	1	PLK	50						61	1	SAS	45	35				C
12	1	FHM	50	64				c	62	1	SAS	50					
13	1	FHM	49						63	1	SAS	47					
14	1	FHM	47						64	1	SAS	48					
15	1	FHM	55						65	1	SAS	51					
16	1	FHM	47						66	1	SAS	56					
17	1	FHM	55						67	1	SAS	55					
18	1	FHM	57						68	1	SAS	52					
19	1	FHM	49						69	1	SAS	55					
20	1	FHM	43						70	1	SAS	58					
21	1	FHM	60						71	1	SAS	57					
22	1	FHM	50						72	1	SAS	52					
23	1	FHM	55						73	1	SAS	51					
24	1	FHM	46						74	1	SAS	54					
25	1	FHM	51						75	1	SAS	48					
26	1	FHM	50						76	1	SAS	51					
27	1	FHM	51						77	1	SAS	53					
28	1	FHM	51						78	1	SAS	48					
29	1	FHM	50						79	1	SAS	52					
30	1	FHM	47						80	1	SAS	54					
31	1	FHM	44						81	1	SAS	54					
32	1	FHM	54						82	1	SAS	57					
33	1	FHM	50						83	1	SAS	51					
34	1	FHM	46						84	1	SAS	52					
35	1	FHM	45						85	1	SAS	52					
36	1	FHM	49						86	1	SAS	52					
37	1	FHM	55						87	1							
38	1	FHM	49						88	1							
39	1	FHM	47						89	1							
40	1	FHM	49						90	1							
41	1	FHM	52						91	1							
42	1	FHM	49						92	1							
43	1	FHM	55						93	1							
44	1	FHM	53						94	1							
45	1	FHM	49						95	1							
46	1	FHM	50						96	1							
47	1	FHM	61						97	1							
48	1	FHM	45						98	1							
49	1	FHM	46						99	1							
50	1	FHM	49						00	1							

Comments: R = sample collected for radiological testing, V = voucher specimen, C = combined weight
5 voucher and 5 radiological samples taken from # 12-58 (PHM), and from #61-86(SAS)

S. D. GAME FISH AND PARKS - STREAM SURVEY FIELD DATA SHEET

REVISED 2JUL2008

Stream Name: Cheyenne River

Site Number:

Site Description: Site CHR05 - Cheyenne River at Marietta

DATE (d d m m m y y): 15 APR 08

Site Length (meters): 100 S 06 R 02E T 39N

pH:

Cond. (umhos/cm):

Temp.(C) air:

Water: 15.0

Dist. below top net (meters)

Stream Widths (meters)

0		50			
10		60			
20		70			
30		80			
40		90			
		100			

Smith-Roots

Mode:

Volts:

Personnel:

#1		#2		#3		#4	
#5		#6		#7		#8	
Data		Scales		Lengths		Weights	

	Pass #1	Pass #2	Pass #3	Pass #4	Pass #5
Start time: (hhmm)					
End time: (hhmm)					
Smith-Root (seconds)					
Shocker #1					
Smith-Root (seconds)					
Shocker #2					
Smith-Root (seconds)					
Shocker #3					

Barge Shocker:

Range (H/L): Percent: Amps: . Pulse:

Pass	Start time (h h m m)	End time (h h m m)	Duration (seconds)	Anode #1	Anode #2	Anode #3
1						
2						
3						
4						
5						

REVISED 2JUL2008

Stream Name: Cheyenne River

Bulk Weights - (Record #5)

	(mm)			(mm)			Pass#	Species	Total Number	Total Weight
Size Range:	97	to	097					RIC	001	013
Size Range:	98	to	098					GRS	001	020
Size Range:	32	to	074					PLK	048	069
Size Range:	82	to	220					SRS	014	612
Size Range:	51	to	051					PTM	001	00<1
Size Range:	31	to	067					SAS	038	053
Size Range:	25	to	088					CRC	100	091
Size Range:		to								
Size Range:		to								
Size Range:		to								

Digital Photos - Description

Top Blocking Net Looking Upstream

Top Blocking Net Looking Downstream

Bottom Blocking Net Looking Upstream

Bottom Blocking Net Looking Downstream

Upstream blocknet at UTM E0587455 N4804678

Downstream blocknet at UTM E0587538 N4804736

Video Camera

Tape #:

Begin:

End:

	(dd mm my)	Personnel
Photos labeled:		
Photos filed:		

Comments: RIC= River Carpsucker; GRS = Green Sunfish; PLK = Plains kilifish; SRS = Shorthead Redhorse Sucker; PTM = Plains Topminnow; SAS = Sand Shiner; CRC = Creek Chub.

DATA ENTRY - RECORD 2

	(dd mm my)	Personnel
Data Entry		
Verification:		

Field Q.C. by: A. Wones

Batch Number:

DATA ENTRY - RECORD 3

	(dd mm my)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 4

	(dd mm my)	Personnel
Data Entry		
Verification:		

DATA ENTRY - RECORD 5

	(dd mm my)	Personnel
Data Entry		
Verification:		

SOUTH DAKOTA GAME FISH AND PARKS 3305 WEST SOUTH STREET RAPID CITY, SD 57702

Stream Name Cheyenne River
Site Number CHR05

DATE dd-mmm-yy: 09 JUL 08 (example 02 MAY 92)

Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments	Fish ID #	Pass #	Species Code	Total Length (mm)	Weight (grams)	Sca.	Mor.	Sex	Comments
1	1	RIC	415	1500				R	51	1	SAS	51					
2	1	RIC	426	1200				R	52	1	SAS	45					
3	1	RIC	405	980				R	53	1	SAS	50					
4	1	RIC	381	820				R	54	1	SAS	44					
5	1	SRS	160	46				R	55	1	SAS	60					
6	1	SRS	144	32				R	56	1	SAS	47					
7	1	CAP	135	31				R	57	1	SAS	54					
8	1	CHC	290	166				R	58	1	SAS	46					
9	1	CHC	196	50				R	59	1	SAS	52					
10	1	CHC	181	49				R	60	1	SAS	46	6				V,C(60-64)
11	1	LND	74	4				V	61	1	SAS	45					V
12	1	PLK	72	10				R,C (#12-16)	62	1	SAS	50					V
13	1	PLK	59					R	63	1	SAS	46					V
14	1	PLK	51					R	64	1	SAS	50					V
15	1	PLK	68					R	65	1	FHM	46	7				R,C(65-74)
16	1	PLK	46					R	66	1	FHM	38					R
17	1	PLK	54	3			3	V,C(#17-18)	67	1	FHM	60					R
18	1	PLK	53					V	68	1	FHM	44					R
19	1	SAS	49	7				R,C(#19-23)	69	1	FHM	51					R
20	1	SAS	50					R	70	1	FHM	48					V
21	1	SAS	53					R	71	1	FHM	46					V
22	1	SAS	46					R	72	1	FHM	46					V
23	1	SAS	48					R	73	1	FHM	47					V
24	1	SAS	50	54				C	74	1	FHM	47					V
25	1	SAS	46						75	1							
26	1	SAS	49						76	1							
27	1	SAS	43						77	1							
28	1	SAS	47						78	1							
29	1	SAS	46						79	1							
30	1	SAS	50						80	1							
31	1	SAS	47						81	1							
32	1	SAS	45						82	1							
33	1	SAS	53						83	1							
34	1	SAS	46						84	1							
35	1	SAS	52						85	1							
36	1	SAS	52						86	1							
37	1	SAS	42						87	1							
38	1	SAS	47						88	1							
39	1	SAS	51						89	1							
40	1	SAS	49						90	1							
41	1	SAS	46						91	1							
42	1	SAS	54						92	1							
43	1	SAS	52						93	1							
44	1	SAS	46						94	1							
45	1	SAS	48						95	1							
46	1	SAS	53						96	1							
47	1	SAS	52						97	1							
48	1	SAS	54						98	1							
49	1	SAS	47						99	1							
50	1	SAS	46						00	1							

Comments: R = sample collected for radiological testing, V = voucher specimen, C = combined weight

POWERTECH (USA) INC.

APPENDIX 2.9-A

BASELINE RADIOLOGICAL REPORT

BASELINE RADIOLOGICAL INVESTIGATION REPORT (REVISED)

POWERTECH (USA) INC.
DEWEY-BURDOCK ISR LICENSING SUPPORT
KNIGHT PIESOLD PROJECT NO. DV10200279.01

December 13, 2013

Prepared By:

Environmental Restoration Group, Inc.
8809 Washington St. NE, Suite 150
Albuquerque, New Mexico 87113

BASELINE RADIOLOGICAL INVESTIGATION REPORT (REVISED)

POWERTECH (USA) INC.
BASELINE SOIL AND VEGETATION RADIOLOGICAL INVESTIGATION
KNIGHT PIESOLD PROJECT NO. DV10200279.01

Prepared for: **Powertech (USA) Inc.**
Greenwood Village, CO

Prepared by: **Environmental Restoration Group, Inc.**
Albuquerque, NM

Author Approval

12/13/2013

Michael J. Schierman, Certified Health Physicist — Date

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Acronyms and Abbreviations

Acronym	Definition
AMS	Air Monitoring Station
CFR	Code of Federal Regulations
cm	centimeters
cpm	counts per minute
Powertech	Powertech (USA), Inc.
ERG	Environmental Restoration Group
EPA	U.S. Environmental Protection Agency
GIS	Geographic Information System
GPS	Global Positioning System
IQR	Interquartile Range
ISR	In Situ Recovery
LLD	Lower Limit of Detection
MDC	Minimum Detectable Concentration
mrem/yr	millirem per year
N	sample number
NaI	Sodium Iodide (detector)
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
pCi/f, g, L, m^2-s	picocuries per filter, gram, liter, per meter square per second
PIC	pressurized ion chamber
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RER	Relative Error Ratio
RPD	Relative Percent Difference
SOP	Standard Operating Procedure
TLD	Thermoluminescent Detector
µCi/g, kg, ml	microcuries per gram, kilogram, milliliter
U-nat	Natural Uranium
µR/hr	microRoentgens per hour

1.0 INTRODUCTION

This report presents the results of a baseline radiological study conducted for the Dewey-Burdock uranium in situ recovery (ISR) Project site owned by Powertech (USA), Inc. The work was performed by Environmental Restoration Group (ERG) under contract to Knight Piesold and Company (Knight Piesold) in accordance with the Baseline Radiological Sampling Plan, herein referred to as the Sampling Plan (ERG, 2007). The work was performed between August 2007 and August 2008 to obtain a radioactive materials license from the U.S. Nuclear Regulatory Commission (NRC).

1.1 Description of the Project

The approximately 11,000-acre project site is a sparsely populated region of open rangeland north of the city of Edgemont, South Dakota as shown in Figure 1-1. It is located in Fall River and Custer Counties on the southwest flank of the Black Hills uplift. It is part of the northern extension of the Edgemont uranium district discovered in the 1950s. The eastern portion of the site includes historic open pit surface uranium mines that have not been reclaimed. This is area is referred to as the surface mine area in this report.

The general process of uranium in situ recovery will involve the oxidation of uranium from its reduced state within the rollfront using a leaching solution (lixiviant) such as gaseous oxygen, hydrogen peroxide and gaseous carbon dioxide to solubilize the uranium ion causing it to go into solution in the ore bearing aquifer. Once solubilized, the uranium will be pumped to the surface where it is complexed onto ion exchange resins, then eluted and precipitated before drying and packaging. Mining units will include wellfields consisting of injection, recovery and monitoring wells. A central processing plant will be constructed on the site to recover and package the final product.

Figure 1-2 shows the site, including the roll fronts near the towns of Dewey and Burdock, the main permit and surface mine areas, and an anomalous area of elevated radioactivity in the north portion of the main permit area.

1.2 Purpose and Scope

This report provides baseline radiological data for surface soils (0-5 and 0-15 centimeters [cm]), subsurface soils to a depth of 1 meter, vegetation, locally grazed livestock, direct radiation, radon-222 in air; and radon-222 flux rates representative of the Dewey-Burdock property.

Field investigations, sample collection, and other quality-related work performed were conducted in accordance with applicable ERG standard operating procedures (SOPs), listed below:

- SOP .010 Radon Flux Canister Deployment
- SOP 1.22 Determining the Concentration of Airborne Radioactive Particles
- SOP 1.05 Calibration of Scaler, Ratemeters

- SOP 1.51 Correlation between Gamma-Ray Count Rate and Exposure Rate
- SOP 2.02 General Equipment Decontamination
- SOP 2.07 Function Check of Equipment
- SOP 2.09 Correlation between Gamma-Ray Measurements and Radium-226 in Soil
- SOP 3.02 Sample Control and Documentation
- SOP 5.01 Setup and Operation of Trimble Pro XRS GPS Receiver with Trimble TSCe Datalogger
- SOP 5.02 Download, Correction, and Export of GPS Survey Data
- SOP 5.06 Creating, Uploading, and Navigating to Waypoints
- SOP 7.08 Surface and Shallow Subsurface Soil Sampling
- SOP 7.09 Vegetation Sampling

2.0 SCOPE OF BASELINE FIELD INVESTIGATION

2.1 Overall Scope of Project

The baseline radiological field investigations consisted of the following activities:

- Performing a Global Positioning System (GPS)-based gamma survey at 100 to 500 meter transects spanning the permit area;
- Performing a second GPS-based gamma survey of two, collective land application areas at 100 meter transects;
- Collecting surface soil samples (0-15 cm) at 75 randomly selected and at 5 biased locations;
- Collecting subsurface soil samples at nine randomly selected locations taken at depth intervals of 15-30 cm and 30-100 cm;
- Collecting surface (0-15 cm) and subsurface samples at the same depth intervals at 17 randomly selected locations in the land application areas;
- Monitoring radionuclide concentrations in air at one background and seven additional Air Monitoring Stations (AMS) locations;

- Collecting shallow (0-5 cm) surface soil and vegetation samples at each AMS;
- Monitoring radon concentrations in ambient air;
- Taking radon flux measurements at nine locations coinciding with the subsurface samples;
- Monitoring exposure rates, using a High Pressurized Ion Chamber (PIC) and thermoluminescent detectors (TLDs); and
- Collecting samples of locally grazed livestock including beef and pigs.

Table 2-1 summarizes the scope of the field investigation. All soil, vegetation, and air particulate samples were shipped under chain-of-custody to a National Environmental Accreditation Conference-certified laboratory, Energy Laboratories in Casper, Wyoming.

The units reported in the body, tables, and figures of this document vary. NRC Regulatory Guide 4.14, *Radiological Effluent and Environmental Monitoring at Uranium Mills* has specific requirements for unit reporting in tables. For example, NRC Regulatory Guide 4.14 recommends that radionuclide soil concentrations be reported in units of microcuries per gram (µCi/g). Where applicable, the tables adopt this unit. The main body of the report, however, adopts the unit picocuries per gram (pCi/g) for this parameter, as this unit is used more generally and consistently by the uranium industry and public.

3.0 GPS-BASED GAMMA-RAY (DIRECT RADIATION) SURVEYS

This section documents the results of the baseline direct radiation (gamma-ray) surveys of the Dewey-Burdock property conducted in September 2007 and July 2008. An introduction to the survey methods is followed by a discussion of the results.

3.1 GPS Survey Methods

A GPS-based gamma survey was conducted over the main permit and surface mine areas of the Dewey-Burdock Uranium Project in September 2007 and July 2008. The initial GPS-based gamma survey was performed in the main permit area and surface mine area using 500-meter and 100-meter transect spacing, respectively, from September 13-27, 2007. The boundary of the main permit area was later extended to the southwest. Refer to Figure 3-1 for the location of main permit area and surface mine area. The 500-meter survey lines were extended south to this new boundary by mobilizing to the site and conducting the survey on July 14, 2008. Work continued from July 17-19, 2008, where additional data within the land application areas were obtained to comply with the desire to have data on 100-meter transect spacing therein. Transects at a spacing of 100 meters were added within the previously determined 500-meter transects within the land application areas only. Land application areas are depicted on Figure 3-3. Figures 3-1 and 3-3 indicate the locations of gamma-ray surveys. Figure 3-4 depicts the relative locations of the 2007 and 2008 gamma-ray surveys.

Unshielded 2"x 2" sodium iodide (NaI) detectors were coupled to a ratemeter/scaler (set in ratemeter mode) and a Trimble Pro XRS GPS Receiver with Trimble TSCe Datalogger. Survey transects were spaced at approximately 500-meter intervals in the main permit area and 100 meters in the surface mine area. The transect spacing was reduced in the surface mine area in anticipation of finding a greater variation in gamma-ray emissions, due to historical mining in the area. The survey speed was maintained between 2 and 5 feet per second with x- and y-coordinates and gamma-ray count rates recorded every second. The detector height was held relatively constant at approximately 18 inches above ground surface. Depending on the terrain, field personnel surveyed using ATVs or by walking with the equipment in backpacks.

A second GPS-based gamma survey was conducted over the land application areas from July 17-19, 2008, using the Ludlum gamma-ray detection system described above with the same response characteristics as used in the initial survey. The scanning speed and detection height were unchanged from the initial survey and the transect spacing was 100 meters.

The function of survey instruments was checked at the beginning and end of each work day using a National Institute of Standards and Technology-traceable cesium-137 source. The following describes the criteria used to evaluate the acceptability of the daily function tests. Calibration Sheets and function check data are provided in Appendix A.

The detector systems used during the September 2007 gamma ray survey performed in a consistent manner each day throughout the survey period, as indicated by coefficients of variation (CVs) much lower than allowed under ANSI standards. Regulatory Guide 4.14 allows direct measurements to be made with "properly calibrated portable survey units." Since Regulatory Guide 4.14 does not provide acceptance criteria for function checks, those provided in ANSI N323A-1997, Radiation Protection Instrumentation Test and Calibration, Portable Survey Instruments (ANSI, 1997), were used. Section 4.8 of this standard states, "To ensure proper operation of the instrument between calibrations, each instrument (with the exception of neutron instruments and high-dose equivalent rate photon instruments) shall be checked with a source during operation at least daily or prior to each intermittent use, whichever is less frequent. If at any time the instrument response to the source differs from the reference reading by more than ±20% (for any photon instrument the reading should be at least ten times background), the instrument shall be returned to the calibration facility for calibration or for maintenance, repair, and recalibration, as required. Reference readings shall be obtained for each instrument when exposed to a source in a constant and reproducible manner, either at the time that the instrument is received in the field or before its first use." For the discussion that follows, it is assumed that ±20 percent is equivalent to a CV (CV = standard deviation/mean value) of 0.20/3 standard deviations = 0.067. This is the criterion used to evaluate the acceptability of daily function tests in accordance with ANSI N323A-1997.

The response changes for a normally functioning instrument used in the gamma survey occur primarily as a result of small changes in the high voltage of the digital rate meter. These changes may be induced by large changes in the temperature but are normally smaller than the allowable 20 percent change mentioned above. These changes are not source or count-rate dependent and thus they affect the background count rates as well as the count rate from a source. It unfortunately took four days before problems with the function check method were identified

and rectified (September 13-17, 2007). The detectors were function-checked while mounted on the ATVs with the source placed on the ground. Larger deviations than normal in the net count rates resulted primarily from changes in the detector height from tire pressure changes and possibly due to the suspension systems of the ATVs. The procedure was changed on September 18, 2007 by removing the detectors and placing them at a fixed distance from the source, resulting in a CV = 0.02 for the 14 measurements taken during the last 7 days for both detector systems. No measurements were outside of the ±20 percent limit (i.e., 0.067).

During the initial four-day period when the various procedures were applied in conducting the function checks, the data support that the morning checks differed by less than 20 percent from the checks made at the end of the day. Unfortunately, the function check for PR118372 at the end of the day on September 14, 2007 was not performed the same distance from the source as the function check at the beginning of the day, thus making a comparison impossible.

As stated above, performance changes in the detector systems will be reflected in changes in the background readings. The background count rates are less dependent on detector placement and therefore, in this case, may be used to evaluate whether the detectors were functioning properly each day. An analysis of the background count rate data taken the first four days of the survey shows that the detector systems have similar means, with CVs of 0.05 and 0.04. Background data for the last seven days of the survey were almost identical with the means differing by less than 3 percent from those during the first four days, with CVs of 0.04 for each detector system. All data were within ±20 percent of the mean. Therefore, one can conclude that the detector systems used during September 2007 performed in a consistent manner each day throughout the survey period, with CVs much lower than allowed under ANSI N323A-1997.

A review of the field log books shows that the survey instruments were function-checked in the morning but not used on July 18, 2008. No follow-up function check was performed nor needed.

Technical Justification for Transect Spacing

Regulatory Guide 4.14 recommends a total of 80 direct radiation measurements at 150 m (492 ft) intervals up to a distance of 1,500 m (4,921 ft) in eight directions from the center or 5 or more direct radiation measurements at the locations used for collection of particulate samples once prior to construction. As an alternative to the Regulatory Guide 4.14 guidance, TLDs were co-located with the air particulate samplers and additional direct radiation measurements (gamma-ray surveys) were collected using ATVs as discussed previously. The number of direct gamma measurements collected (157,057) greatly exceeds the number recommended in Regulatory Guide 4.14 (80).

The technical justification for the 500-meter transect spacing is based on the assumption that mineralized ore outcrops were not anticipated in areas where this transect spacing was used Therefore, areas with no naturally occurring radioactive material impact were expected to be made up of large areas of different soil types or large fields having a unique history of fertilizer applications, if any. The characteristic sizes of these areas were expected to be large compared to 500 meters.

Additionally, data from the surveys were evaluated at the end of each day to determine whether the gamma count rates were consistent with these assumptions. Data anomalies were investigated and, where appropriate, the transect spacing and areal extent of the survey were changed to bound the anomaly. During the survey, an exposure-rate anomaly near an artesian well was discovered and additional measurements were made to spatially delineate the area. The data also showed that a region at the north end of the site had a slightly higher average exposure rate. However, an evaluation in the field indicated that the variance was not high and that this anomalous region was due to different geology. Also the gamma survey boundary was extended in the surface mine area so that an anomaly on the original survey boundary could be bounded. These daily evaluations of the data and changes to the survey density were made to correct for small departures from the conditions that were assumed when developing the plans.

Combining Data from Two Surveys

The use of a correlation to predict the radium-226 in soil and exposure rates requires that all data, including the gamma survey and correlation data, be collected under similar soil moisture conditions. All data were gathered in fair weather during the late summers of 2007 and 2008 under similar soil moisture conditions.

Another consideration when combining data from two surveys is whether the data from 2007 and 2008 may be combined because of possible different background count rates. A search for overlapping 2007/2008 areas was completed, concentrating on overlap areas considered free of anomalies. Ten areas of overlapping data (within 3 feet) were identified and corresponding count rates were recorded and compared, as shown in Table 3-1. The results confirm that the survey instruments produced count rates that were similar, with a mean ratio of the two count rates of 1.01 and a maximum difference of any two data points of 15 percent. An Anderson-Darling test was done to see if the differences of the paired data were of a normal distribution. The results of the Anderson-Darling test for normality yielded a p-value of 0.093 (cannot reject normal distribution hypothesis). Then a paired t-test was performed to determine whether the differences were significantly different from 0. The results of the paired t-test were a p-value of 0.787 (cannot reject zero-difference hypothesis), an average difference of 84 cpm, and a 95% confidence interval on the average difference of (-603 cpm, 772 cpm). In summary, the two data sets are not statistically different from one another and combining the data sets has no impact on the statistics when summarizing the gamma count rate in and around the project area.

A significant effort was made to match the instrument responses to background radiation and radiation sources prior to deployment for the 2007 survey. In preparing for the 2008 survey, the instrument performances were again matched to one another and to the performances of the instruments used in 2007. Since the instrument responses in background areas were the same for the 2007 and 2008 surveys, it was concluded that the background radiation was very similar for the two surveys and that merging the data was appropriate.

3.2 Observed Gamma-Ray Count Rates

The gamma-ray count rate data were first evaluated as an entire set and then subdivided into the main permit (the entire data set less the surface mine area) and surface mine areas. The gamma data from the main permit area, surface mine area, and both land application areas (Dewey and Burdock) were analyzed separately with the statistical software package Minitab, version 15.1.1.0. Output graphs from Minitab are provided in TR Appendix 2.9-L.

The observed gamma-ray count rates are presented as colors representing ranges of counts in Figure 3-1. This figure was developed using ArcView Geographic Information System (GIS), Version 9.3. Table 3-2 presents summary statistics for each data set. The difference between the median and mean count rates is the first indication of skewness in each of the data set. The count rate data are presented as histograms in Figures 3-2a through 3-2f. Neither the entire data set nor the main permit and surface mine area data sets pass the Anderson-Darling Normality Test at a 95 percent level of significance. That is, the data sets are not normally distributed. Additional tests of the data sets indicated that none of them followed a lognormal or exponential distribution. Furthermore, normalizing data transformations were conducted and the transformed data did not follow standard distributions. For these reasons, data analysis and summaries were performed using non-parametric statistical methods, which are less sensitive to extreme observations typical of skewed data distributions.

The median and interquartile range (IQR) are non-parametric measures of central tendency and variability, respectively. The IQR is the difference between the first (Q1) and third (Q3) quartiles, i.e., 25 and 75 percent of the data area less than Q1 and Q3, respectively. Any datum that is outside the range of 1.5 times the IQR lower than Q1 and 1.5 times the IQR higher than Q3 is considered an outlier. Extreme outliers, or extremes, are those exceeding three times the IQR to the left and right from the first and third quartiles respectively (Ott and Longnecker, 2001).

Several tools were used to identify potential outliers, including histograms, distribution tests, and probability plots. Support for the use of box plots and IQRs to screen outliers is found in Chapter 12 of *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (EPA, 2009). In any case, it is important to clarify that potential outliers were identified for informational purposes (e.g., to determine whether the data sets could be described by various distributions without the potential outliers included). The potential outliers defined using the IQR method were not removed or discounted in the statistical analysis of the GPS gamma data.

3.2.1 Entire Data Set

The summary statistics of the GPS-based gamma-ray survey are listed in Table 3-2. The median of the gamma-ray count rates for the overall data set was 12,687 counts per minute (cpm). Field personnel collected 157,075 readings ranging from 5,550 to 460,485 cpm.

3.2.2 Main Permit Area

As shown in Table 3-2, the median gamma-ray count rate for the main permit area data set was 12,664 cpm for 75,345 observations. The IQR was 2,539 cpm. The count rates ranged from 5,883 to 171,243 cpm.

Low outliers in the main permit area data set, count rates below 7,790 cpm, appear to be limited to two clusters. High outliers in the data set, count rates exceeding 17,946 cpm, appear to be limited to an approximately 600-acre area located at the north end of the main permit area. The area is identified as the Northeast Anomalous Area on Figure 3-1.

Approximately 0.2 and 3 % of the gamma-ray count rates observed in the main permit area are comprised of low and high outliers, respectively.

The majority of high outliers are located in the north section of the main permit area. The source of these anomalous gamma-ray count rate data has not been characterized. The count rates ranged from to 8,863 to 22,130 cpm and the median was 15,503 cpm.

High outliers also occur in the southeast portion of the main permit area. The elevated count rates occur near an artesian well and associated localized discharge. This area is identified on Figure 3-1.

3.2.3 Surface Mine Area

In the surface mine area, the gamma-ray count rates ranged from 5,550 to 460,485 cpm and the median was 12,717 cpm. The IQR was 3,658. In general, clusters of higher readings are associated with un-reclaimed open pits, waste rock, rocky outcrops, and drainages in the surface mine area. Low and high outliers in this area are gamma-ray count rates below 5,638 cpm and exceeding 20,270 cpm, respectively. Approximately 0.004 and 9 % of the gamma-ray count rates observed in the surface mine area are low and high outliers, respectively.

3.2.4 Discussion

Given the greater variability in the surface mine area data and the assumption that elevated areas of activity are indicative of statistically significant differences in the data sets, the variations in the main permit and surface mine area data sets were compared using Levene's Test for Equal Variance, a non-parametric statistical test. The Levene's Test was also used to compare the variances of the main permit and anomalous north area gamma-ray count rates.

The null hypothesis in this case is that the two variances are equal. The results of the Levene's Test indicate that the null hypothesis can be rejected at the level of 95 percent significance level. That is, there is sufficient evidence for the variances in the main permit and surface mine area gamma-ray count rates being distinct. The variances in the main permit anomalous area are also distinct.

Based on the above information, it is clear that the surface mine area in the eastern quarter of the site exhibits radiological impacts from historic and/or current anthropogenic activities within the area. In addition, gamma-ray count rates in the anomalous north area also are clearly distinct from those in the wider main permit area. The precise sources of the differences are not relevant in the context of this investigation since they are part of the baseline or background radiological characteristics of the site.

3.2.5 Land Application Areas

The summary statistics of the GPS-based gamma-ray survey of the Dewey and Burdock land application areas are listed in Table 3-3. The gamma-ray count rates obtained in the main permit area are listed in the table to facilitate comparison between the land application areas and the larger area in which they occur. The data are shown as ranges of count rates on Figure 3-3.

Gamma-ray count rates in the land application areas are similar to those obtained in the larger main permit area. In the Dewey land application area, the median of the gamma-ray count rates was 12,523 cpm. Field personnel collected 23,480 readings ranging from 6,798 to 20,422 cpm. In the Burdock land application area, the median of the gamma-ray count rates was 12,232 cpm. Field personnel collected 13,647 readings ranging from 8,498 to 24,248 cpm.

4.0 BASELINE RADIOLOGICAL INVESTIGATION SOIL SAMPLING

This section presents the results of the baseline soil sampling conducted in October 2007 and July 2008. Baseline soil sampling in the land application areas is included. Table 2-1 summarizes the Dewey-Burdock baseline soil sampling program. The general soil sampling strategy is described in Section 4.1. The following emphasizes the key points.

1. The Dewey-Burdock project area was treated as one "milling site," not as two separate "milling sites." For pre-operational baseline characterization, this is appropriate since one continuous license area is proposed and the locations of well fields, processing facilities, and land application areas within the license area are arbitrary when evaluating the average pre-operational radiological conditions.

2. The radial pattern sample point distribution recommended in Regulatory Guide 4.14 was not used due to the configuration of proposed ISR facilities. Most soil sample locations were based on a combination of random and biased sampling. Random sampling was intended to evaluate the central tendency (mean or median) of the radionuclide concentrations in soil, while the biased sampling was focused on defining the range of radionuclide concentrations in soil, within the project area. The gamma survey data were used to help locate the bias sampling locations. An exception to this method was that soil samples were collected at air particulate monitoring locations, consistent with Regulatory Guide 4.14.

3. Initially, the total number of biased and random samples was 80. Regulatory Guide 4.14 recommends 40 radially spaced samples from a depth interval of 0-5 cm,

while NUREG-1569 recommends an addition 40 soil samples from a depth interval of 0-15 cm co-located with the 0-5 cm sample locations. In addition to the 40 radially spaced soil samples, Regulatory Guide 4.14 recommends soil sampling (0-5 cm depth interval) from the air particulate monitoring locations. An additional 17 random soil samples locations were later added in the proposed land application areas.

4. The approach was to focus the baseline soil investigation on the 0-15 depth intervals and limit soil sampling of the 0-5 cm depth interval to the air particulate monitoring locations, while keeping the total number of samples recommended by Regulatory Guide 4.14 and NUREG-1569 the same, which is 80 samples. The rationale for this approach includes the following items:

    a. The 0-5 cm depth interval is more sensitive to aerial deposition of radionuclides than the 0-15 cm depth interval and it makes sense to sample the more sensitive depth interval where air particulate monitoring is taking place.

    b. The 0-5 cm depth interval sampling at air particulate monitoring stations will be part of the operational monitoring program, thus operational monitoring data can be compared to baseline monitoring data at consistent depth intervals.

    c. The radium-226 soil cleanup standards contained in 10 CFR 40, Appendix A is defined as 5 pCi/g above background for a depth interval of 0-15 cm.

    d. An emphasis on the depth interval applicable to the radium-226 cleanup standard was used since this standard requires a well-defined pre-operational characterization of background radiological conditions in soil from a depth of 0-15 cm.

5. Consistent with Regulatory Guide 4.14 recommendations, all soil samples were analyzed for radium-226, while for 10% of the soil samples were also analyzed for natural uranium, thorium-230 and lead-210. All soil samples collected at the air particulate monitoring locations were analyzed for natural uranium, thorium-230, radium-226, and lead-210.

4.1 Sampling Strategy and Methods

The soil sampling strategy for the Dewey-Burdock site consisted of biased and random sampling at the eight AMS (Figure 4-1), a set of 80 additional locations (Figure 4-2), and 17 locations in the land applications areas (Figure 4-3).

Shallow (0-5 cm) surface soil samples were collected at the eight AMS locations (the seven surrounding and one background locations shown on Figure 4.1). The offsite AMS is located approximately 3 miles west of the site.

Biased samples were collected at 5 of the set of 80 locations, the remainder was placed randomly, using Visual Sampling Plan (VSP), Version 5.0. The biased samples were obtained in the surface mine area and selected to bound the upper range of radionuclide concentrations. The

five biased samples are not sufficient to characterize radium-226 concentrations in impacted areas.

The additional 80 surface soil samples were collected from 0 to 15 cm below ground surface. Seventy one of these samples were collected using a hand shovel. A hand auger was used to collect samples at 0 to 15, 15 to 30, and 30 to 100 cm at nine of the 80 locations.

The 17 land application soil samples were placed randomly, using VSP. With one exception, the samples were collected from 0 to 15, 15 to 30, and 30 to 100 cm below ground surface, using a hand auger. The exception occurred due to refusal encountered in one borehole.

For the main permit area and surface mine area, the input to VSP consisted of shape files of the proposed license boundary and surface mine area and the number of samples (75) for the main permit area and surface mine area. Refer to Figure 3-1 for the locations of the main permit area and the surface mine area. For the land application areas, the input to VSP consisted of shape files of the land application areas and the number of samples (17) for the land application areas. The results obtained from VSP consisted of coordinates for soil samples in the main permit area and land application areas. These locations are shown on Figures 4-2 and 4-3.

All samples were analyzed for radium-226. Ten of the set of 80 samples were also analyzed for natural uranium, lead-210, and thorium-230. Thirteen duplicates were collected in the set of 80 samples: 11 with the surface set and two with the subsurface set. All duplicate samples in this set were analyzed for radium-226 while two were also analyzed for natural uranium, thorium-230, and lead-210.

All of the samples collected from the land application area were analyzed for radium-226, natural uranium, thorium-230 and lead-210. Duplicate samples were collected at one location for the three depth intervals and analyzed for the same radionuclides.

The analytes and corresponding analytical methods were:

- Radium-226 via gamma spectroscopy or radon emanation: U.S. Environmental Protection Agency (EPA) Methods 901.1 and 903.1, respectively. *Prescribed Procedures for Measurement of Radioactivity in Drinking Water* (EPA/600/4-80-032), August, 1980. The majority of radium-226 analyses were performed using EPA Method 901.1. Clarification from the contract laboratory, Energy Laboratories, Inc., on the testing method used for radium-226 soil sample analyses, is provided in TR Appendix 2.9-G.

- Thorium-230: EPA 907.0 *Prescribed Procedures for Measurement of Radioactivity in Drinking Water* (EPA/600/4-80-032), August, 1980.

- Natural Uranium: EPA 6020 ICP-MS, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*, June, 2007. Consistent with Regulatory Guide 4.14, a laboratory performance evaluation for uranium in a soil matrix using EPA Method 6020A is provided as TR Appendix 2.9-F. The performance evaluation was performed by RTC Corp. (A2LA Accreditation No. 2122.01) for the accreditation provided by the American Association for Laboratory Accreditation (A2LA). The performance evaluation is for the period July 30 through September 12, 2008, which is the time period during which the soil samples from the land application areas were analyzed. The initial 80 soil samples were analyzed in late 2007. The evaluation indicates that Method 6020A is used by the laboratory for analysis of uranium in soil and that it provides an acceptably accurate measurement of uranium in a soil matrix.

- Lead-210: EPA 909.0, *Determination of Lead in Drinking Water* (EPA, 1982). This method was selected by the contract laboratory, Energy Laboratories, Inc., as the preferred test method. A copy of EPA Method 909 (EPA, 1982), is provided as TR Appendix 2.9-E. Although EPA Method 909 was developed by EPA personnel and can be found on the EPA test method website (http://www.epa.gov/ne/info/testmethods), EPA Method 909 is not an EPA-approved procedure. ERG understands that EPA does not have an approved procedure for lead-210 in water or soil.

- EPA Method 3050B, *Acid Digestion of Sediments, Sludges, and Soils*, was used to convert the soil into an aqueous matrix (EPA, 1996). This procedure is provided as TR Appendix 2.9-D.

4.2 Analytical Results for Soil Samples

Table 4-1 presents the radionuclide concentrations in soil samples collected as part of the baseline radiological investigation. The radium-226 results described in this section are those determined using only EPA Method 901.1.

Samples are identified as follows, with duplicates labeled as “dup”:

- AMS: air monitoring station (sometimes designated as HV for high-volume air samplers)
- SMA: surface mine area
- MPA: main permit area
- NEA: northeast area
- RFA: roll front area
- LAN: land application area north (Dewey)
- LAS: land application south (Burdock)

The laboratory analytical data reports are provided in Appendix B.

4.3 Analysis of Concentration of Radium in Soil

The purpose of the following analysis is to determine the baseline distributions of radium-226 concentrations in site soils. The radium-226 soil sampling results for the first set of 80 locations, the surface mine area and the main permit area, were analyzed with the statistical software package Minitab, version 15.1.1.0. Output from Minitab for the statistical analyses of baseline radium-226 soil sampling results is provided in TR Appendix 2.9-M.

4.3.1 Surface Soil Concentrations in Overall Data Set

In the set of 80 surface samples, the mean and median radium-226 concentrations are 2.9 and 1.3 pCi/g, respectively. Q1 and Q3 are 1.1 and 1.7 pCi/g, respectively (Table 4-1). The IQR is 0.6. The mode is 1.1 pCi/g (12 observations). One result (0.45 pCi/g, Sample Location SMA-18) was a low outlier. Thirteen values exceeded 2.3 pCi/g, the cutoff for high outliers.

The soil data were fitted to normal and lognormal distributions. The p-values for both distributions are less than 0.005, indicating that at a 95% confidence level ($p = 0.05$), the distributions are non-normal and non-lognormal.

Considering that the data do not fit normal or lognormal distributions, and clear differences in the gamma-ray count rates obtained in the surface mine and main permit areas are indicative of differences in the levels of gamma-emitting radionuclides therein, the set of surface soil data was divided into surface mine and main permit area subsets, as discussed in the following sections.

4.3.2 Surface Soil Concentrations in Surface Mine Area

Twenty-five surface soil samples were collected in the surface mine area. The mean and median radium-226 concentrations in the surface mine area are 5.9 and 1.4 pCi/g respectively. Q1 and Q3 are 1.0 and 2.75 pCi/g, respectively. The IQR is 1.75. The mode is 1.0 pCi/g (3 observations).

The data were compiled into a histogram and fitted to a normal distribution and a lognormal distribution. When tests for goodness of fit were applied to the distributions, the associated p-values were both less than 0.005 for the normal and lognormal distributions. These low p-values denote the hypotheses that the data came from a normal distribution or a lognormal distribution are rejected at a 95% confidence level.

There are five values exceeding 5.9 pCi/g, the cutoff for outliers. The outliers are the radium-226 concentrations in the five biased samples, all collected in the surface mine area. All of the other samples (75 of 80) were placed randomly in undisturbed areas. The five biased samples are not sufficient to characterize radium-226 concentrations in impacted areas.

With the outliers omitted from the surface mine area data set, the process of fitting its histogram was repeated. The resulting p-values were 0.006 (for normal distribution) and 0.418 (lognormal

distribution). The p-value for the data being a lognormal distribution is greater than 0.05, thus the distribution is accepted as lognormal, with statistical significance.

The central tendency and variability of a lognormal distribution are best represented by the geometric mean and geometric standard deviation, each of which is 1.3 pCi/g radium-226 in the case of the surface mine area data set. The data lie within a population range of $1.3/1.3^2$ to $1.3*1.3^2$, or 0.76 to 2.2 pCi/g.

4.3.3 Surface Soil Concentrations in Main Permit Area

Fifty-five surface soil samples were collected in the main permit area. The data were compiled into a histogram and fitted to normal and lognormal distributions. When tests for goodness of fit were applied to the distributions, the associated p-values were both less than 0.005. These low p-values denote the hypotheses that the data came from a normal or lognormal distribution are both rejected at a 95% confidence level.

The mean and median radium-226 concentrations in the main permit area are 1.5 and 1.3 pCi/g respectively. Q1 and Q3 are 1.1 and 1.7 pCi/g, respectively. The IQR is 0.6 pCi/g. There are three values exceeding 2.6 pCi/g, the cutoff for outliers in the main permit area data set. With the outliers omitted from the main permit area data set, the process of fitting its histogram was repeated. The results of fitting the histogram without the possible outliers were p-values of less than 0.005 (normal distribution) and 0.068 (lognormal distribution). The p-value for the data being a lognormal distribution is greater than 0.05, thus the distribution is accepted as lognormal, with statistical significance.

The geometric mean and geometric standard deviation of the set of main permit area radium-226 concentrations are each 1.3 pCi/g. The data lie within a population range of $1.3/1.3^2$ to $1.3*1.3^2$, or 0.76 to 2.2 pCi/g.

4.3.3.1 North Section of Main Permit Area

It was stated above that elevated gamma-ray count rates were observed in an approximately 600-acre area located at the north end of the main permit area. Considering that the elevated levels are likely due to relatively higher increased levels of one or more gamma-emitting radionuclides, radium-226 concentrations in soil samples collected from this area were evaluated.

Eight surface soil samples were collected in this area (MPA-R01, NEA-R02, NEA-R03, NEA-R04, NEA-R05, RFA-03, RFA-06, and RFA-17). One of these samples was considered an outlier of the main permit area data set (NEA-R05).

There are too few soil samples collected in this area to characterize it statistically. However, the gamma-ray count rates therein differ from the main permit area, with statistical significance.

4.3.4 Surface Soil Concentrations in Land Application Area Soils

Radium-226 concentrations in surface soils in the land application areas are summarized as follows:

- In both areas, radium-226 concentrations ranged from 0.7 to 4.4 pCi/g, with a median of 0.9 and average of 1.1 pCi/g.
- The median radium-226 concentration in the Dewey land application area was 1.0 pCi/g.
- The median radium-226 concentration in the Burdock land application area was 0.8 pCi/g.

4.3.5 Discussion

Although the distributions of the main permit and surface mine area radium-226 concentration data sets are similar, the gamma-ray count rate distributions in these two areas differ, with statistical significance. The gamma-ray count rates observed in the anomalous portion of the main permit area also differ from the main permit area.

Discussion of Outliers

Several methods were considered to evaluate outliers, including histograms, distribution tests, and probability plots, prior to the decision to use IQRs. The set of the data from the main permit area was initially found to be non-parametric (i.e., does not follow a normal, lognormal or other commonly used distribution that can be described with parameters). The IQR was used to help identify any potential outliers non-parametrically. The usefulness of using box plots to non-parametrically screen for data outliers is discussed in Chapter 12 of *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* (EPA, 2009). As described on pg. 12-5 of this guidance, "box plots… provide an alternate method to perform outlier screening, one not dependent on normality of the underlying measurement population. Instead of looking for points inconsistent with a linear pattern on a probability plot, the box plot flags as possible outliers values that are located in either or both of the *extreme tails* of the sample".

The five potential outlier locations in the data from the surface mine area were biased, based on an evaluation of the gamma survey results, and were intended to capture the upper limit of radium-226 soil concentrations in the area. Because the sample locations were intentionally biased toward higher radium-226 concentrations, it is not surprising that they would be outliers compared to the remaining data set. The box plot analysis (see Figure 3 in TR Appendix 2.9-M) identified five samples within the surface mine area as being outliers. At the request of the NRC staff, ASTM Standard E178-08, Standard Practice for Dealing with Outlying Observations (ASTM, 2002), was also used to evaluate whether the outliers identified using the box plot analysis are also outliers using the methods described within. Prior to presenting the test data contained in ASTM E178-08, three important points should be mentioned:

1) ASTM E178-08 discusses rejecting observations based on judgment provided a physical reason is known or discovered for the outlier. Statistical test for these outliers may be used but is not required to support a judgment that a physical reason actually exists for the outlier.

2) The criteria for outliers within ASTM E178-08 are based on an assumed underlying normal distribution.

3) When data are not normally or approximately normally distributed, the probabilities associated with the tests will be different (ASTM E178-08).

In the case of the five outliers in the surface mine area, physical properties (the proximity of the historical open-pit uranium mines) for the higher values were known. This physical property was the reason samples were collected at these locations. Table 4-2 provides the statistical analysis based on methods described in Section 6 of ASTM E178-08.

Table 4-2 supports the decision to consider the sample results as outliers based on judgment and the outlier screening using box plots. Consistent with ASTM E178-09, these observations were recognized as likely being from a different population than the other sample values and were not used in describing the central tendency of the data or other data analysis.

Potential outliers in the data obtained in the main permit area were not attributed to any known or discovered physical property. The samples were identified as potential outliers using box plots. Table 4-3 provides the statistical analysis for outliers for these three samples based on methods described in Section 6 of ASTM E178-08. Two of the three samples identified as outliers using box plots were also identified as outliers using the ASTM method. The outlier data in the case of the main permit area are probably extreme manifestations of the random variability inherent in the data and should be retained and processed in the same manner as the other observations in the sample (ASTM E178-08). These data were only excluded from the other data processing when attempting to fit a parametric distribution to the data, in this case a lognormal distribution. These data were included when describing the median radium-226 concentration (1.3 pCi/g) for the main permit area and excluded when calculating the geometric mean (1.3 pCi/g) for the same area. The estimate of the central tendency of the data using non-parametric (outliers were included in estimate) and parametric (outliers were excluded in estimate) estimates are the same.

4.4 Subsurface Soil Sampling Results

Table 4-1 lists the subset of subsurface biased samples that were collected at depth in the Dewey and Burdock roll front areas: RFA-B01, RFA-B02 RFA-B13 RFA-B15, RFA-B17, RFA-B21, RFA-B30, RFA-B36, and RFA-B37. Subsurface radium-226 concentrations in these samples, ranging from 0.7 to 5.6 pCi/g, are comparable to those observed in the associated 0 to 15 cm surface samples in the samples. There is no apparent trend with depth.

Subsurface radium-226 concentrations in the land application areas can be summarized as follows:

- Radium-226 concentrations range from 0.4 to 4.1 pCi/g, with a median of 0.9 pCi/g.
- Radium-226 concentrations in the Dewey land application area have a median of 1.2 pCi/g.
- Radium-226 concentrations in the Burdock land application area have a median of 0.8 pCi/g.

The subsurface results in both land application areas are comparable to those observed in the 0 to 15 cm surface samples in the samples. There is no apparent trend with depth.

4.5 Other Radiological Parameters

Table 4-1 summarizes the analytical results for all samples analyzed for the extended suite of radiological parameters (all locations and depths combined). Table 4-4 summarizes the concentrations of all radionuclides by depth interval. Arithmetic and geometric means and standard deviations can be used to compare normal and lognormal distributions, respectively. Medians can be used to compare non-parametric distributions. A positive relationship between radium-226 concentrations and concentrations of natural uranium, thorium-230, and lead-210 is apparent at all depths. At 0 to 15, 15 to 30, and 30 to 100 cm:

- Radium-226 concentrations are 1.0 (median), 1.0 (median) and 1.1 (geometric mean) pCi/g.
- Thorium-230 concentrations are 0.6 (mean), 0.5 (median) and 0.7 (mean) pCi/g.
- Natural uranium concentrations are 1.0 (mean), 1.0 (median) and 1.2 (geometric mean) pCi/g.
- Lead-210 concentrations are 1.2 (mean), 1.1 (median) and 0.9 (mean) pCi/g.

4.6 Soil Data Quality

4.6.1 Analysis of Duplicate Samples

This section briefly summarizes the results of the quality control (QC) samples collected for the baseline soil sampling program. The results of this QC effort are documented in Table 4-5, which lists the analytical results for each duplicate pair along with corresponding errors and lower limits of detection (LLDs). Table 4-5 documents associated comparisons, presenting the corresponding RPD (in the case of natural uranium) and/or Replicate Error Ratio (RER) for each QC pair. The calculation of RPDs and RERs is a standard technique used to evaluate laboratory precision.

The RPD is calculated as follows:

$$RPD = \frac{|A - B|}{\frac{A + B}{2}}$$

Where A and B are the sample and duplicate results, respectively.

The RER is calculated as follows:

$$RER = \frac{|S - R|}{\sqrt{(Sx0.15)^2 + (E_s)^2} + \sqrt{(Rx0.15)^2 + (E_R)^2}}$$

Where S and are the sample and duplicate concentrations, respectively. E_S and E_R are the sample (E_S) and duplicate errors (E_R). The factor of 0.15 accounts for any inherent systematic error which cannot be quantified.

The acceptance criteria are an RPD and RER of less than 40 and 1 percent for data above the minimal detectable concentration (MDC), respectively, as established in a Quality Assurance Project Plan (QAPP) (ERG 2006).

This data set shows four cases where the RER for lead-210 was greater than 1 and five cases where the RPD exceeded 40. There are three cases where the RER for radium-226 is exceeded.

The consequences of the few results exceeding the acceptance criteria are minimal since in each case the concentrations are low. In addition, lead-210 largely has no impact when addressing the impact of the baseline radiological characteristics of the site and potential impacts from site operations.

There is close agreement for all other analytical results reported for each duplicate pair collected for all parameters. Overall, duplicate results are generally comparable for the majority of QC samples collected. Considering the low level of radioactivity observed in most of the QC pairs, the laboratory performance on blind duplicates is satisfactory.

4.6.2 Limits of Detection

A summary of the results with respect to reporting limits and minimum detectable concentrations (MDCs) is as follows:

- The radium-226, lead-210, and thorium-230 LLDs (reported as MDCs or reporting limits) in the NEA, MPA, RFA, and SMA soil samples were all $1*10^{-7}$ µCi/g.
- The natural uranium LLDs in the NEA, MPA, RFA, and SMA samples ranged from $1.7*10^{-8}$ to $2.0*10^{-8}$ µCi/g.

- None of the results NEA, MPA, RFA, and SMA samples were below their respective LLDs.

- The lead-210 LLDs for the LAN and LAS samples ranged from $1.9*10^{-6}$ to $3.8*10^{-6}$ µCi/g. In all but one case, the lead-210 results were lower than their respective LLDs.

- The radium-226 LLDs for the LAN and LAS samples ranged from $4.0*10^{-8}$ to $1.0*10^{-7}$ µCi/g. All of the LAN and LAS results exceeded their respective LLDs.

- The thorium-230 LLD for the LAN and LAS samples was $1.0*10^{-7}$ µCi/g. Results for 17 of the 53 (surface and subsurface) samples were reported below $1.0*10^{-7}$ µCi/g.

- The natural uranium LLD for the LAN and LAS samples was $7.0*10^{-9}$ µCi/g. All of the results exceeded the LLD.

The LLD recommended in RG 4.14 for natural uranium, thorium-230, radium-226, and lead-210 in soils is $2*10^{-7}$ µCi/g. The only case for which the guidance values were not attained was the LLD for lead-210 in the LAN and LAS samples. The median lead-210 concentration for surface soils (0-5 cm and 0-15 cm depths), excluding land application samples (LAN and LAS), was 1.5 E-6 µCi/g. In these areas, the lead-210 LLD was 1.0 E-7 µCi/g, which is consistent with the Regulatory Guide 4.14 LLD for lead-210 in soil. The median lead-210 soil concentration for surface soil in the land application areas was 1.1 E-6 µCi/g. In the land application areas, the LLD ranged from 1.9E-6 to 3.8E-6 µCi/g. Since the median lead-210 concentrations were similar between the two data sets, the reported lead-210 soil concentrations within the land application areas is likely representative of background regardless of the reported sample-specific LLD values.

5.0 RADIUM-226 ESTIMATES BASED ON GAMMA-SOIL CORRELATION

To estimate site-wide radium-226 concentrations at each of the GPS-based gamma survey points, a gamma-soil radium correlation was established by performing a regression between the surface soil analytical results documented in Section 4 for the 80 surface (0 to 15 cm) soil samples and one-minute integrated direct radiation measurements collected at each of these locations prior to sample collection. The measurements were collected with the same Ludlum 44-10/2221 2-in by 2-in sodium iodide gamma detection systems used in the GPS-based gamma survey. The measurements are listed in Table 4-1.

Two linear correlation iterations were performed to derive the site-wide gamma-soil radium correlation used as the basis for the soil radium-226 values plotted in Figures 5-1 and 5-2. The first attempt included all 80 data points, followed by the use of a truncated data set that excluded outlying data.

Figure 5-1 displays a plot of concentrations of radium in soil over 1-minute counts of gamma radiation (all 80 points). Overlaid on the plot are a linear fit and its 95% predicted interval. The linear fit of the data resulted in an R^2 of 0.75, denoting that 75% of the variability of the data is accounted for by the linear fit. The equation of the linear fit is:

[Radium-226] = -0.87+0.0002 x Gamma Count Rate

Where [Radium-226] is the predicted concentration based on the gamma-ray count rate in cpm.

The regression analysis was repeated after removing the five outlying radium-226 results from the surface mine area data set. The data without the five outliers are shown in Figure 5-2 and the equation of the linear fit is:

[Radium-226] = -1.04+0.000187 x Gamma Count Rate

This model has an R^2 of 0.43, the model accounting for 43 percent of the variance in the data set.

Plots of residuals (actual data minus predicted values from the equations) for both equations show increasing deviation with increasing gamma count rate. This is demonstrated in Figure 5-3 for the first equation and Figure 5-4 for the second. This increasing deviation violates the assumption of constant variance that is used in linear regression. Therefore, the use of R^2 as a measure of the adequacy of a model is not appropriate.

Table 5-1 shows the regression equations above and how the descriptive statistics of the predicted radium-226 concentration from each equation compares to descriptive statistics of the laboratory data. The median and quartiles predicted by Equation 2 are very close to the median and quartiles of the data and are much closer than the median and quartiles of Equation 1. Based on the data in Table 5-1, Equation 2 predicts actual radium-226 concentrations better than Equation 1; therefore, Equation 2 was used to predict concentrations of radium-226 in soil from gamma survey data.

Using the latter equation, soil radium-226 concentrations were estimated for each discrete gamma survey measurement. These estimates of radium-226 concentrations in soil are shown on Figure 5-5. The error associated with the predicted values is coupled with the error of the regression line. A 95% confidence interval for the regression line used to predict radium-226 concentration is shown in Figure 5-2. The 95% confidence interval across the range of typical gamma count rates spans approximately 2 pCi/g. Provided future gamma count rates are collected using similar instrumentation and during a similar seasonal period as the existing data, little seasonal variability would be introduced. If soil moisture conditions are much different when collecting future gamma count rate data, new correlations to radium-226 concentrations in soil will be established for the specific condition.

It is important to acknowledge that discrepancies between measured soil radium-226 concentrations reported by the laboratory and corresponding radium-226 concentrations estimated by gamma surveys are inevitable in a characterization survey of this nature and magnitude, given the heterogeneity of the site (at least in some areas) and differing detector-source geometry at various sample/survey locations.

At the same time, Figure 5-5 shows that without a gamma survey, reliance on a random soil sampling program alone would not have identified elevated areas of radioactivity at the site.

6.0 RADON FLUX MEASUREMENTS

This section documents the results of pre-operational radon-222 (radon) flux measurements and ambient air monitoring.

6.1 Radon Flux Measurements

The Sampling Plan specified that three rounds of radon flux measurements would be taken to characterize pre-operational conditions in accordance with NRC Regulatory Guide 4.14. The following documents the results of the three rounds of measurements taken in September 2007; and April and July 2008.

Radon flux rates were measured at nine locations on three occasions in the Dewey and Burdock roll front areas. The locations are shown on Figure 4-1. The locations coincide with the nine soil samples collected from 0 to 100 cm below ground surface (not in land application areas).

The first round of flux canisters was deployed on September 26, retrieved on September 27, and analyzed on September 28, 2007. The second round of flux canisters was deployed on April 20, retrieved on April 21, and analyzed on April 22, 2008. The third round of flux canisters was deployed on July 14, retrieved on July 15, and analyzed on July 16, 2008. The canisters were analyzed using EPA Test Method 115, *Monitoring for Radon-222 Emissions* (40 *Code of Federal Regulations* [CFR] 61, Appendix B. Results are documented in the Table 6-1. Sampling for the three periods yielded average flux rates of 1.22, 0.74, and 1.5 picocuries per meter squared second (pCi/m^2-s), respectively. Flux rates ranged between 0.68 and 1.77 pCi/m^2-s in Fall 2007, 0.28 and 1.33 pCi/m^2-s in Spring 2008 and 0.48 and 2.38 pCi/m^2-s in Summer 2008.

These values are one to two orders of magnitude below the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) requirements of 20 pCi/m^2-s specified in 10 CFR 40, Appendix A, Criterion 6. Although the latter requirement applies to tailings and thus is not directly germane to this characterization, it is useful as a context to demonstrate the relatively low magnitude of baseline radon flux rates measured at the site.

Completed radon flux measurement forms are provided in Appendix C.

7.0 VEGETATION CHARACTERIZATION

This section documents the results of the first round of vegetation sampling conducted for the baseline radiological characterization.

7.1 Sampling Methods and Analytes

One vegetation sample was collected at each AMS in August, 2007; and April and July, 2008. Vegetation samples were collected from representative grazing areas in sectors near the AMS. These stations were placed in areas predicted to have the highest airborne concentrations due to ISR operations. This is consistent with Table 1 in RG 4.14, which indicates that radiological

sampling will be conducted in grazing areas having the highest predicted air particulate concentrations during milling operations.

Grass is the primary animal forage vegetation within the project area. Therefore, consistent with RG 4.14, grasses were the only type of forage vegetation sampled during background radiological characterization. The samples were collected using grass clippers and placed in large plastic lawn bags, labeled appropriately, and stored in a laboratory supplied cooler until transferred to the laboratory. The analytes and corresponding analytical methods were the same as those used for soil. Polonium-210, determined using a laboratory-specific digestion and alpha spectrometry method, was added to the analytical suite (Energy Laboratories, 2008).

7.2 Results

Table 7-1 presents the results of the vegetation sampling. There appear to be no temporal or spatial trends in the data. The following list is a summary of the averages for the set of samples:

- Radium-226 concentrations ranged from 0.02 to 0.09 pCi/g, averaging 0.05 pCi/g.
- Natural uranium concentrations ranged from 0.01 to 0.04 pCi/g, averaging 0.02 pCi/g.
- Thorium-230 concentrations ranged from 0.01 to 0.03 pCi/g, averaging 0.02 pCi/g.
- Lead-210 concentrations ranged from 0.6 to 1.7 pCi/g, averaging 1.2 pCi/g.
- Polonium-210 concentrations ranged from 0.08 to 0.23 pCi/g, averaging 0.15 pCi/g.

Analytical errors associated with the reported concentrations results are high, relative to the reported means.

With the exception of lead-210, radionuclide concentrations in the vegetation samples are one to two orders of magnitude lower than those in the corresponding shallow (0 to 5 cm) soil samples. There are no apparent spatial or temporal patterns in the vegetation.

8.0 AIR MONITORING

This section documents the results of baseline radiological air monitoring, which was comprised of two tasks: high volume particulate and radon sampling.

Eight Hi-Q Model HVP-4200AFC high volume air samplers were established within and surrounding the proposed permit area. The samplers operated continuously from August 13, 2007 to August 13, 2008 except for small periods of down time due to filter change outs, power outages, and other disruptions of the power supply. The locations of the air samplers are shown on Figure 4-1. The criteria used to establish AMS locations include the following factors:

1) Average meteorological conditions such as wind speed, wind direction and atmospheric stability

2) Prevailing wind direction

3) Site boundaries nearest to proposed facility processing areas, land application areas, and well fields

4) Direction of nearest occupiable structure

5) Locations of estimated maximum concentrations of radioactive materials

6) Locations of existing features near or within the proposed license boundary, but unrelated to proposed site activities, that may impact background radiological conditions (e.g., railroads and historical surface mines)

7) Location of nearest multiple resident area or town

Factors 1-5 are identical to the air particulate sampler siting criteria contained in RG 4.14. Factors 6 and 7 were added to account for site-specific conditions.

Passive track etch detectors were placed at each of the eight AMS locations and an additional eight biased locations to measure radon-222 concentrations in air. For QC purposes, one duplicate detector was placed at each of two locations during each sampling event. The locations of the passive radon detectors are also shown on Figure 4-1.

8.1 Sampling Methods and Analytes

8.1.1 High Volume Air Sampling

Airborne particulates were collected using the Hi-Q high volume air samplers. The samplers operated continuously from August 13, 2007 to August 13, 2008 (366 days), which is consistent with the recommendations in RG 4.14 and requirements in 10 CFR 40, Appendix A, Criterion 7, except for small periods of down time due to filter change outs, power outages, and other disruptions of the power supply. The locations of the air samplers are shown on Figure 4-1.

Each high volume air sampler was equipped with an 8-in. by 10-in. 0.8 micron glass fiber filter paper. The air filters were collected approximately bi-weekly, prior to saturation, from each of the eight air samplers. Flow rate and total flow data were recorded at the same time. The recommendation in RG 4.14 for weekly filter changes is currently obsolete given the modern air sampling equipment that contains automatic flow controllers. The approximately bi-weekly filter change was chosen based on the following:

1) As part of the baseline monitoring program, brushless, automatic flow control hi-vol air samplers were utilized. Each air sampler was equipped with a variable speed motor, controlled by a programmable logic controller (PLC). The PLC received input from a

mass air flow sensor placed in the air flow path downstream of the filter paper. Any changes in the pre-set flow rate due to dust loading, barometric pressure or temperature were detected by the air flow sensor and the PLC compensated by adjusting the motor speed to maintain the pre-set flow rate.

2) Each air sampler was equipped with an air flow totalizer, which was recorded and reset during each filter change.

3) Given the rural South Dakota site location and the features of the samplers described above, it was unlikely that total suspended particulate concentrations in air would interfere with air flow rates over a two-week period.

Over the course of 366 days, the filters were collected as follows:

- Period 1: August 13 to October 2, 2007
- Period 2: October 2, 2007 to January 4, 2008
- Period 3: January 4 to April 1, 2008.
- Period 4: April 1 to July 9, 2008
- Period 5: July 9 to August 13, 2008

The filters were composited and digested by the external analytical laboratory. The samples were analyzed for radium-226, thorium-230, natural uranium, and lead-210, using the same methods as listed for the soil samples.

The laboratory data were reported in units of picocuries per filter composite (pCi/f) with the exception of natural uranium. The data were converted to units of micocuries per milliliter (µCi/ml), as follows:

$$Concentration,\ \mu Ci/ml = \frac{Filter\ Concentration}{Total\ Flow}(1*10^{-12})$$

The units of total flow and filter concentration in the equation are cubic meters and pCi/f, respectively.

Laboratory results for uranium were converted to microcuries per milliliter using the specific activity for natural uranium provided in Footnote 3 to 10 CFR Part 20, Appendix B and the following equation:

$$[U_{nat}] = \frac{U_{nat}Result\ (mg) \times SA_{unat}(Ci/g) * 1x10^{6}\ \mu Ci/Ci}{1000\ mg/g * V\ (ml)}$$

Where:

$[U_{nat}]$ = Air concentration of natural uranium (µCi/ml)

SA_{unat} = Specific activity of natural uranium ($6.77*10^{-7}$ Ci/g)

U_{nat} Result = Laboratory result for natural uranium in filter composite (mg)

V = Volume of air sampled (ml)

The resulting concentrations for each radionuclide and high volume sampler were compared to effluent concentration limits listed in Table 2 of 10 CFR 20 Appendix B and reported in Table 8-1 as percentages of the respective effluent limits. The most conservative effluent limits were applied to thorium-230 ($2*10^{-14}$ µCi/ml) and lead-210 ($6*10^{-13}$ µCi/ml). The Class D and W limits were applied to natural uranium ($3*10^{-12}$ µCi/ml) and radium-226 ($9*10^{-13}$ µCi/ml), respectively.

8.1.2 Ambient Radon

Radtrak passive radon-222 (track etch) detectors were used to determine ambient radon concentrations in air.

The detector measures average radon concentrations in air over the measurement period. The results are reported in picocuries per liter (pCi/L).

With an overlap in time across the group of detectors, but not on an individual location basis, the four quarterly measurement periods were: August 14 to September 27, 2007; September 27, 2007 to February 1 through 12, 2008; February 1 through 12, 2008 to May 17, 2008; and May 17 to July 17, 2008.

8.2 Results

8.2.1 High Volume Air Sampling

In general and relative to one another (e.g., natural uranium to radium-226), the average concentrations of radionuclides were consistent at each location from period to period. The radionuclide with the lowest average concentration was radium-226, followed by thorium-230, natural uranium, and lead-210. Average radium-226 concentrations were five orders of magnitude lower than lead-210 concentrations. The data are listed in Table 8-1, where they are also summarized as averages and ranges.

Site-wide, the data can be summarized as follows:

- Natural uranium concentrations ranged from $-3.0*10^{-17}$ to $1.5*10^{-14}$ µCi/ml and averaged $1.4*10^{-15}$ µCi/ml.

- Thorium-230 concentrations ranged from $-1.5*10^{-18}$ to $5.6*10^{-17}$ µCi/ml and averaged $1.2*10^{-17}$ µCi/ml.

- Radium-226 concentrations ranged from $-4.9*10^{-17}$ to $5.3*10^{-17}$ µCi/ml and averaged $1.6*10^{-18}$ µCi/ml.

- Lead-210 concentrations ranged from $6.0*10^{-15}$ to $4.1*10^{-14}$ µCi/ml and averaged $1.5*10^{-14}$ µCi/ml.

There are no clear patterns in the radionuclide concentrations, when evaluating them spatially or temporally. Average natural uranium concentrations at each location were on the order of 10^{-15}µCi/ml over the course of monitoring. Thorium-230 concentrations fluctuated between the orders of 10^{-17} and 10^{-18} µCi/ml. Radium-226 concentrations fluctuated between the orders of 10^{-17} and 10^{-19} µCi/ml. Finally, lead-210 concentrations at each location were all on the order of 10^{-14} µCi/ml over the course of monitoring.

With the exception of natural uranium, the values determined above are similar to U.S. background concentrations reported in the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) Report to the General Assembly, Sources and Effects of Ionizing Radiation, Annex B. The regional concentrations reported in this reference document are: uranium-238 ($2.4*10^{-17}$ to $1.4*10^{-16}$ µCi/ml), thorium-230 ($1.6*10^{-17}$ µCi/ml), radium-226 ($1.6*10^{-17}$ µCi/ml), and lead-210 ($2.7*10^{-15}$ to $2.7*10^{-14}$ µCi/ml).

In terms of comparison to 10 CFR 20 Appendix B effluent concentrations, the data can be summarized as follows:

- Natural uranium concentrations were 0.0 to 0.5 percent of its effluent concentration.

- Thorium-230 concentrations were 0.0 percent of its effluent concentration.

- Radium-226 concentrations were 0.0 to 0.01 percent of its effluent concentration.

- Lead-210 concentrations were 1.0 to 6.8 percent of its effluent concentration.

The LLDs, in pCi/f, reported by the laboratory for each radionuclide were converted to µCi/ml by multiplying pCi/f by $1*10^{-12}$. In no cases were the LLDs higher than their respective 10 CFR 20 effluent concentration limits. The LLDs reported in Periods 1 and 2 by the laboratory for uranium exceeded the recommendation in NRC Regulatory Guide 4.14.

A justification for the natural uranium LLD values higher than what is recommended by RG 4.14 is linked to how the data are currently used and how they may be used in the future. Currently the data are used to establish the pre-operational baseline condition of the airborne radionuclide concentrations in and around the project area. NUREG/CR-4007 "*Lower Limit of Detection: Definition and Elaboration of a Proposed Position for Radiological Effluent and Environmental Measurements*" (NRC, 1984) states that "any measurement process must be capable of detecting the relevant radionuclides at levels well below those of concern to the public health and safety". RG 4.14 states that one of its recommended siting criteria is to place an air particulate

monitoring station at or near a structure with the highest predicted airborne radionuclide concentration due to milling operations and at or near at least one structure in any area where predicted doses exceed 5 percent of the standards in 40 CFR Part 190. This dose level is interpreted as being "well below those of concern to the public health and safety" so it seems reasonable that an LLD for air particulate monitoring low enough to measure an airborne radionuclide concentration that would result in at least 5 percent of the standards in 40 CFR 190 would be acceptable.

The dose standards in 40 CFR 190 are an annual dose equivalent of 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ of any member of the public as the result of planned discharges of radioactive materials, radon and its daughters excepted. For inhalation of natural uranium, the annual dose equivalent of 25 mrem to other organs of the body (the bone surface in the case of natural uranium) is the most restrictive limit. Equations 1 and 2 were used to determine the concentration of natural uranium in air that would result in an annual dose equivalent of 1.25 mrem (5 percent of standard) to a member of the public. The inhalation dose conversion factor (DCF) from Federal Guidance 11 (EPA, 1988) for Class D uranium-234 with the target organ of the bone surface was used since it is the most restrictive of the three lung clearance classes for the three uranium isotopes contained in natural uranium.

$$C_{U-nat} = 1.25\ (mrem)\ x\ \frac{1}{DCF\ x\ BR\ x\ Tx\ FO} \qquad \text{(Equation 1)}$$

Where

$C_{u\text{-}nat}$ = Natural uranium concentration (μCi/ml)

DCF = Inhalation dose conversion factor for uranium-234 contained in Federal Guidance Report 11 (EPA, 1988). Value equals 40,330 mrem/μCi.

BR = Breathing Rate of 8.4×10^9 ml/year [Data Collection Handbook, (ANL, 1993)]

T = Time period of 1 year

FO = Shielding Factor for Inhalation Pathway = 0.45 as calculated using Equation 2 [Data Collection Handbook, (ANL, 1993)]

$$FO = (TF_1 x\ 1) + (TF_2 x\ 0.4) + (TF_3 x\ 0) \qquad \text{(Equation 2)}$$

Where

TF_1 = Fraction of time spent on site, outdoors (0.25) [Data Collection Handbook, (ANL, 1993)]

TF_2 = Fraction of time spent on site, indoors (0.5) [Data Collection Handbook, (ANL, 1993)]

TF_3 = Fraction of time spent off site (0.25) [Data Collection Handbook, (ANL, 1993)]

The result of this calculation shows that by using realistic assumptions, the natural uranium concentration in air needed to evaluate 5 percent of the most restrictive 40 CFR 190 standard is 8.2×10^{-15} uCi/ml. The highest observed LLD for air concentrations of natural uranium was 7.1×10^{-15} uCi/ml. This LLD is sensitive enough to evaluate the recommended siting criteria for air particulate monitoring at a location at or above the 5 percent of the 40 CFR 190 standards. In addition, this dose level (1.25 mrem) is lower than the dose (5 mrem) resulting from the LLD recommendations for stack effluent samples contained in Section 5 of RG 4.14.

The LLDs for each of the radionuclides are listed in Table 8-1.

8.2.2 Ambient Radon

The ambient radon monitoring results are listed in Table 8-2. Quarter 1 ambient radon concentrations ranged from 1.0 to 9.8, averaging 2.4 pCi/L. Quarter 2 concentrations ranged from 0.4 to 1.8, averaging 1.2 pCi/L. Quarter 3 concentrations ranged from 0.4 to 3.3, averaging 1.8 pCi/L. Quarter 4 concentrations ranged from 0.5 to 0.8, averaging 0.5 pCi/L. Site-wide, annual radon concentrations ranged from to 0.6 to 3.9, and averaged 1.7 pCi/L.

Figure 8-1 presents the ambient radon concentrations in relation to the radium-226 concentrations predicted from the gamma-ray count rate data. One expects higher radon concentrations in the historically mined areas. However, there is only one case where this is true: the Quarter 1 observation at Rn-02, located adjacent to the edge of an open pit mine, is 9.8 pCi/l. There appear to be no spatial trends in the current data set, other than the levels are within the same order of magnitude across the site.

Duplicates were collected at AMS-01 and AMS-BKG in each of the monitoring periods. The QC summary for the radon monitoring is as follows:

- AMS-01: In Quarters 1 and 4, the RPD was 0. In Quarters 2 and 3, the RPD was 55.5.
- AMS-BKG: The RPDs were 30 (Quarter 1), 6.5 (Quarter 2), 12.5 (Quarter 3), and 0.7 (Quarter 4).

In terms of effluent concentrations, the measured values exceed the 10 CFR 20 limit of 0.1 pCi/L for radon-222 with daughters present. However, on average the measured values are within the range of reported worldwide ambient background radon concentrations, 0.027 to 2.7 pCi/L (United Nations Scientific Committee on the Effects of Atomic Radiation [UNSCEAR], 2000).

9.0 AMBIENT EXPOSURE RATES

9.1 Cross-Calibration of Sodium Iodide Detectors and High-Pressure Ion Chamber

Both the sodium iodide detector and PIC measure gamma radiation. The sodium iodide detection system measures the rate that the gamma rays interact with the detector in cpm, has a lower sensitivity than the PIC and is energy dependent. The PIC is a highly accurate ionization

chamber for measuring exposure rate in micoRoentgens per hour (µR/h) but requires a longer count time. The PIC was used because it measures exposure rates directly and is considered a primary standard by NIST, when calibrated. The PIC measures gamma, X-rays, and cosmic radiation without discrimination. It is highly stable, relatively energy independent, and serves as an excellent tool to calibrate other survey equipment to measure exposure rates. Because of its portability and shorter measurement times, the sodium iodide detector is more efficient than the PIC for use in large area surveys. By performing the large area gamma surveys with sodium iodide detectors, then developing a correlation between the two instruments, exposure rates derived from the sodium iodide measurements can represent site wide gamma emissions from surface soils.

Twelve co-located static gamma counts and exposure rate measurements were collected to develop the correlation between gamma counts and exposure rates. The locations were biased towards areas where gamma shine was not relatively high; that is, where gamma count rates remained relatively constant at 18 in, 1 m, and 2 m above ground surface. In addition, locations were chosen to encompass most of the range of sodium iodide detector readings observed in the GPS-based gamma surveys. The sodium iodide measurements were taken using one of the 2-inch by 2-inch sodium iodide detectors that was used in the baseline gamma survey. A 1-minute integrated count was taken at each of the 12 locations with the detector suspended at 18 in. above the ground surface. Exposure rate measurements were then collected at a 1-m height at each location, directly above the location where the sodium iodide detector was held. Exposure rates were determined after 20-minute integrated counts. The PIC and gross gamma measurements were performed on July 14 to 16, 2008 at the locations shown on Figure 9-1.

The linear equation representing the correlation between exposure rates and gamma-ray count rates, determined using the PIC and average of the two sodium iodide detectors is:

$$\textit{Exposure Rate} = 0.0007 \times \textit{Gamma Count Rate} + 2.02$$

where the exposure rate is in gross microRoentgens per hour (µR/hr) and the gamma count rate is in gross cpm.

The linear regression model for the average is a good fit, with an R^2 of 0.96. Nearly all of the data align along the slope of the line, as shown in Figure 9-2. The correlations are similar for the individual sodium iodide detectors and not discussed further.

The linear regression model predicts a median exposure rate of 10.9 µR/hr for the site. The range of predicted exposure rates is 5.9 to 324 µR/hr, based on the observed gamma-ray count rates at the site. The predicted site-wide exposure rates are shown as ranges of colors in on Figure 9-3.

9.2 Ambient Exposure Rates Determined using Thermoluminescent Detectors

Ambient exposure rates were determined for three periods, using TLDs supplied and analyzed by Landauer, Inc. The monitoring periods were: August 15, 2007 to February 4, 2008, February 4 to

May 17, 2008, and May 17 to July 17, 2008. The 29-day period between July 17 and August 15 that would complete the year was not monitored.

The TLDs were deployed at each of the eight AMS locations. Duplicates were deployed at AMS-01 and the background location (AMS-BKG).

Five of the nine TLDs deployed in the August 2007 to February 2008 period were lost, presumably by way of cattle consumption and/or disturbance. Two additional TLDs were lost from subsequent deployments, presumably as a result of cattle in the area.

The ambient gamma dose rate monitoring results are listed in Table 9-1. All reported dose equivalents were converted to an adjusted dose rate by dividing by the time between the shipment of the dosimeters to the site and the time that the dosimeters were processed by the vendor. In order to obtain an estimate of the annual dose equivalent rate, the average daily dose rate for the 29-day period (July 17, 2008-August 15, 2008) which was not monitored was assumed equal to the May 17, 2008 to July 17, 2008 period. This is reasonable since terrestrial dose rates for a location primarily depend on soil moisture and snow and vegetation cover. For locations where TLDs were missing, no attempt was made to obtain an annual projected dose equivalent. The results for the TLDs reported in millirem per year (mrem/yr) ambient dose equivalents are as follows:

- AMS-04: 112 mrem/yr
- AMS-05: 91 mrem/yr
- AMS-07: 109 mrem/yr
- AMS-BKG: 123 mrem/yr

The range of exposure rates (91 to 123 mrem/yr) and average (109 mrem/yr) is similar to average worldwide exposures to natural radiation sources comprised of comic radiation, cosmogenic radionuclides, and external terrestrial radiation reported in the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) Report to the General Assembly, Sources and Effects of Ionizing Radiation, Annex. The typical ranges of average worldwide exposures reported in this reference document are from 60 to 160 mrem/yr.

The TLD results compare favorably with the baseline direct gamma-ray survey data reported in Section 3 when expressed in exposure rate units (μR/h) as reported in Section 9.1, where the average exposure rate was reported as 10.9 microRoentgen/h (μR/h). Since a Roentgen is approximately equal to a rem, 10.9 μR/h can be expressed as 96 mrem/year. This is very close to the 109 mrem/yr average for the four monitoring locations reported above.

10.0 FOOD SAMPLING

To determine baseline radionuclide concentrations in local food, three tissue samples were collected initially (one of liver [DBAT-03], two of meat [DBAT-01, DBAT-02]) from a locally grazed cow on June 25, 2008. The samples were analyzed for natural uranium, radium-226, lead-210, and polonium-210. The results are listed in Table 10-1.

The original interpretation of RG 4.14 was to collect three samples from each type of animal. Therefore, three samples were originally collected from one locally grazed cow. Pursuant to NRC staff interpretation that one sample each should be collected from three different specimens of each type of livestock, the following actions have been performed or will be performed prior to ISR operations:

- Samples from one additional cow have been analyzed for the recommended analytes in RG 4.14.
- Powertech (USA) commits to sampling one additional cow prior to ISR operations, bringing the total to three.
- Samples from one free ranging, locally grazed pig have been analyzed for the recommended analytes in RG 4.14.
- Powertech (USA) commits to sampling two additional pigs prior to ISR operations, bringing the total to three.

The results of all food samples available to date are shown in Table 10-1.

RG 4.14 was as interpreted requiring animal tissue sample analysis for livestock only, particularly in light of recently approved NRC license applications (e.g., Moore Ranch ISR Project, SUA-1596) that have not provided game animal tissue sample analyses. Specifically, RG 4.14 states, "At least three samples should be collected at time of harvest or slaughter or removal of animals from grazing for each type of crop (including vegetable gardens) or livestock raised within 3.3 km of the mill site." As additional justification, the migratory nature and relatively large home range of game animals observed in the area in relation to the size of the project area make it difficult to relate radionuclide concentrations to a particular site.

There are several cases where reported concentrations are at or below LLDs that, in turn, exceed the LLDs recommended in RG 4.14. This is evident for all reported concentrations of natural uranium, radium-226 and polonium-210 in Sample DBAT-01, and lead-210 in all three of the original samples. There are only three cases where radionuclide concentrations exceed LLDs. Radium-226 concentrations are 0.003 and 0.06 pCi/g in Samples DBAT-01 and DBAT-02. The concentration of polonium-210 in Sample DBAT-03 is 0.02 pCi/g. Reported concentrations of thorium-230 and in one case lead-210 for the pig and beef sample collected in 2011 also are below the reported LLDs.

The current use of the data in Table 10-1 is to provide a pre-operational baseline concentration of radionuclides in animal tissue. NUREG/CR-4007 (NRC, 1984) states that any measurement process must be capable of detecting the relevant radionuclides at levels well below those of concern to the public health and safety. Currently there are no regulatory limits for radionuclides in food items to evaluate the appropriate sensitivity of the analytical methods used. For justification purposes herein, it was assumed that 10 percent of the total effective dose equivalent public dose limit of 100 mrem per year in 10 CFR 20 would be an appropriate comparison for food items.

The following equation was used to determine the concentration in food products, in this case beef, that would result in a dose equivalent of 10 percent of the public dose limit standard in 10 CFR 20. Table 10-2 presents the results of the radionuclide concentration in beef that meet this criteria and the dose conversion factors used.

$$C_i = \frac{10\ mrem/yr}{IxDCF_i}$$

Where:

C_i = Concentration of radionuclide (i) in beef that would result in dose equivalent of 1.25 mrem/y (μCi/kg)

10 mrem = 10% of 10 CFR 20 public dose limit of 100 mrem/year (CEDE)

DCFi = Dose Conversion Factor for ingestion of radionuclide (i) (mrem/μCi) [Federal Guidance Report 11 (EPA, 1988)]

I = Beef intake rate for adult (27 kg/y) [Data Collection Handbook, (ANL, 1993)]

Based on the justification above, LLDs for beef tissue should be below the concentrations presented in Table 10-2. All but one LLD for beef tissue results (lead-210 in DBAT-02) are below the concentration values in Table 10-2. All the LLDs for food samples collected in 2011 are below the values presented in Table 10-2.

The meat LLDs in Table 10-1 are substantially different from each other because of differences in matrix interference, sample size, and low radionuclide concentrations within the sample matrix. The potential for this result is acknowledged in NUREG/CR-4007, which states that "the critical (decision) level and detection limit (LLD) really do vary with the nature of the sample" and that "proper assessment of these quantities demands relevant information on each sample, unless the variations among samples are quite trivial" (NRC, 1984).

11.0 SUMMARY AND CONCLUSIONS

The results of the Dewey-Burdock baseline field investigation documented herein indicate the following:

- Baseline gamma-ray count rates have been obtained across the permit area. Twenty-five percent of the count rates were lower than 11,395 cpm. Seventy-five percent of the count rates were below 14,437 cpm. Three distinct populations of gamma-ray count rates were observed: an anomalous 600-acre portion of the main permit area, the main permit area itself, and the surface mine area. Considered individually, each has non-parametric count-rate distributions.

- Elevated levels of radioactivity, as characterized by gamma readings greater than 17,945 cpm in the main permit area and 20,270 cpm in the surface mine area, occur in the anomalous portion of the main permit area and legacy mine wastes and open pits in the surface mine area.

- The surface soil sampling results corroborate the findings discussed above regarding spatial trends of radioactivity at the site. The majority of the site is characterized by an average predicted surface radium-226 concentration of 0.9 pCi/g. One exception is in the north end of the main permit area where the average predicted radium-226 concentration is 1.1 pCi/g. Also, areas in the surface mine area exhibit higher levels of radioactivity which are indicative of anthropogenic or other impacts.

- Experience at other milling sites underscores the need for using detailed baseline radiological information that shows varying site wide radium-226 concentrations, as adherence to a single number (especially if a conservative estimator such as a mean is used) can result in unnecessary cleanup and/or habitat destruction.

- Average radon flux rates ranged between 0.60 and 1.57 pCi/m^2-s. The highest individual measurement was 2.38 pCi/m^2-s These values are one to two orders of magnitude below the NESHAPS limit of 20 pCi/m^2-s specified in 10 CFR 40, Appendix A, Criterion 6. Although the latter requirement applies to uranium mill tailings and thus is not directly germane to this characterization, it is informative to demonstrate the relatively low magnitude of baseline radon flux levels measured at the site.

- Analytical errors associated with the low radionuclide concentrations in vegetation samples do not allow for a correlation to radionuclide concentrations in soils at the same sample locations.

- Particulate radionuclide concentrations in air across the site have been consistently low and at levels at least 95 % below their respective 10 CFR 20 effluent levels.

- Site-wide, annual radon concentrations ranged from to 0.6 to 3.9, and averaged 1.7 pCi/L. There appear to be no temporal or spatial trends in the current data set other than the levels are within the same order of magnitude across the site.

- A linear regression model comparing PIC to gamma-ray count rate measurements predicts an average exposure rate of 10.9 µR/hr for the site. The range of predicted exposure rates is 5.9 to 324 µR/hr, based on the observed gamma-ray count rates at the site.

- Baseline ambient exposure rates, as determined using TLDs, range from 91 to 123 mrem/yr.

In summary, it is clear that portions of the surface mine area, in the eastern quarter of the site exhibits radiological impacts from historic and or current anthropogenic activities within the area. The precise sources of these impacts are not relevant in the context of this investigation since the apparent impacts are part of the baseline or background radiological characteristics of the site.

12.0 REFERENCES

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Tables

Table 2-1. Summary of Baseline Radiological Investigation Scope

Survey Method/Endpoint	Baseline Investigation Scope	Parameters Evaluated
A. GPS-based Gamma Surveys	18- inch high, unshielded gamma-ray readings coupled with x- and y- coordinates taken every second moving along 100 or 500 meter transects at ≤1.5 meters per second. Surveys were made over the entire site along 17 transects in the main permit area, 48 transects in the surface mine area, and along two roads. A second survey covered land application areas along 100 meter transects.	Serve as basis to estimate exposure rates, surface soil radium-226 concentrations, and to identify additional areas for biased sampling.
B. Biased Soil Sampling	Biased samples at 5 locations, all collected from 0 to 15 cm.	Radium-226 for all samples; Thorium-230, natural uranium, lead-210, for a subset (2 locations)
C. Random Soil Sampling	Random samples at 75 locations. Nine of the 75 locations were sampled at depth (15-30 cm and 30-100 cm). Ten duplicates at 0 to 15 cm. One duplicate at 15 to 30 cm. One duplicate at 30 to 100 cm.	Radium-226 for all samples; Thorium-230, natural uranium, lead-210 (8 from 0 to 15 cm and one each at 15 to 30 and 30 to 100 cm)
D. Soil sampling in land application areas	Random samples at 17 locations, all but one of which were sampled at 0 to 15, 15 to 30 and 30 to 100 cm. Refusal was encountered at 45 cm in the exceptional location. One duplicate each at 0 to 5, 15 to 30, and 30 to 100 cm.	Radium-226, thorium-230, natural uranium, and lead-210 for all samples
E. Exposure Rate Monitoring	Exposure rate determinations based on TLD and PIC measurements. TLD measurements collected for four quarters.	Exposure Rates
F. Soil and Vegetation Sampling at Air Monitoring Stations	Eight locations: seven onsite (AMS-01 through AMS-07) and one located approximately 1.9 miles west of the southwest corner of the permit area (AMS-BKG). Vegetation samples collected for four quarters. Given the diurnal nature of winds, at various times this station would be representative of downwind and upwind locations.	Vegetation: radium-226, thorium-230, natural uranium, lead-210, and polonium-210 Soil: All of above except polonium-210
G. Air Particulate Sampling	Eight locations: seven onsite (AMS-01 through AMS-07) and one located approximately 1.9 miles west of the southwest corner of the permit area (AMS-BKG). Air particulate samples collected for four quarters.	Air filters: radium-226, thorium-230, natural uranium, lead-210 and polonium-210

Table 2-1. Summary of Baseline Radiological Investigation Scope (concluded)

Survey Method/Endpoint	Baseline Investigation Scope	Parameters Evaluated
H. Radon in air	16 locations: eight AMS and eight additional locations. Radon in air measurements taken for four quarters.	Radon-222
I. Radon Flux Measurements	Radon flux measurements at nine locations (coinciding with biased soil samples collected at depth in Task C above).	Radon-222
J. Locally Grazed Livestock Sampling	Three samples collected from one locally grazing cow and one sample from one additional cow and one pig.	Radium-226, thorium-230, natural uranium, lead-210 and polonium-210

Table 3-1. Data Pairs from 2007 and 2008 Gamma Surveys

Location	2007 Count Rate (cpm)	2008 Count Rate (cpm)	Ratio 2007:2008
1	12,721	14,985	0.85
2	12,060	11,309	1.07
3	12,186	11,299	1.08
4	11,958	11,562	1.03
5	15,016	15,074	1.00
6	13,358	13,752	0.97
7	13,829	13,970	0.99
8	12,685	12,207	1.04
9	15,788	14,633	1.08
10	12,979	12,945	1.00
		Mean	1.01

Table 3-2. Statistical Summary of Gamma-Ray Count Rates in Entire Data Set, Main Permit and Surface Mine Areas

	Gamma-Ray Count Rate (cpm)		
Statistic	**Entire Data Set**	**Main Permit Area**	**Surface Mine Area**
Mean	15,025	13,073	16,823
Standard Deviation	17,095	2,995	23,377
Median	12,687	12,664	12,717
Mode	12,487 (n=53)	12,585 (n=35)	12,138 (n=31)
Minimum	5,550	5,883	5,550
Maximum	460,485	171,243	460,485
Q1	11,395	11,598	11,125
Q3	14,437	14,137	14,783
IQR	3,042	2,539	3,658
No. of Counts	157,075	75,345	81,757

Notes:
Entire data set does not include gamma-ray counts obtained along the eastern haul road. In addition, the sum of the counts in the main permit and surface mine areas is 27 counts greater than the counts in the entire data set, due to an overlap in counts within the two shapes placed as a layer in ArcView GIS to select the data sets. .

Table 3-3. Statistical Summary of Gamma-Ray Count Rates in Land Application Areas

	Gamma-Ray Count Rate (cpm)		
		Land Application Area	
Statistic	**Main Permit Area**	**Dewey**	**Burdock**
Mean	13,073	12,815	12,308
Standard Deviation	2,995	1,940	1,318
Median	12,664	12,523	12,232
Mode	12,585 (n=35)	11,778 (n=15)	12,266 (n=16)
Minimum	5,883	6,798	8,498
Maximum	171,243	20,422	24,248
Q1	11,598	11,437	11,504
Q3	14,137	13,993	12,958
IQR	2,539	2,556	1,454
No. of Counts	75,345	23,480	13,647

Table 4-1. Radionuclide Concentrations in All Soil Samples

Sample ID	Date Collected	Depth (cm)	Gamma Count Rate (cpm)	U-nat (µCi/g)	Pb-210 (µCi/g)	Pb-210 Error (µCi/g)	Th-230 (µCi/g)	Th-230 Error (µCi/g)	Ra-226 (µCi/g)	Ra-226 Error (µCi/g)	U-nat LLD (µCi/g)	Pb-210 LLD (µCi/g	Th-230 LLD (µCi/g)	Ra-226 LLD (µCi/g)
AMS-1	9/27/2007	0-5	-	9.6E-07	2.0E-06	3.0E-07	4.0E-07	1.0E-07	1.4E-06	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
AMS-2	9/27/2007	0-5	-	9.5E-07	3.0E-06	3.0E-07	5.0E-07	1.0E-07	1.1E-06	2.0E-07	2.0E-08	1 E-07	1 E-07	1 E-07
AMS-3	9/27/2007	0-5	-	8.2E-07	2.0E-06	2.0E-07	4.0E-07	1.0E-07	1.5E-06	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
AMS-4	9/27/2007	0-5	-	1.4E-06	2.0E-06	2.0E-07	8.0E-07	2.0E-07	1.5E-06	3.0E-07	1.8E-08	1 E-07	1 E-07	1 E-07
AMS-5	9/27/2007	0-5	-	6.8E-07	2.0E-06	2.0E-07	6.0E-07	1.0E-07	1.3E-06	3.0E-07	1.8E-08	1 E-07	1 E-07	1 E-07
AMS-6	9/27/2007	0-5	-	5.5E-07	1.0E-06	2.0E-07	4.0E-07	1.0E-07	8.0E-07	2.0E-07	1.8E-08	1 E-07	1 E-07	1 E-07
AMS-7	9/27/2007	0-5	-	5.8E-07	2.0E-06	2.0E-07	3.0E-07	8.0E-08	1.1E-06	2.0E-07	1.8E-08	1 E-07	1 E-07	1 E-07
AMS-BKG	9/27/2007	0-5	-	1.9E-06	2.0E-06	2.0E-07	9.0E-07	1.0E-07	2.4E-06	4.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
MPA-B01	9/25/2007	0-15	13824	-	-	-	-	-	1.4E-06	3.0E-07	-	-	-	1 E-07
MPA-B02	9/25/2007	0-15	14176	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
MPA-B03	9/25/2007	0-15	13006	-	-	-	-	-	1.3E-06	3.0E-07	-	-	-	1 E-07
MPA-R01	9/24/2007	0-15	13749	-	-	-	-	-	1.4E-06	2.0E-07	-	-	-	1 E-07
MPA-R02	9/24/2007	0-15	16059	-	-	-	-	-	2.6E-06	3.0E-07	-	-	-	1 E-07
MPA-R03	9/24/2007	0-15	10796	7.5E-07	7.0E-07	1.0E-07	4.0E-07	1.0E-07	1.1E-06	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
MPA-R04	9/24/2007	0-15	10810	-	-	-	-	-	-	-	-	-	-	1 E-07
MPA-R04-Dup	9/24/2007	0-15	-	-	-	-	-	-	-	-	-	-	-	1 E-07
MPA-R05	9/24/2007	0-15	11850	-	-	-	-	-	-	-	-	-	-	1 E-07
NEA-R01	9/24/2007	0-15	12302	9.1E-07	7.0E-07	2.0E-07	6.0E-07	1.0E-07	1.1E-06	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
NEA-R02	9/24/2007	0-15	13176	-	-	-	-	-	1.3E-06	2.0E-07	-	-	-	1 E-07
NEA-R03	9/24/2007	0-15	16393	-	-	-	-	-	2.2E-06	3.0E-07	-	-	-	1 E-07
NEA-R04	9/24/2007	0-15	17356	-	-	-	-	-	2.3E-06	3.0E-07	-	-	-	1 E-07
NEA-R04-Dup	9/24/2007	0-15	-	-	-	-	-	-	2.5E-06	3.0E-07	-	-	-	1 E-07
NEA-R05	9/24/2007	0-15	17269	-	-	-	-	-	2.8E-06	3.0E-07	-	-	-	1 E-07
RFA-B01A	9/26/2007	0-15	13115	8.7E-07	1.0E-06	2.0E-07	7.0E-07	1.0E-07	1.2E-06	2.0E-07	2 E-08	1 E-07	1 E-07	1 E-07
RFA-B01A-Dup	9/26/2007	0-15	-	9.0E-07	8.0E-07	1.0E-07	7.0E-07	1.0E-07	1.1E-06	2.0E-07	1.7E-07	1 E-07	1 E-07	1 E-07
RFA-B02A	9/26/2007	0-15	13360	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B03	9/25/2007	0-15	14253	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B04	9/25/2007	0-15	13963	-	-	-	-	-	1.5E-06	3.0E-07	-	-	-	1 E-07
RFA-B06	9/25/2007	0-15	13819	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B07	9/25/2007	0-15	12700	-	-	-	-	-	1.7E-06	2.0E-07	-	-	-	1 E-07

Table 4-1. Radionuclide Concentrations in All Soil Samples (continued)

Sample ID	Date Collected	Depth (cm)	Gamma Count Rate (cpm)	U-nat (µCi/g)	Pb-210 (µCi/g)	Pb-210 Error (µCi/g)	Th-230 (µCi/g)	Th-230 Error (µCi/g)	Ra-226 (µCi/g)	Ra-226 Error (µCi/g)	U-nat LLD (µCi/g)	Pb-210 LLD (µCi/g	Th-230 LLD (µCi/g)	Ra-226 LLD (µCi/g)
RFA-B08	9/25/2007	0-15	13433	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
RFA-B08-Dup	9/25/2007	0-15	13528	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B09	9/25/2007	0-15	14825	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B10	9/25/2007	0-15	13366	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
RFA-B11	9/25/2007	0-15	14253	8.8E-07	1.0E-06	2.0E-07	5.0E-07	1.0E-07	1.8E-06	3.0E-07	2 E-8	1 E-07	1 E-07	1 E-07
RFA-B12	9/25/2007	0-15	13135	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
RFA-B13A	9/26/2007	0-15	13987	-	-	-	-	-	1.8E-06	3.0E-07	-	-	-	1 E-07
RFA-B14	9/25/2007	0-15	13872	-	-	-	-	-	1.7E-06	3.0E-07	-	-	-	1 E-07
RFA-B15A	9/26/2007	0-15	13535	-	-	-	-	-	1.4E-06	3.0E-07	-	-	-	1 E-07
RFA-B16	9/25/2007	0-15	13675	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
RFA-B17A	9/26/2007	0-15	16283	-	-	-	-	-	2.0E-06	3.0E-07	-	-	-	1 E-07
RFA-B18	9/25/2007	0-15	13835	-	-	-	-	-	1.7E-06	3.0E-07	-	-	-	1 E-07
RFA-B19	9/25/2007	0-15	13689	-	-	-	-	-	1.2E-06	2.0E-07	-	-	-	1 E-07
RFA-B20	9/25/2007	0-15	13113	8.8E-07	1.0E-06	2.0E-07	5.0E-07	1.0E-07	1.3E-06	3.0E-07	1.9E-8	1 E-07	1 E-07	1 E-07
RFA-B21A	9/26/2007	0-15	16641	-	-	-	-	-	5.6E-06	4.0E-07	-	-	-	1 E-07
RFA-B22	9/25/2007	0-15	14087	-	-	-	-	-	1.5E-06	2.0E-07	-	-	-	1 E-07
RFA-B23	9/25/2007	0-15	19674	-	-	-	-	-	3.6E-06	4.0E-07	-	-	-	1 E-07
RFA-B24	9/25/2007	0-15	12766	-	-	-	-	-	1.3E-06	2.0E-07	-	-	-	1 E-07
RFA-B25	9/25/2007	0-15	10300	6.7E-07	1.0E-06	2.0E-07	4.0E-07	1.0E-07	1.2E-06	2.0E-07	1.9E-8	1 E-07	1 E-07	1 E-07
RFA-B26	9/25/2007	0-15	11791	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B27	9/25/2007	0-15	13794	-	-	-	-	-	1.5E-06	2.0E-07	-	-	-	1 E-07
RFA-B28	9/25/2007	0-15	15246	-	-	-	-	-	2.4E-06	3.0E-07	-	-	-	1 E-07
RFA-B28-Dup	9/25/2007	0-15	-	-	-	-	-	-	1.8E-06	3.0E-07	-	-	-	1 E-07
RFA-B29	9/25/2007	0-15	14345	-	-	-	-	-	1.7E-06	3.0E-07	-	-	-	1 E-07
RFA-B30A	9/26/2007	0-15	12461	-	-	-	-	-	1.8E-06	2.0E-07	-	-	-	1 E-07
RFA-B31	9/25/2007	0-15	12221	-	-	-	-	-	1.3E-06	2.0E-07	-	-	-	1 E-07
RFA-B33	9/25/2007	0-15	13221	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
RFA-B34	9/25/2007	0-15	13408	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
RFA-B35	9/25/2007	0-15	12290	-	-	-	-	-	1.2E-06	2.0E-07	-	-	-	1 E-07
RFA-B36A	9/25/2007	0-15	12465	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
RFA-B37A	9/26/2007	0-15	11170	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07

Table 4-1. Radionuclide Concentrations in All Soil Samples (continued)

Sample ID	Date Collected	Depth (cm)	Gamma Count Rate (cpm)	U-nat (µCi/g)	Pb-210 (µCi/g)	Pb-210 Error (µCi/g)	Th-230 (µCi/g)	Th-230 Error (µCi/g)	Ra-226 (µCi/g)	Ra-226 Error (µCi/g)	U-nat LLD (µCi/g)	Pb-210 LLD (µCi/g	Th-230 LLD (µCi/g)	Ra-226 LLD (µCi/g)
RFA-B38	9/25/2007	0-15	11852	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
RFA-B39	9/25/2007	0-15	11478	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B40	9/25/2007	0-15	12629	5.6E-07	1.0E-06	2.0E-07	3.0E-07	1.0E-07	1.1E-06	2.0E-07	1.7E-08	1 E-07	1 E-07	1 E-07
RFA-B41	9/25/2007	0-15	11806	-	-	-	-	-	1.2E-06	2.0E-07	-	-	-	1 E-07
RFA-B43	9/25/2007	0-15	13264	-	-	-	-	-	1.7E-06	3.0E-07	-	-	-	1 E-07
RFA-B44	9/25/2007	0-15	11436	-	-	-	-	-	1.4E-06	2.0E-07	-	-	-	1 E-07
RFA-B45	9/25/2007	0-15	12242	-	-	-	-	-	1.6E-06	3.0E-07	-	-	-	1 E-07
SMA-B01	9/24/2007	0-15	10459	1.2E-06	6.0E-07	1.0E-07	5.0E-07	1.0E-07	9.0E-07	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
SMA-B01-Dup	9/24/2007	0-15	-	1.5E-06	2.0E-06	2.0E-07	6.0E-07	1.0E-07	1.4E-06	3.0E-07	1.8E-08	1 E-07	1 E-07	1 E-07
SMA-B03	9/24/2007	0-15	22410	-	-	-	-	-	1.5E-06	2.0E-07	-	-	-	1 E-07
SMA-B04	9/24/2007	0-15	15263	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
SMA-B07	9/24/2007	0-15	22925	-	-	-	-	-	3.2E-06	3.0E-07	-	-	-	1 E-07
SMA-B09	9/24/2007	0-15	12879	-	-	-	-	-	1.2E-06	2.0E-07	-	-	-	1 E-07
SMA-B09-Dup	9/24/2007	0-15	-	-	-	-	-	-	1.7E-06	2.0E-07	-	-	-	1 E-07
SMA-B10	9/25/2007	0-15	13184	-	-	-	-	-	1.4E-06	2.0E-07	-	-	-	1 E-07
SMA-B11	9/24/2007	0-15	17346	-	-	-	-	-	2.3E-06	3.0E-07	-	-	-	1 E-07
SMA-B13	9/25/2007	0-15	13252	-	-	-	-	-	1.7E-06	3.0E-07	-	-	-	1 E-07
SMA-B14	9/24/2007	0-15	14483	-	-	-	-	-	1.4E-06	3.0E-07	-	-	-	1 E-07
SMA-B14-Dup	9/24/2007	0-15	-	-	-	-	-	-	1.6E-06	2.0E-07	-	-	-	1 E-07
SMA-B15	9/24/2007	0-15	8474	-	-	-	-	-	8.0E-07	2.0E-07	-	-	-	1 E-07
SMA-B16	9/24/2007	0-15	10235	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
SMA-B17	9/24/2007	0-15	10139	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
SMA-B18	9/25/2007	0-15	8511	-	-	-	-	-	5.0E-07	1.0E-07	-	-	-	1 E-07
SMA-B18-Dup	9/25/2007	0-15	-	-	-	-	-	-	4.0E-07	1.0E-07	-	-	-	1 E-07
SMA-B19	9/24/2007	0-15	10074	-	-	-	-	-	1.2E-06	2.0E-07	-	-	-	1 E-07
SMA-B20	9/27/2007	0-15	10897	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
SMA-B21	9/24/2007	0-15	16712	-	-	-	-	-	1.4E-06	2.0E-07	-	-	-	1 E-07
SMA-B22	9/24/2007	0-15	10618	-	-	-	-	-	8.0E-07	2.0E-07	-	-	-	1 E-07
SMA-B23	9/24/2007	0-15	16233	-	-	-	-	-	2.7E-06	3.0E-07	-	-	-	1 E-07
SMA-B23-Dup	9/24/2007	0-15	-	-	-	-	-	-	2.8E-06	3.0E-07	-	-	-	1 E-07
SMA-B24	9/24/2007	0-15	12662	-	-	-	-	-	1.3E-06	2.0E-07	-	-	-	1 E-07

Table 4-1. Radionuclide Concentrations in All Soil Samples (continued)

Sample ID	Date Collected	Depth (cm)	Gamma Count Rate (cpm)	U-nat (µCi/g)	Pb-210 (µCi/g)	Pb-210 Error (µCi/g)	Th-230 (µCi/g)	Th-230 Error (µCi/g)	Ra-226 (µCi/g)	Ra-226 Error (µCi/g)	U-nat LLD (µCi/g)	Pb-210 LLD (µCi/g	Th-230 LLD (µCi/g)	Ra-226 LLD (µCi/g)
SMA-B25	9/24/2007	0-15	9991	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
SMA-B26	9/28/2007	0-15	73243	-	-	-	-	-	1.1E-05	5.0E-07	-	-	-	1 E-07
SMA-B27	9/28/2007	0-15	130293	6.7E-05	3.0E-05	8.0E-07	3.0E-05	8.0E-07	4.0E-05	1.1E-06	1.7E-08	1 E-07	1 E-07	1 E-07
SMA-B28	9/29/2007	0-15	39061	-	-	-	-	-	6.4E-06	4.0E-07	-	-	-	1 E-07
SMA-B29	9/28/2007	0-15	231041	1.6E-05	2.0E-05	7.0E-07	2.0E-05	6.0E-07	2.9E-05	9.0E-07	1.7E-08	1 E-07	1 E-07	1 E-07
SMA-B30	9/28/2007	0-15	89139	-	-	-	-	-	3.4E-05	9.0E-07	-	-	-	1 E-07
LAN 001A	7/18/2008	0-15	-	1.8E-06	2.4E-06	2.3E-06	1.2E-06	6.0E-07	8.0E-07	9.0E-08	7E-09	3.8 E-06	1 E-07	4 E-08
LAN 002A	7/18/2008	0-15	-	8.6E-07	3.4E-06	2.3E-06	9.0E-07	5.0E-07	9.0E-07	1.0E-07	7E-09	3.7 E-06	1 E-07	5 E-08
LAN 003A	7/18/2008	0-15	-	7.8E-07	8.0E-07	2.2E-06	7.0E-07	6.0E-07	1.2E-06	1.0E-07	7E-09	3.6 E-06	1 E-07	5 E-08
LAN 004A	7/18/2008	0-15	-	6.9E-07	1.0E-06	1.4E-06	6.0E-07	6.0E-07	1.9E-06	2.0E-07	7E-09	2.4 E-06	1 E-07	8 E-08
LAN 004A-DUP	7/18/2008	0-15	-	7.2E-07	5.0E-07	1.4E-06	4.0E-07	3.0E-07	7.0E-07	1.0E-07	7E-09	2.4 E-06	1 E-07	8 E-08
LAN 005A	7/18/2008	0-15	-	8.4E-07	1.2E-06	1.4E-06	9.0E-07	5.0E-07	4.4E-06	3.0E-07	7E-09	2.3 E-06	1 E-07	8 E-08
LAN 006A	7/18/2008	0-15	-	7.1E-07	-5.0E-09	1.4E-06	3.0E-07	5.0E-07	1.1E-06	1.0E-07	7E-09	2.4 E-06	1 E-07	8 E-08
LAN 007A	7/18/2008	0-15	-	8.1E-07	6.0E-07	1.4E-06	3.0E-07	5.0E-07	7.0E-07	1.0E-07	7E-09	2.4 E-06	1 E-07	8 E-08
LAN 008A	7/18/2008	0-15	-	2.1E-06	1.0E-06	1.4E-06	1.0E-06	7.0E-07	9.0E-07	1.0E-07	7E-09	2.3 E-06	1 E-07	9 E-08
LAN 009A	7/18/2008	0-15	-	1.1E-06	-4.0E-07	1.4E-06	3.0E-07	6.0E-07	8.0E-07	1.0E-07	7E-09	2.3 E-06	1 E-07	8 E-08
LAN 010A	7/18/2008	0-15	-	1.6E-06	1.8E-06	1.2E-06	1.2E-06	6.0E-07	1.2E-06	2.0E-07	7E-09	2.0 E-06	1 E-07	1 E-07
LAS 001A	7/19/2008	0-15	-	1.2E-06	1.6E-06	1.2E-06	6.0E-07	5.0E-07	9.0E-07	1.0E-07	7E-09	1.9 E-06	1 E-07	1 E-07
LAS 002A	7/19/2008	0-15	-	4.8E-07	1.4E-06	1.2E-06	1.0E-07	5.0E-07	7.0E-07	1.0E-07	7E-09	1.9 E-06	1 E-07	1 E-07
LAS 003A	7/19/2008	0-15	-	5.0E-07	1.4E-06	1.2E-06	3.0E-07	4.0E-07	7.0E-07	1.0E-07	7E-09	1.9 E-06	1 E-07	1 E-07
LAS 004A	7/19/2008	0-15	-	1.1E-06	1.2E-06	1.2E-06	6.0E-07	5.0E-07	8.0E-07	1.0E-07	7E-09	1.9 E-06	1 E-07	1 E-07
LAS 005A	7/19/2008	0-15	-	1.2E-06	1.6E-06	1.2E-06	4.0E-07	3.0E-07	9.0E-07	1.0E-07	1E-08	1.9 E-06	1 E-07	1 E-07
LAS 006A	7/19/2008	0-15	-	3.7E-07	7.0E-07	1.1E-06	6.0E-07	6.0E-07	7.0E-07	1.0E-07	7E-09	1.9 E-06	1 E-07	1 E-07
LAS 007A	7/19/2008	0-15	-	4.3E-07	6.0E-07	1.5E-06	6.0E-07	1.0E-07	8.0E-07	1.0E-07	7E-09	2.5E-06	1 E-07	9 E-08
RFA-B01B	9/26/2007	15-30	13115	1.1E-06	2.0E-06	2.0E-07	9.0E-01	2.0E-01	1.7E-06	2.0E-07	1.8E-08	1 E-07	1 E-07	1 E-07
RFA-B01B-Dup	9/26/2007	15-30	-	9.9E-07	9.0E-07	2.0E-07	9.0E-01	2.0E-01	1.5E-06	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
RFA-B02B	9/26/2007	15-30	-	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
RFA-B13B	9/26/2007	15-30	-	-	-	-	-	-	1.8E-06	2.0E-07	-	-	-	1 E-07
RFA-B15B	9/26/2007	15-30	-	-	-	-	-	-	1.5E-06	2.0E-07	-	-	-	1 E-07
RFA-B17B	9/26/2007	15-30	-	-	-	-	-	-	2.2E-06	3.0E-07	-	-	-	1 E-07
RFA-B21B	9/26/2007	15-30	-	-	-	-	-	-	1.3E-06	2.0E-07	-	-	-	1 E-07

Table 4-1. Radionuclide Concentrations in All Soil Samples (continued)

Sample ID	Date Collected	Depth (cm)	Gamma Count Rate (cpm)	U-nat (µCi/g)	Pb-210 (µCi/g)	Pb-210 Error (µCi/g)	Th-230 (µCi/g)	Th-230 Error (µCi/g)	Ra-226 (µCi/g)	Ra-226 Error (µCi/g)	U-nat LLD (µCi/g)	Pb-210 LLD (µCi/g	Th-230 LLD (µCi/g)	Ra-226 LLD (µCi/g)
RFA-B30B	9/26/2007	15-30	-	-	-	-	-	-	2.1E-06	3.0E-07	-	-	-	1 E-07
RFA-B36B	9/26/2007	15-30	-	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
RFA-B37B	9/26/2007	15-30	-	-	-	-	-	-	7.0E-07	2.0E-07	-	-	-	1 E-07
LAN 001B	7/18/2008	15-30	-	1.9E-06	4.6E-06	2.3E-06	1.4E-06	6.0E-07	8.0E-07	1.0E-07	7E-09	3.8E-06	1 E-07	4 E-08
LAN 002B	7/18/2008	15-30	-	7.5E-07	1.5E-06	2.3E-06	4.0E-07	4.0E-07	1.0E-06	1.0E-07	7E-09	3.8E-06	1 E-07	6 E-08
LAN 003B	7/18/2008	15-30	-	1.1E-06	2.4E-06	2.3E-06	8.0E-07	5.0E-07	1.2E-06	1.0E-07	7E-09	3.8E-06	1 E-07	5E-08
LAN 004B	7/18/2008	15-30	-	7.9E-07	2.2E-06	1.4E-06	2.0E-07	5.0E-07	1.3E-06	2.0E-07	7E-09	2.3E-06	1 E-07	8E-08
LAN 004B-DUP	7/18/2008	15-30	-	6.8E-07	-3.0E-07	1.4E-06	5.0E-07	4.0E-07	7.0E-07	1.0E-07	7E-09	2.3E-06	1 E-07	8E-08
LAN 005B	7/18/2008	15-30	-	7.1E-07	9.0E-07	1.4E-06	6.0E-07	4.0E-07	1.6E-06	2.0E-07	7E-09	2.4E-06	1 E-07	2E-07
LAN 006B	7/18/2008	15-30	-	7.5E-07	5.0E-07	1.4E-06	6.0E-07	4.0E-07	1.3E-06	1.0E-07	7E-09	2.3E-06	1 E-07	8E-08
LAN 007B	7/18/2008	15-30	-	1.5E-06	6.0E-07	1.4E-06	4.0E-07	4.0E-07	7.0E-07	1.0E-07	7E-09	2.4E-06	1 E-07	8E-08
LAN 008B	7/18/2008	15-30	-	3.5E-06	1.0E-07	1.4E-06	9.0E-07	7.0E-07	1.0E-06	1.0E-07	7E-09	2.3E-06	1 E-07	8E-08
LAN 009B	7/18/2008	15-30	-	1.8E-06	-3.0E-07	1.4E-06	7.0E-07	5.0E-07	4.1E-06	3.0E-07	7E-09	2.3E-06	1 E-07	8E-08
LAN 010B	7/18/2008	15-30	-	1.5E-06	1.1E-06	1.1E-06	7.9E-06	1.2E-06	1.4E-06	2.0E-07	7E-09	2.0E-06	1 E-07	1E-07
LAS 001B	7/19/2008	15-30	-	8.6E-07	1.1E-06	1.2E-06	4.0E-07	5.0E-07	8.0E-07	1.0E-07	7E-09	2.0E-06	1 E-07	1E-07
LAS 002B	7/19/2008	15-30	-	7.1E-07	7.0E-07	1.2E-06	4.0E-07	4.0E-07	7.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1E-07
LAS 003B	7/19/2008	15-30	-	1.2E-06	1.1E-06	1.1E-06	5.0E-07	4.0E-07	9.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1E-07
LAS 004B	7/19/2008	15-30	-	9.5E-07	1.3E-06	1.2E-06	5.0E-07	4.0E-07	8.0E-07	1.0E-07	7E-09	2.0E-06	1 E-07	1E-07
LAS 005B	7/19/2008	15-30	-	1.6E-06	1.4E-06	1.1E-06	4.0E-07	4.0E-07	1.0E-06	2.0E-07	7E-09	1.9E-06	1 E-07	1E-07
LAS 006B	7/19/2008	15-30	-	4.8E-07	1.4E-06	1.2E-06	3.0E-07	4.0E-07	7.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1E-07
LAS 007B	7/19/2008	15-30	-	4.5E-07	6.0E-07	1.5E-06	6.0E-07	1.0E-07	7.0E-07	1.0E-07	7E-09	2.5E-06	1 E-07	1E-07
RFA-B01C	9/26/2007	30-100	-	1.5E-06	6.0E-07	1.0E-07	8.0E-01	1.0E-01	1.2E-06	2.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
RFA-B01C-Dup	9/29/2007	30-100	-	1.3E-06	1.0E-06	2.0E-07	1.0E+00	2.0E-01	1.7E-06	3.0E-07	1.9E-08	1 E-07	1 E-07	1 E-07
RFA-B02C	9/26/2007	30-100	-	-	-	-	-	-	9.0E-07	2.0E-07	-	-	-	1 E-07
RFA-B13C	9/26/2007	30-100	-	-	-	-	-	-	1.6E-06	2.0E-07	-	-	-	1 E-07
RFA-B15C	9/26/2007	30-100	-	-	-	-	-	-	1.5E-06	3.0E-07	-	-	-	1 E-07
RFA-B17C	9/26/2007	30-100	-	-	-	-	-	-	2.5E-06	3.0E-07	-	-	-	1 E-07
RFA-B21C	9/26/2007	30-100	-	-	-	-	-	-	1.2E-06	2.0E-07	-	-	-	1 E-07
RFA-B30C	9/26/2007	30-100	-	-	-	-	-	-	1.7E-06	3.0E-07	-	-	-	1 E-07

Table 4-1. Radionuclide Concentrations in All Soil Samples (concluded)

Sample ID	Date Collected	Depth (cm)	Gamma Count Rate (cpm)	U-nat (µCi/g)	Pb-210 (µCi/g)	Pb-210 Error (µCi/g)	Th-230 (µCi/g)	Th-230 Error (µCi/g)	Ra-226 (µCi/g)	Ra-226 Error (µCi/g)	U-nat LLD (µCi/g)	Pb-210 LLD (µCi/g	Th-230 LLD (µCi/g)	Ra-226 LLD (µCi/g)
RFA-B36C	9/26/2007	30-100	-	-	-	-	-	-	1.0E-06	2.0E-07	-	-	-	1 E-07
RFA-B37C	9/26/2007	30-100	-	-	-	-	-	-	1.1E-06	2.0E-07	-	-	-	1 E-07
LAN 001C	7/18/2008	30-100	-	1.9E-06	1.9E-06	2.2E-06	1.6E-06	7.0E-07	9.0E-07	1.0E-07	7E-09	3.7E-06	1 E-07	4 E-08
LAN 002C	7/18/2008	30-100	-	1.5E-06	1.1E-06	2.2E-06	3.0E-07	3.0E-07	1.2E-06	1.0E-07	7E-09	3.6E-06	1 E-07	6 E-08
LAN 003C	7/18/2008	30-100	-	2.0E-06	2.6E-06	2.3E-06	6.0E-07	3.0E-07	1.0E-06	1.0E-07	7E-09	3.7E-06	1 E-07	5 E-08
LAN 004C	7/18/2008	30-100	-	1.5E-06	8.0E-07	1.4E-06	7.0E-07	5.0E-07	1.0E-06	1.0E-07	7E-09	2.3E-06	1 E-07	8 E-08
LAN 004C-DUP	7/18/2008	30-100	-	1.3E-06	1.2E-06	1.4E-06	5.0E-07	4.0E-07	8.0E-07	1.0E-07	7E-09	2.4E-06	1 E-07	8 E-08
LAN 005C	7/18/2008	30-100	-	7.1E-07	6.0E-07	1.4E-06	5.0E-07	4.0E-07	1.5E-06	2.0E-07	7E-09	2.3E-06	1 E-07	8 E-08
LAN 006C	7/18/2008	30-100	-	1.1E-06	7.0E-07	1.4E-06	5.0E-07	3.0E-07	1.4E-06	2.0E-07	7E-09	2.4E-06	1 E-07	8 E-08
LAN 007C	7/18/2008	30-100	-	2.5E-06	1.0E-07	1.4E-06	8.0E-07	6.0E-07	4.0E-07	1.0E-07	7E-09	2.3E-06	1 E-07	8 E-08
LAN 009C	7/18/2008	30-100	-	1.6E-06	5.0E-07	1.4E-06	1.1E-06	6.0E-07	3.9E-06	3.0E-07	7E-09	2.3E-06	1 E-07	8 E-08
LAN 010C	7/18/2008	30-100	-	2.7E-06	1.9E-06	1.2E-06	1.9E-06	8.0E-07	1.5E-06	2.0E-07	7E-09	2.3E-06	1 E-07	1 E-07
LAS 001C	7/19/2008	30-100	-	6.1E-07	9.0E-07	1.1E-06	1.0E-07	3.0E-07	8.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1 E-07
LAS 002C	7/19/2008	30-100	-	6.3E-07	4.0E-07	1.1E-06	4.0E-07	4.0E-07	7.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1 E-07
LAS 003C	7/19/2008	30-100	-	9.3E-07	7.0E-07	1.2E-06	1.0E-06	5.0E-07	8.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1 E-07
LAS 004C	7/19/2008	30-100	-	1.3E-06	1.2E-06	1.1E-06	5.0E-07	3.0E-07	9.0E-07	1.0E-07	7E-09	1.9E-06	1 E-07	1 E-07
LAS 005C	7/19/2008	30-100	-	9.8E-07	1.2E-06	1.1E-06	7.0E-07	5.0E-07	1.1E-06	2.0E-07	7E-09	1.9E-06	1 E-07	1 E-07
LAS 006C	7/19/2008	30-100	-	6.5E-07	-3.0E-07	1.5E-06	3.0E-07	9.0E-08	6.0E-07	1.0E-07	7E-09	2.6E-06	1 E-07	1 E-07
LAS 007C	7/19/2008	30-100	-	7.2E-07	-7.0E-07	1.5E-06	5.0E-07	1.0E-07	7.0E-07	1.0E-07	7E-09	2.6E-06	1 E-07	1 E-07

Notes:
All errors reported are ± 2σ

Table 4-2. Outlier Test for Surface Soil Samples Collected in Surface Mine Area

Potential Outlier Sample ID	Sample Radium-226 Concentration (pCi/g)	N	Mean Radium-226 Concentration (pCi/g)	Standard Deviation (pCi/g)	‡Test Statistic	†Critical Value (upper 1%)	Outlier (Yes/No)
SMA-B27	40.00	25	5.90	11.00	3.10	3.009	Yes
SMA-B30	34.00	24	4.84	8.65	3.37	2.987	Yes
SMA-B29	29.00	23	3.20	6.08	4.24	2.963	Yes
SMA-B26	11.00	22	2.02	2.36	3.81	2.939	Yes
SMA-B28	6.40	21	1.60	1.28	3.75	2.912	Yes

† Critical values obtained from Table 1 of ASTM E178-08

‡ Test Statistic $T_n = (x_n - \bar{x})/s$

Table 4-3. Outlier Test for Surface Soil Samples Collected in Main Permit Area

Potential Outlier Sample ID	Sample Radium-226 Concentration (pCi/g)	N	Mean Radium-226 Concentration (pCi/g)	Standard Deviation (pCi/g)	‡Test Statistic	†Critical Value (upper 1%)	Outlier (Yes/No)
RFA-B21A	5.60	55	1.51	0.77	5.31	3.376	Yes
RFA-B23	3.60	54	1.44	0.54	4.00	3.368	Yes
NEA-R05	2.80	53	1.40	0.45	3.11	3.361	No

† Critical values obtained from Table 1 of ASTM E178-08

‡ Test Statistic $T_n = (x_n - \bar{x})/s$

Table 4-4. Statistical Summary of Radionuclide Concentrations by Depth Interval

Depth Interval (cm)	Statistic	Radium-226 (pCi/g)	Thorium-230 (pCi/g)	Natural Uranium (pCi/g)	Lead-210 (pCi/g)
0-15	Mean	1.4	0.6	1.0	1.2
	Median	1.0	0.6	0.9	1.1
	No.	26	18	18	18
	σ	1.1	0.3	0.5	0.9
	Range	0.7-5.6	0.1-1.2	0.4-2.1	-0.4-3.4
	Distribution	Non-parametric	Normal	Normal	Normal
15-30	Mean	1.3	1.1	1.2	1.1
	Median	1.0	0.5	1.0	1.1
	No.	36	27	28	28
	σ	0.8	2.0	0.8	0.9
	Range	0.7-4.1	0.3-7.9	0.5-3.5	-0.3-4.6
	Distribution	Non-parametric	Non-parametric	Non-parametric	Non-parametric
30-100	Mean	1.3	0.7	1.3	0.9
	Median	1.1	0.6	1.3	0.8
	No.	25	16	17	17
	σ	0.7	0.5	0.6	0.8
	Range	0.4-3.9	0.1-1.9	0.6-2.7	-0.7-2.6
	Distribution	Lognormal[a]	Normal	Lognormal[b]	Normal

Notes:

a. The geometric mean for radium-226 at 30 to 100 cm is 1.1 pCi/g.

b. The geometric mean for natural uranium at 30 to 100 cm is 1.2 pCi/g.

Table 4-5. Quality Control Summary for Soil Samples

		RPD	Replicate Error Ratio		
Sample ID	**Depth (cm)**	**U-nat**	**Pb-210**	**Th-230**	**Ra-226**
MPA-R04+Duplicate	0-15	-	-	-	0.2
NEA-R04+Duplicate	0-15	-	-	-	0.2
RFA-B01A+Duplicate	0-15	3.4	0.0	0.0	0.2
RFA-B01B+Duplicate	15-30	10.5	**1.8**	0.0	0.3
RFA-B01C+Duplicate	30-100	14.3	**1.0**	0.5	0.8
RFA-B08+Duplicate	0-15	-	-	-	0.0
RFA-B28+Duplicate	0-15	-	-	-	0.7
SMA-B01+Duplicate	0-15	22.2	**2.8**	0.4	0.8
SMA-B09+Duplicate	0-15	-	-	-	0.8
SMA-B14+Duplicate	0-15	-	-	-	0.3
SMA-B18+Duplicate	0-15	-	-	-	0.4
SMA-B23+Duplicate	0-15	-	-	-	0.1
LAN-004A+Duplicate	0-15	-4.3	0.5	0.6	**8.5**
LAN-004B+Duplicate	15-30	15.0	**2.5**	0.9	**4.2**
LAN-004C+Duplicate	30-100	14.3	0.4	0.6	**1.4**

Notes:
The radium-226, lead-210, and thorium-230 LLDs were all $1*10^{-7}$ µCi/g. All results are greater than 5 times their respective MDC, with the exception of radium-226 in Sample Location SMA-B18-Dup.
The natural uranium LLDs ranged from $1.7*10^{-8}$ to $2.0*10^{-8}$ µCi/g.
None of the results were below their respective LLDs.
Bolded values are anomalous QC results.

Table 5-1. Predicted Radium-226 Concentrations from Two Linear Regression Models Compared to Actual Data

Linear Regression Model Equation	Soil Data	R^2	Gamma Count Rate (ALL) (cpm)	Predicted Ra-226 soil concentration (pCi/g)
1) [Ra-226] = -0.87 + 0.0002*GCR	All	0.75	Median (12,687)	1.7
			1st Quartile (11,395)	1.4
			3rd Quartile (14,437)	2.0
2) [Ra-226] = -1.04 + 0.000187*GCR	5 outliers removed	0.45	Median (12,687)	1.4
			1st Quartile (11,395)	1.1
			3rd Quartile (14,437)	1.7
Actual Soil Data	All	NA	Median	1.3
			1st Quartile	1.1
			3rd Quartile	1.7
GCR = gamma count rate				

Table 6-1. Baseline Radon Flux Measurements

Location	Date	Flux (pCi/m^{2}s)	Std. Dev. (pCi/m^{2}s)	LLD (pCi/m^{2}s)	Average Flux @ Location (pCi/m^{2}s)
RFA-B01	September 2007	1.68	0.06	0.18	1.57
	April 2008	0.64	0.05	0.15	
	July 2008	2.38	0.06	0.15	
RFA-B02	September 2007	0.89	0.05	0.15	0.86
	April 2008	0.76	0.05	0.16	
	July 2008	0.94	0.05	0.15	
RFA-B13	September 2007	1.77	0.06	0.17	1.53
	April 2008	0.56	0.05	0.16	
	July 2008	2.27	0.06	0.15	
RFA-B15	September 2007	1.22	0.05	0.15	1.35
	April 2008	1.12	0.06	0.16	
	July 2008	1.71	0.05	0.15	
RFA-B17	September 2007	1.25	0.06	0.16	1.05
	April 2008	0.61	0.05	0.16	
	July 2008	1.30	0.05	0.15	
RFA-B21	September 2007	0.97	0.05	0.14	0.71
	April 2008	0.28	0.05	0.16	
	July 2008	0.89	0.05	0.14	
RFA-B30	September 2007	1.73	0.06	0.17	1.49
	April 2008	0.70	0.05	0.16	
	July 2008	2.03	0.05	0.15	
RFA-B36	September 2007	0.68	0.05	0.16	0.60
	April 2008	0.64	0.05	0.16	
	July 2008	0.48	0.06	0.15	
RFA-B37	September 2007	0.80	0.05	0.14	1.13
	April 2008	1.33	0.06	0.16	
	July 2008	1.27	0.05	0.14	

Table 7-1. Baseline Radionuclide Concentrations in Vegetation

Location	Date Collected		8/14/2007	4/20/08	7/15/08	Average (µCi/kg)
AMS-01	U-nat (µCi/kg)	Concentration	1.4E-05	2.8E-02D	9.4E-06	1.4E-05
		Error ± 2σ	-	-	-	
		LLD	1.7E-06	2.4E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	5.5E-05	3.3E-05	8.1E-05	5.6E-05
		Error ± 2σ	3.2E-05	5.5E-06	1.2E-05	
		LLD	1.7E-06	3.7E-06	7.4E-06	
	Th-230 (µCi/kg)	Concentration	<1.7E-06	1.2E-05	1.2E-05	8.6E-06
		Error ± 2σ	<1.7E-06	5.2E-06	8.4E-06	
		LLD	1.7E-06	2.0E-07	8.4E-07	
	Pb-210 (µCi/kg)	Concentration	1.8E-03	2.9E-03	3.3E-04	1.7E-03
		Error ± 2σ	5.4E-04	1.1E-04	1.3E-04	
		LLD	8.6E-06	1.0E-06	2.1E-04	
	Po-210 (µCi/kg)	Concentration	1.3E-04	4.7E-04	1.7E-05	2.1E-04
		Error ± 2σ	9.8E-05	7.2E-05	1.5E-05	
		LLD	8.6E-06	1.0E-06	1.0E-06	
AMS-02	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
	U-nat (µCi/kg)	Concentration	1.0E-05	2.7E-02D	3.2E-06	6.6E-06
		Error ± 2σ	-	-	-	
		LLD	5.5E-07	2.0E-07	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	2.2E-05	3.0E-05	9.3E-06	2.0E-05
		Error ± 2σ	1.1E-05	4.5E-06	3.6E-06	
		LLD	5.5E-07	2.8E-06	4.0E-06	
	Th-230 (µCi/kg)	Concentration	4.7E-06	1.4E-05	-9.5E-07U	5.9E-06
		Error ± 2σ	6.0E-06	4.9E-06	5.0E-06	
		LLD	5.5E-07	2.0E-07	4.7E-07	
	Pb-210 (µCi/kg)	Concentration	3.3E-04	1.3E-03	1.5E-04	5.9E-04
		Error ± 2σ	1.5E-04	6.9E-05	7.3E-05	
		LLD	2.7E-06	1.0E-06	1.2E-04	
	Po-210 (µCi/kg)	Concentration	1.8E-05	2.0E-04	9.1E-06U	7.6E-05
		Error ± 2σ	2.0E-05	4.2E-05	8.5E-06	
		LLD	2.7E-06	1.0E-06	1.0E-06	

Table 7-1. Baseline Radionuclide Concentrations in Vegetation (Continued)

Location	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
AMS-03	U-nat (µCi/kg)	Concentration	9.8E-06	1.5E-01D	7.7E-06	9.8E-06
		Error ± 2σ	-	-	-	
		LLD	6.4E-07	2.4E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	7.4E-05	1.1E-04	7.5E-06	9.2E-05
		Error ± 2σ	2.2E-05	9.7E-06	4.9E-06	
		LLD	6.4E-07	3.7E-06	6.6E-06	
	Th-230 (µCi/kg)	Concentration	2.6E-06	4.1E-05	1.0E-05	2.2E-05
		Error ± 2σ	4.4E-06	1.1E-05	6.6E-06	
		LLD	6.4E-07	2.0E-07	7.7E-07	
	Pb-210 (µCi/kg)	Concentration	9.1E-04	1.4E-03	3.3E-04	8.8E-04
		Error ± 2σ	2.2E-04	8.2E-05	1.2E-04	
		LLD	3.2E-06	1.0E-06	1.9E-04	
	Po-210 (µCi/kg)	Concentration	7.8E-05	2.3E-04	9.6E-06U	1.5E-04
		Error ± 2σ	4.4E-05	4.4E-05	1.1E-05	
		LLD	3.2E-06	1.0E-06	1.0E-06	
AMS-04	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
	U-nat (µCi/kg)	Concentration	9.3E-06	2.1E-02D	8.4E-06	9.3E-06
		Error ± 2σ	-	-	-	
		LLD	8.1E-07	1.9E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	2.3E-05	3.1E-05	9.3E-06	2.7E-05
		Error ± 2σ	1.4E-05	4.6E-06	5.2E-06	
		LLD	8.0E-07	2.8E-06	6.7E-06	
	Th-230 (µCi/kg)	Concentration	3.6E-06	8.3E-06	-2.7E-06U	6.0E-06
		Error ± 2σ	5.6E-06	4.2E-06	4.2E-06	
		LLD	8.0E-07	2.0E-07	7.7E-07	
	Pb-210 (µCi/kg)	Concentration	1.5E-03	1.2E-03	2.1E-04	1.4E-03
		Error ± 2σ	3.0E-04	6.6E-05	1.2E-04	
		LLD	4.0E-06	1.0E-06	1.9E-04	
	Po-210 (µCi/kg)	Concentration	9.8E-05	1.7E-04	9.0E-06U	1.3E-04
		Error ± 2σ	6.4E-05	3.9E-05	9.6E-06	
		LLD	4.0E-06	1.0E-06	1.0E-06	

Table 7-1. Baseline Radionuclide Concentrations in Vegetation (Continued)

Location	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
AMS-05	U-nat (µCi/kg)	Concentration	3.7E-05	2.3E-01D	1.4E-05	3.7E-05
		Error ± 2σ	-	-		
		LLD	1.3E-06	1.3E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	2.4E-05	7.9E-05	5.9E-06U	5.2E-05
		Error ± 2σ	1.8E-05	5.7E-06	5.3E-06	
		LLD	1.3E-06	1.8E-06	7.7E-06	
	Th-230 (µCi/kg)	Concentration	1.5E-05	4.8E-05	-8.8E-07U	3.2E-05
		Error ± 2σ	1.7E-05	8.1E-06	5.7E-06	
		LLD	1.3E-06	2.0E-07	8.8E-07	
	Pb-210 (µCi/kg)	Concentration	1.7E-03	3.3E-04	3.4E-04	1.0E-03
		Error ± 2σ	4.2E-04	3.0E-05	1.4E-04	
		LLD	6.5E-06	1.0E-06	2.2E-04	
	Po-210 (µCi/kg)	Concentration	6.6E-05	1.6E-04	2.1E-05	1.1E-04
		Error ± 2σ	6.0E-05	3.1E-05	1.6E-05	
		LLD	6.5E-06	1.0E-06	1.0E-06	
AMS-06	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
	U-nat (µCi/kg)	Concentration	3.8E-05	1.3E-01D	2.2E-05	3.8E-05
		Error ± 2σ	-	-		
		LLD	8.3E-07	3.2E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	3.2E-05	9.2E-05	1.8E-05	6.2E-05
		Error ± 2σ	1.6E-05	9.9E-06	5.0E-06	
		LLD	8.2E-07	4.6E-06	5.0E-06	
	Th-230 (µCi/kg)	Concentration	1.9E-05	3.9E-05	2.1E-05	2.9E-05
		Error ± 2σ	1.3E-05	1.1E-05	7.4E-06	
		LLD	8.2E-07	2.0E-07	5.7E-07	
	Pb-210 (µCi/kg)	Concentration	1.0E-03	1.8E-03	1.4E-04U	1.4E-03
		Error ± 2σ	2.6E-04	1.1E-04	8.7E-05	
		LLD	4.1E-06	1.0E-06	1.4E-04	
	Po-210 (µCi/kg)	Concentration	6.0E-05	4.0E-04	5.7E-06U	2.3E-04
		Error ± 2σ	4.4E-05	7.7E-05	5.7E-06	
		LLD	4.1E-06	1.0E-06	1.0E-06	

Table 7-1. Baseline Radionuclide Concentrations in Vegetation (Concluded)

Location	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
AMS-07	U-nat (µCi/kg)	Concentration	1.8E-05	1.4E-01 D	2.7E-05	1.8E-05
		Error ± 2σ	-	-		
		LLD	9.7E-07	21E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	2.7E-05	7.6E-05	2.4E-05	5.2E-05
		Error ± 2σ	1.6E-05	7.2E-06	7.5E-06	
		LLD	9.7E-07	3.0E-06	7.7E-06	
	Th-230 (µCi/kg)	Concentration	1.6E-05	4.0E-05	2.0E-05	2.8E-05
		Error ± 2σ	1.8E-05	1.2E-05	8.6E-06	
		LLD	9.7E-07	2.0E-07	8.6E-07	
	Pb-210 (µCi/kg)	Concentration	2.1E-03	6.2E-04	-3.2E-05U	1.4E-03
		Error ± 2σ	3.6E-04	5.3E-05	1.3E-04	
		LLD	4.8E-06	1.0E-06	2.1E-04	
	Po-210 (µCi/kg)	Concentration	1.5E-04	2.3E-04	2.0E-05	1.9E-04
		Error ± 2σ	8.2E-05	4.7E-05	1.3E-05	
		LLD	4.8E-06	1.0E-06	1.0E-06	
AMS-BKG	Date Collected		8/14/2007	4/20/08	7/14/08	Average (µCi/kg)
	U-nat (µCi/kg)	Concentration	4.0E-05	9.0E-02D	1.0E-05	2.5E-05
		Error ± 2σ	-	-	-	
		LLD	9.7E-07	3.8E-06	2.0E-07	
	Ra-226 (µCi/kg)	Concentration	4.1E-05	8.3E-05	1.3E-05	6.2E-05
		Error ± 2σ	2.0E-05	1.1E-05	4.6E-06	
		LLD	9.7E-07	6.4E-06	5.1E-06	
	Th-230 (µCi/kg)	Concentration	1.0E-05	3.5E-05	7.3E-06	2.3E-05
		Error ± 2σ	1.3E-05	1.2E-05	4.2E-06	
		LLD	9.7E-07	2.0E-07	5.6E-07	
	Pb-210 (µCi/kg)	Concentration	6.9E-04	1.4E-03	1.3E-04U	1.0E-03
		Error ± 2σ	2.8E-04	1.0E-04	8.6E-05	
		LLD	4.8E-06	1.0E-06		
	Po-210 (µCi/kg)	Concentration	2.5E-05	2.2E-04	9.3E-06	1.2E-04
		Error ± 2σ	3.2E-05	5.1E-05	8.8E-06	
		LLD	4.8E-06	1.0E-06	1.0E-06	

Notes:
D = Lower limit of detection increased due to sample matrix interference. Average concentrations s do not include "D"-qualified results.

Table 8-1. Baseline Radionuclide Concentrations in Air

Loc.	Pd.	Concentration (µCi/ml)							% of Effluent Concentration				Lower Limit of Detection (µCi/ml)			
		U-nat	Th-230	Th-230 2σ Error	Ra-226	Ra-226 2σ Error	Pb-210	Pb-210 2σ Error	U-nat	Th-230	Ra-226	Pb-210	U-nat	Th-230	Ra-226	Pb-210
AMS-01	1	7.1E-15	1.7E-17	2.8E-17	5.3E-17	4.3E-17	2.4E-14	6.2E-16	0.24%	0.00%	0.01%	4.00%	7.1E-15	4.2E-18	4.8E-17	2.1E-17
	2	0.0E+00	1.6E-18	1.1E-17	7.2E-18	9.1E-18	4.1E-14	6.9E-16	0.00%	0.00%	0.00%	6.78%	1.6E-16	1.6E-18	1.6E-18	7.9E-18
	3	-1.3E-17	3.4E-18	1.0E-17	1.8E-17	1.7E-17	2.1E-14	3.5E-16	0.00%	0.00%	0.00%	3.54%	1.7E-18	1.7E-18	1.2E-17	2.1E-16
	4	2.4E-17	1.3E-17	9.8E-18	1.4E-17	9.7E-18	2.1E-14	4.9E-16	0.00%	0.00%	0.00%	3.51%	1.5E-18	1.5E-18	8.3E-18	4.2E-16
	5	-1.7E-17	6.5E-18	2.5E-17	-3.1E-17	2.7E-17	1.0E-14	6.5E-16	0.00%	0.00%	0.00%	1.74%	4.3E-18	4.3E-18	5.6E-17	6.7E-16
AMS-02	1	7.0E-15	4.1E-18	2.8E-17	-8.3E-18	2.9E-17	1.1E-14	4.5E-16	0.23%	0.00%	0.00%	1.85%	7.0E-15	4.1E-18	3.7E-17	2.1E-17
	2	0.0E+00	1.6E-17	1.1E-17	-2.3E-18	7.0E-18	2.0E-14	4.7E-16	0.00%	0.00%	0.00%	3.26%	1.5E-16	1.5E-18	1.5E-18	7.6E-18
	3	-2.0E-17	4.7E-18	1.1E-17	-8.6E-18	1.3E-17	8.9E-15	2.5E-16	0.00%	0.00%	0.00%	1.49%	1.6E-18	1.6E-18	1.1E-17	1.9E-16
	4	4.2E-18	0.0E+00	7.4E-18	-4.2E-18	7.4E-18	8.2E-15	4.2E-16	0.00%	0.00%	0.00%	1.37%	1.4E-18	1.4E-18	7.6E-18	3.9E-16
	5	-1.3E-17	0.0E+00	8.0E-18	-4.9E-17	2.3E-17	1.5E-14	6.5E-16	0.00%	0.00%	0.00%	2.44%	4.0E-18	4.0E-18	5.3E-17	6.2E-16
AMS-03	1	5.0E-15	-1.5E-18	2.0E-17	-5.9E-18	2.1E-17	1.2E-14	3.7E-16	0.17%	0.00%	0.00%	1.97%	5.0E-15	3.0E-18	2.7E-17	1.5E-17
	2	0.0E+00	9.3E-18	1.0E-17	5.4E-18	8.9E-18	1.3E-14	3.9E-16	0.00%	0.00%	0.00%	2.16%	1.6E-16	1.6E-18	1.6E-18	7.8E-18
	3	-3.0E-17	9.3E-18	1.2E-17	-1.4E-17	1.3E-17	9.2E-15	2.5E-16	0.00%	0.00%	0.00%	1.53%	1.5E-18	1.5E-18	1.2E-17	1.9E-16
	4	1.8E-17	8.9E-18	9.0E-18	9.6E-18	9.5E-18	8.0E-15	4.4E-16	0.00%	0.00%	0.00%	1.34%	1.5E-18	1.5E-18	8.9E-18	4.1E-16
	5	-1.6E-17	1.9E-17	9.7E-18	-3.2E-18	3.1E-17	1.2E-14	6.5E-16	0.00%	0.00%	0.00%	1.99%	4.2E-18	4.2E-18	5.0E-17	6.6E-16
AMS-04	1	5.0E-15	5.9E-18	2.5E-17	4.6E-17	2.9E-17	1.1E-14	3.7E-16	0.17%	0.00%	0.01%	1.89%	5.0E-15	3.0E-18	3.0E-17	1.5E-17
	2	0.0E+00	9.4E-18	1.1E-17	2.3E-18	8.3E-18	2.2E-14	5.1E-16	0.00%	0.00%	0.00%	3.66%	1.6E-16	1.6E-18	1.6E-18	7.8E-18
	3	-2.6E-17	2.5E-18	1.1E-17	-2.8E-17	1.2E-17	8.5E-15	2.6E-16	0.00%	0.00%	0.00%	1.42%	1.7E-18	1.7E-18	9.9E-18	2.0E-16
	4	1.9E-17	6.6E-18	9.0E-18	1.2E-17	9.5E-18	1.0E-14	4.6E-16	0.00%	0.00%	0.00%	1.74%	1.5E-18	1.5E-18	8.1E-18	4.1E-16
	5	-1.0E-18	2.7E-17	9.7E-18	-5.2E-18	3.3E-17	1.3E-14	6.7E-16	0.00%	0.00%	0.00%	2.23%	4.2E-18	4.2E-18	5.5E-17	6.6E-16
AMS-05	1	5.9E-15	2.6E-17	2.5E-17	-4.5E-17	2.4E-17	1.1E-14	5.3E-16	0.20%	0.00%	0.00%	1.82%	5.9E-15	3.5E-18	4.5E-17	1.7E-17
	2	0.0E+00	2.0E-17	1.4E-17	4.7E-17	1.3E-17	2.5E-14	2.6E-16	0.00%	0.00%	0.01%	4.09%	1.6E-16	1.5E-18	1.5E-18	7.7E-18
	3	1.0E-18	4.7E-18	1.1E-17	1.1E-17	1.5E-17	1.0E-14	4.4E-16	0.00%	0.00%	0.00%	1.66%	1.6E-18	1.6E-18	1.1E-17	1.9E-16
	4	2.5E-17	1.3E-17	9.2E-18	1.3E-17	9.0E-18	1.0E-14	6.3E-16	0.00%	0.00%	0.00%	1.74%	1.4E-18	1.4E-18	7.7E-18	3.9E-16
	5	2.4E-17	5.6E-17	9.5E-18	2.2E-17	3.4E-17	1.1E-14	0.0E+00	0.00%	0.00%	0.00%	1.85%	4.1E-18	4.1E-18	4.9E-17	6.4E-16

Table 8.1. Radionuclide Concentrations in Air (concluded)

Loc.	Pd.	Concentration (µCi/ml)							% of Effluent Concentration				Lower Limit of Detection (µCi/ml)			
		U-nat	Th-230	Th-230 2σ Error	Ra-226	Ra-226 2σ Error	Pb-210	Pb-210 2σ Error	U-nat	Th-230	Ra-226	Pb-210	U-nat	Th-230	Ra-226	Pb-210
AMS-06	1	5.0E-15	1.5E-18	2.0E-17	-3.9E-17	1.8E-17	1.4E-14	4.0E-16	0.17%	0.00%	0.00%	2.28%	5.0E-15	3.0E-18	3.1E-17	1.5E-17
	2	0.0E+00	1.4E-17	1.2E-17	2.3E-17	1.0E-17	2.1E-14	4.8E-16	0.00%	0.00%	0.00%	3.56%	1.5E-16	3.0E-18	1.5E-18	7.3E-18
	3	-1.4E-17	9.4E-18	1.2E-17	0.0E+00	1.4E-17	6.0E-15	2.2E-16	0.00%	0.00%	0.00%	0.99%	1.6E-18	3.0E-18	1.1E-17	1.9E-16
	4	1.5E-17	4.9E-18	9.1E-18	-4.9E-18	7.4E-18	9.5E-15	4.3E-16	0.00%	0.00%	0.00%	1.58%	1.4E-18	3.0E-18	8.3E-18	3.9E-16
	5	-2.6E-18	2.0E-17	9.1E-18	6.9E-18	3.3E-17	1.9E-14	6.9E-16	0.00%	0.00%	0.00%	3.25%	4.0E-18	3.0E-18	4.9E-17	6.2E-16
AMS-07	1	1.5E-14	2.0E-17	2.1E-17	-4.3E-18	2.5E-17	1.8E-14	4.4E-16	0.51%	0.00%	0.00%	3.03%	4.8E-15	2.8E-18	3.4E-17	1.4E-17
	2	0.0E+00	1.3E-17	1.2E-17	2.9E-17	1.0E-17	2.8E-14	5.3E-16	0.00%	0.00%	0.00%	4.62%	1.4E-16	1.4E-18	1.4E-18	6.9E-18
	3	-1.1E-17	6.3E-18	9.0E-18	-1.3E-17	1.1E-17	7.2E-15	2.2E-16	0.00%	0.00%	0.00%	1.19%	1.4E-18	1.4E-18	9.1E-18	1.7E-16
	4	2.0E-17	7.9E-18	8.1E-18	-6.6E-19	7.5E-18	1.3E-14	4.4E-16	0.00%	0.00%	0.00%	2.13%	1.3E-18	1.3E-18	7.3E-18	3.7E-16
	5	-9.2E-19	1.7E-17	8.5E-18	1.4E-17	3.0E-17	1.3E-14	5.9E-16	0.00%	0.00%	0.00%	2.10%	3.7E-18	3.7E-18	4.6E-17	5.8E-16
AMS-BKG	1	5.7E-15	3.0E-17	2.6E-17	5.0E-18	3.1E-17	1.4E-14	4.2E-16	0.19%	0.00%	0.00%	2.26%	5.7E-15	3.3E-18	4.0E-17	1.7E-17
	2	0.0E+00	-7.8E-19	9.4E-18	1.2E-17	9.5E-18	2.0E-14	4.8E-16	0.00%	0.00%	0.00%	3.29%	1.6E-16	1.6E-18	1.6E-18	7.8E-18
	3	1.6E-18	2.0E-17	1.3E-17	-5.6E-18	1.4E-17	8.3E-15	2.5E-16	0.00%	0.00%	0.00%	1.38%	1.6E-18	1.6E-18	1.2E-17	2.0E-16
	4	1.5E-17	1.4E-18	8.6E-18	2.1E-18	8.0E-18	1.3E-14	4.6E-16	0.00%	0.00%	0.00%	2.13%	1.4E-18	1.4E-18	8.5E-18	4.0E-16
	5	-8.1E-18	2.4E-17	9.3E-18	-1.7E-17	2.4E-17	1.2E-14	6.3E-16	0.00%	0.00%	0.00%	2.00%	4.0E-18	4.0E-18	4.0E-17	6.3E-16

Notes:
The laboratory reported no blank assay data for Period 5. Blank assays in the sample concentration calculation were assumed to be 50 percent of the values for blanks reported for the previous period. The assumption is based on the relative, approximate run-time of the air samplers in both periods. No blank corrections were performed on uranium results for the first monitoring period since sample results were reported as non-detects.

Table 8-2. Baseline Radon Ambient Air Monitoring Measurements

Location	Starting Date	Ending Date	Radon-222 Conc. (µCi/ml)	Error ± (µCi/ml)	LLD (µCi/ml)	Percent Effluent Conc.	Average Rn-222 Conc. (µCi/ml)	Standard Deviation of Average (µCi/ml)	Minimum Rn-222 Conc. (µCi/ml)	Maximum Rn-222 Conc. (µCi/ml)
AMS-1	8/14/07	9/27/07	1.00E-09	-	6.82E-10	1000	7.23E-10	2.09E-10	4.92E-10	1.00E-09
	9/27/07	2/1/08	7.00E-10	-	2.00E-10	700				
	2/1/08	5/17/08	7.00E-10	7.1E-11	2.83E-10	700				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
AMS-1[a]	8/14/07	9/27/07	1.00E-09	-	6.82E-10	1000	5.73E-10	2.88E-10	4.00E-10	1.00E-09
	9/27/07	2/1/08	4.00E-10	-	2.00E-10	400				
	2/1/08	5/17/08	4.00E-10	5.2E-11	2.83E-10	400				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
AMS-2	8/15/07	9/27/07	2.20E-09	-	6.98E-10	2200	1.70E-09	7.62E-10	4.92E-10	2.20E-09
	9/27/07	2/1/08	1.20E-09	-	2.00E-10	1200				
	2/1/08	5/17/08	7.00E-10	7.0E-11	2.83E-10	700				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
AMS-3	8/14/07[b]	9/27/07[b]	1.20E-09	-	6.82E-10	1200	1.20E-09	9.30E-10	4.92E-10	2.70E-09
	9/27/07	2/4/08	1.20E-09	-	2.00E-10	1200				
	2/4/08	5/17/08	2.70E-09	7.9E-11	2.91E-10	2700				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
AMS-4	8/14/07	9/24/07	1.20E-09	-	7.32E-10	1200	1.20E-09	9.98E-10	5.75E-10	2.90E-09
	9/27/07	2/4/08	1.20E-09	-	2.00E-10	1200				
	2/4/08	5/17/08	2.90E-09	7.8E-11	2.91E-10	2900				
	5/17/08	7/17/08	5.75E-10	-	4.92E-10	575				
AMS-5	8/15/07	9/27/07	2.20E-09	-	6.98E-10	2200	1.60E-09	7.16E-10	4.92E-10	2.20E-09
	9/27/07	2/1/08	1.00E-09	-	2.00E-10	1000				
	2/1/08	5/17/08	1.20E-09	7.9E-11	2.83E-10	1200				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				

Table 8-2. Baseline Radon Ambient Air Monitoring Measurements (continued)

Location	Starting Date	Ending Date	Radon-222 Conc. (µCi/ml)	Error ± (µCi/ml)	LLD (µCi/ml)	Percent Effluent Conc.	Average Rn-222 Conc. (µCi/ml)	Standard Deviation of Average (µCi/ml)	Minimum Rn-222 Conc. (µCi/ml)	Maximum Rn-222 Conc. (µCi/ml)
AMS-6	8/17/07	9/27/07	2.60E-09	-	7.32E-10	2600	1.80E-09	8.40E-10	6.89E-10	2.60E-09
	9/27/07	2/1/08	1.00E-09	-	2.00E-10	1000				
	2/11/08	5/17/08	1.30E-09	7.6E-11	2.83E-10	1300				
	5/17/08	7/17/08	6.89E-10	-	4.92E-10	689				
AMS-7	8/14/07	9/27/07	1.10E-09	-	6.82E-10	1100	1.30E-09	4.15E-10	4.92E-10	1.50E-09
	9/27/07	2/1/08	1.50E-09	-	2.00E-10	1500				
	2/1/08	5/17/08	1.00E-09	7.2E-11	2.83E-10	1000				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
AMS-BKG	8/14/07	9/24/07	2.00E-09	-	7.32E-10	2000	1.80E-09	6.58E-10	4.95E-10	2.00E-09
	9/27/07	2/1/08	1.60E-09	-	2.00E-10	1600				
	2/1/08	5/17/08	1.70E-09	8.1E-11	2.83E-10	1700				
	5/17/08	7/17/08	4.95E-10	-	4.92E-10	495				
AMS-BKG[a]	8/14/07	9/27/07	2.70E-09	-	6.82E-10	2700	2.10E-09	9.03E-10	4.92E-10	2.70E-09
	9/27/07	2/1/08	1.50E-09	-	2.00E-10	1500				
	2/1/08	5/17/08	1.50E-09	8.1E-11	2.83E-10	1500				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
Rn 01	8/14/07	9/23/07	2.00E-09	-	7.50E-10	2000	1.65E-09	8.35E-10	5.00E-10	2.40E-09
	9/23/07	2/11/08	1.30E-09	-	2.00E-10	1300				
	2/11/08	5/17/08	2.40E-09	8.5E-11	3.13E-10	2400				
	5/17/08	7/17/08	5.00E-10	-	4.76E-10	500				
Rn 02	8/14/07	9/23/07	9.80E-09	-	7.50E-10	9800	3.86E-09	5.15E-09	5.75E-10	9.80E-09
	9/23/07	2/11/08	1.20E-09	-	2.00E-10	1200				
	no data	-	-	-	-	-				
	5/17/08	7/17/08	5.75E-10	1.5E-10	4.92E-10	575				

Table 8-2. Baseline Radon Ambient Air Monitoring Measurements (concluded)

Location	Starting Date	Ending Date	Radon-222 Conc. (µCi/ml)	Error ± (µCi/ml)	LLD (µCi/ml)	Percent Effluent Conc.	Average Rn-222 Conc. (µCi/ml)	Standard Deviation of Average (µCi/ml)	Minimum Rn-222 Conc. (µCi/ml)	Maximum Rn-222 Conc. (µCi/ml)
Rn 03	8/14/07	9/23/07	1.20E-09	-	7.50E-10	1200	1.05E-09	9.63E-10	4.92E-10	2.70E-09
	9/23/07	2/11/08	9.00E-10	-	2.00E-10	900				
	2/11/08	5/17/08	2.70E-09	8.6E-11	3.13E-10	2700				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
Rn 04	8/14/07	9/23/07	2.00E-09	-	7.50E-10	2000	1.70E-09	6.34E-10	5.00E-10	2.00E-09
	9/23/07	2/1/08	1.40E-09	-	2.00E-10	1400				
	2/11/08	5/17/08	1.00E-09	7.7E-11	2.83E-10	1000				
	5/17/08	7/17/08	5.00E-10	-	4.92E-10	500				
Rn 05	8/14/07	9/23/07	1.50E-09	-	7.50E-10	1500	1.30E-09	7.82E-10	8.18E-10	2.60E-09
	9/23/07	2/12/08	1.10E-09	-	2.00E-10	1100				
	2/11/08	5/17/08	2.60E-09	8.6E-11	3.16E-10	2600				
	5/17/08	7/17/08	8.18E-10	-	4.92E-10	818				
Rn 06	8/19/07	9/23/07	3.30E-09	-	8.57E-10	3300	2.30E-09	1.35E-09	4.92E-10	3.30E-09
	9/23/07	2/11/08	1.30E-09	-	2.00E-10	1300				
	2/11/08	5/17/08	3.00E-09	8.5E-11	3.13E-10	3000				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				
Rn 07	8/15/07	9/23/07	3.00E-09	-	7.69E-10	3000	2.40E-09	1.18E-09	7.21E-10	3.30E-09
	9/23/07	2/12/08	1.80E-09	-	2.00E-10	1800				
	2/12/08	5/17/08	3.30E-09	8.3E-11	3.16E-10	3300				
	5/17/08	7/17/08	7.21E-10	-	4.92E-10	721				
Rn 08	8/14/07	9/23/07	1.50E-09	-	7.50E-10	1500	1.40E-09	4.39E-10	4.92E-10	1.50E-09
	9/23/07	2/1/08	1.30E-09	-	2.00E-10	1300				
	9/23/07	2/1/08	1.00E-09	7.2E-11	2.83E-10	1000				
	5/17/08	7/17/08	4.92E-10	-	4.92E-10	492				

Notes:
a. Duplicate track etch detector
b. Seal potentially compromised

Table 9-1. Ambient Gamma Dose Rates using TLDs

Location	Starting Date	End Date	Dose (mrem)	Adjusted Dose Rate (mrem/day)[b]	Projected Annual Dose (mrem)
AMS-01	8/15/07	2/4/08	-	NC	NC
	2/4/08	5/17/08	37.2[a]	0.260	
	5/17/08	7/17/08	57.7[a]	0.412	
AMS-02	8/16/07	2/4/08	-	NC	NC
	2/4/08	5/17/08	-	NC	
	5/17/08	7/17/08	54.0	0.386	
AMS-03	8/15/07	2/4/08	-	NC	NC
	2/4/08	5/17/08	38.6	0.270	
	5/17/08	7/17/08	-	NC	
AMS-04	8/15/07	2/4/08	62.4	0.297	112
	2/4/08	5/17/08	36.1	0.252	
	5/17/08	7/17/08	54.3	0.388	
AMS-05	8/15/07	2/4/08	50.6	0.241	91
	2/4/08	5/17/08	36.7	0.257	
	5/17/08	7/17/08	36.4	0.260	
AMS-06	8/15/07	2/4/08	-	NC	NC
	2/4/08	5/17/08	36.9	0.258	
	5/17/08	7/17/08	51.1	0.365	
AMS-07	8/15/07	2/4/08	73.7	0.351	109
	2/4/08	5/17/08	35.5	0.248	
	5/17/08	7/17/08	36.1	0.258	
AMS-BKG	8/15/07	2/4/08	68.8[a]	0.328	123
	2/4/08	5/17/08	40.5[a]	0.283	
	5/17/08	7/17/08	58.5[a]	0.418	

Notes:
a. Result is average of measurement plus duplicate.
b. Dose rate adjusted by dividing by the reported dose by the time from vendor shipment of dosimeters to site and the time dosimeters were processed.
NC = not calculated due to missing data.

Table 10-1. Baseline Radionuclide Concentrations in Local Food

Sample ID	Radionuclide	Parameter	Result
DBAT-01 (Meat sample from locally grazed cow, June 2008)	**U-nat (µCi/kg)**	**Concentration**	<7.0E-06
		Error ± 2σ	-
		LLD	7.0E-06
	Ra-226 (µCi/kg)	Concentration	3.0E-06
		Error ± 2σ	2.0E-06
		LLD	3.0E-06
	Th-230 (µCi/kg)	Concentration	0.0
		Error ± 2σ	2.0E-05
		LLD	8.0E-06
	Pb-210 (µCi/kg)	Concentration	-7.0E-06
		Error ± 2σ	4.0E-05
		LLD	7.0E-06
	Po-210 (µCi/kg)	Concentration	8.0E-06
		Error ± 2σ	1.0E-04
		LLD	8.0E-06
DBAT-02 (Meat sample from locally grazed cow, June 2008)	**U-nat (µCi/kg)**	Concentration	<7.0E-06
		Error ± 2σ	-
		LLD	7.0E-06
	Ra-226 (µCi/kg)	Concentration	6.0E-05
		Error ± 2σ	3.0E-05
		LLD	4.0E-05
	Th-230 (µCi/kg)	Concentration	0.0
		Error ± 2σ	1.4E-03
		LLD	1.0E-04
	Pb-210 (µCi/kg)	Concentration	2.0E-04
		Error ± 2σ	7.0E-04
		LLD	1.2E-03
	Po-210 (µCi/kg)	Concentration	0.0
		Error ± 2σ	1.2E-03
		LLD	1.0E-04
DBAT-03 (Liver sample from locally grazed cow, June 2008)	**U-nat (µCi/kg)**	Concentration	<7.0E-06
		Error ± 2σ	-
		LLD	7.0E-06
	Ra-226 (µCi/kg)	Concentration	3.0E-06
		Error ± 2σ	1.0E-06
		LLD	2.0E-06
	Th-230 (µCi/kg)	Concentration	0.0
		Error ± 2σ	1.0E-04
		LLD	6.0E-06
	Pb-210 (µCi/kg)	Concentration	-7.0E-06
		Error ± 2σ	4.0E-05
		LLD	6.0E-05
	Po-210 (µCi/kg)	Concentration	2.0E-05
		Error ± 2σ	2.0E-04
		LLD	6.0E-06

Table 10-1. Baseline Radionuclide Concentrations in Local Food (concluded)

Sample ID	Radionuclide	Parameter	Result
Pork (April 2011)	**U-nat (µCi/kg)**	**Concentration**	8.1E-06
		Error ± 2σ	-
		LLD	2.0E-07
	Ra-226 (µCi/kg)	Concentration	7.9E-07
		Error ± 2σ	1.6E-07
		LLD	1.4E-06
	Th-230 (µCi/kg)	Concentration	-1.7E-05
		Error ± 2σ	4.4E-06
		LLD	7.2E-06
	Pb-210 (µCi/kg)	Concentration	-3.4E-07
		Error ± 2σ	1.0E-06
		LLD	1.7E-06
	Po-210 (µCi/kg)	Concentration	-
		Error ± 2σ	-
		LLD	-
Beef (April 2011)	**U-nat (µCi/kg)**	Concentration	2.3E-06
		Error ± 2σ	-
		LLD	2.0E-07
	Ra-226 (µCi/kg)	Concentration	6.0E-07
		Error ± 2σ	1.5E-07
		LLD	1.4E-07
	Th-230 (µCi/kg)	Concentration	1.8E-06
		Error ± 2σ	2.6E-06
		LLD	4.9E-06
	Pb-210 (µCi/kg)	Concentration	1.1E-06
		Error ± 2σ	6.3E-07
		LLD	4.4E-07
	Po-210 (µCi/kg)	Concentration	-
		Error ± 2σ	-
		LLD	-

Note: U-nat was analyzed using ICP-MS; therefore, error estimate is not available.

Table 10-2. Dose Conversion Factors Used in and Results for Radionuclide Concentration in Food Items Evaluation

Radionuclide	DCF (mrem/μCi)	Target Organ	Concentration (μCi/kg)
Natural Uranium*	283	Effective	1.3×10^{-3}
Thorium-230	548	Effective	6.8×10^{-4}
Radium-226	1,325	Effective	2.8×10^{-4}
Lead-210	5,365	Effective	6.9×10^{-5}
Polonium-210	1,902	Effective	1.9×10^{-4}

* DCF for Uranium-234 was used since it is the most restrictive of the three uranium isotopes in natural uranium

Figures

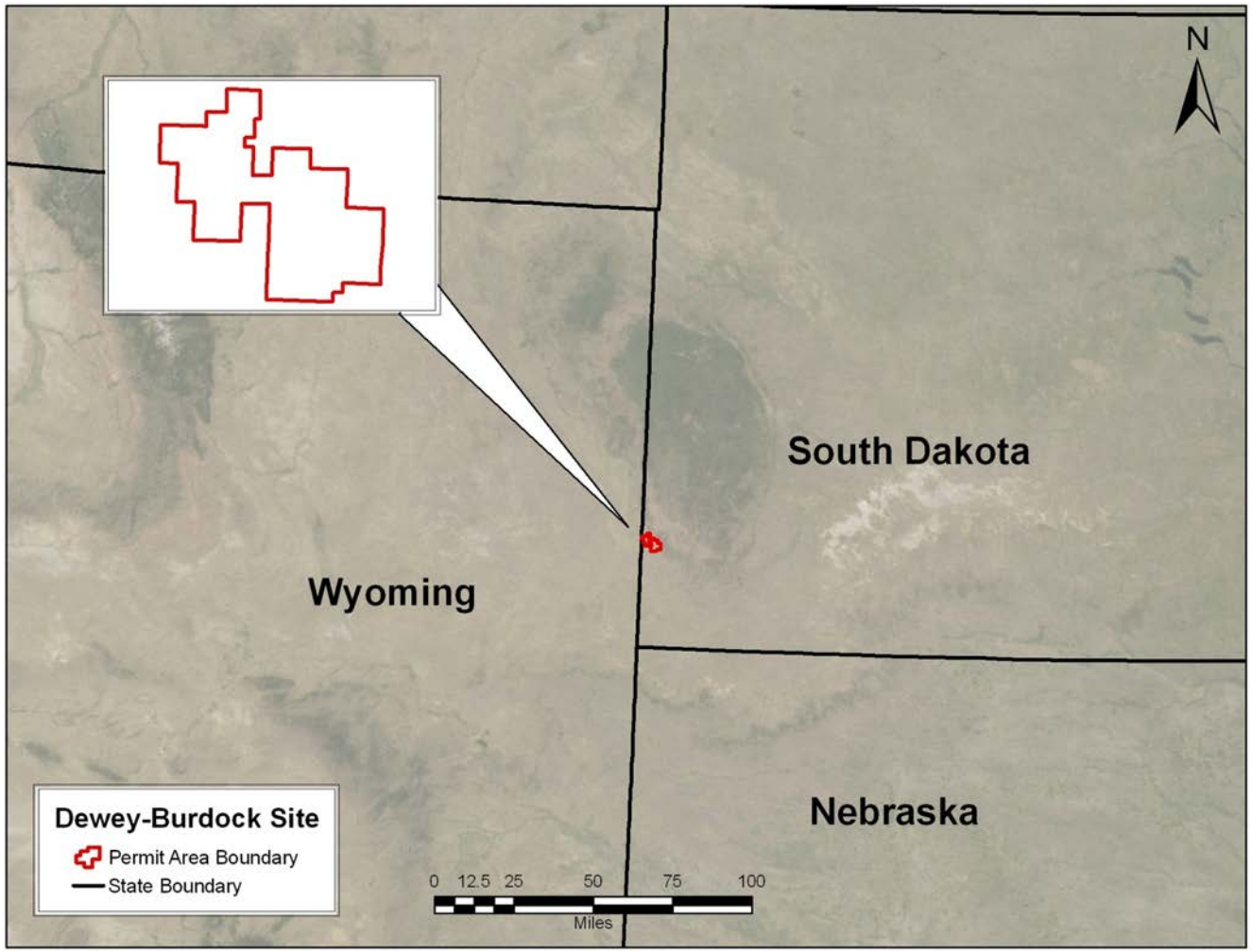

Figure 1-1. Dewey-Burdock Site Location

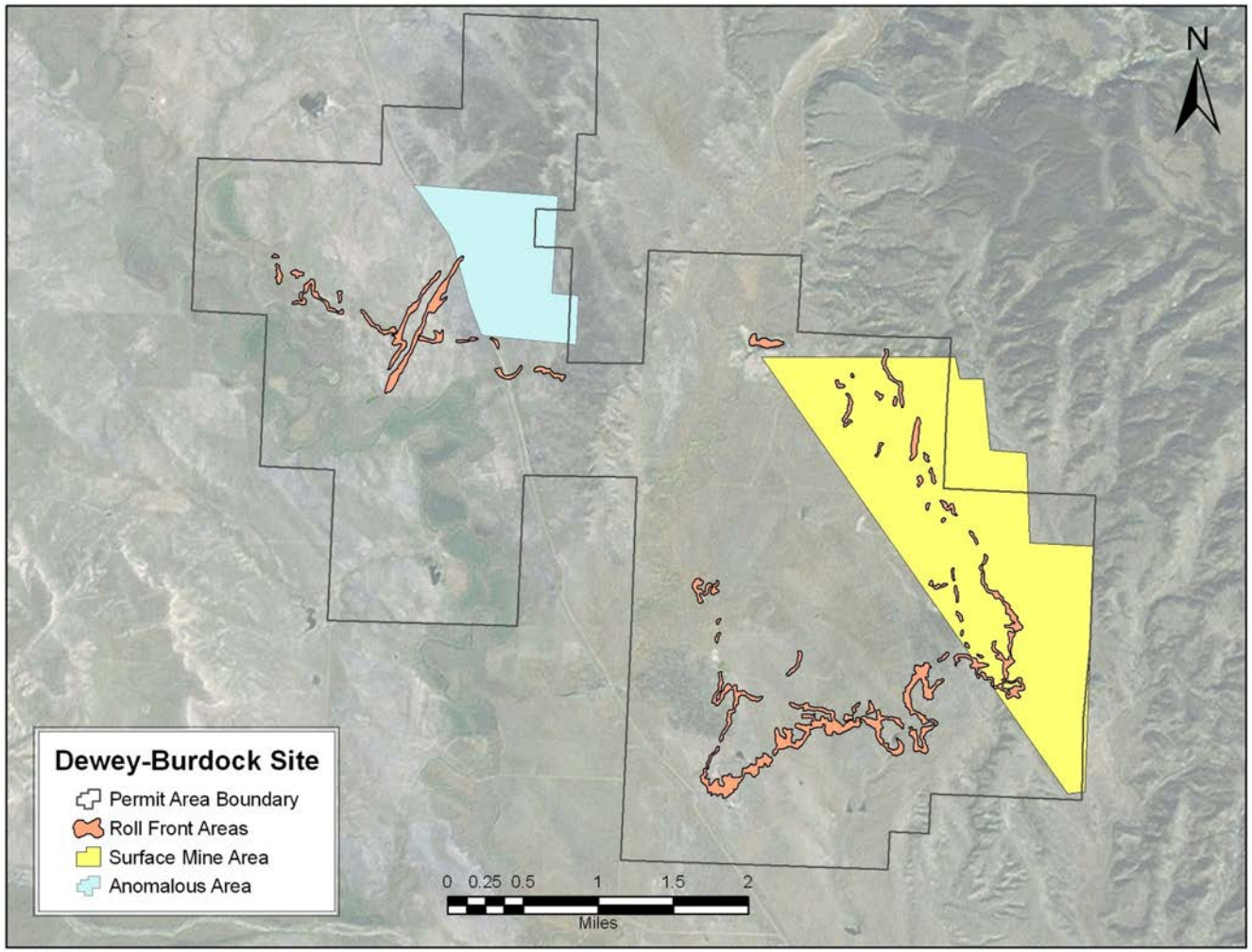

Figure 1-2. Salient Areas of Dewey-Burdock Site

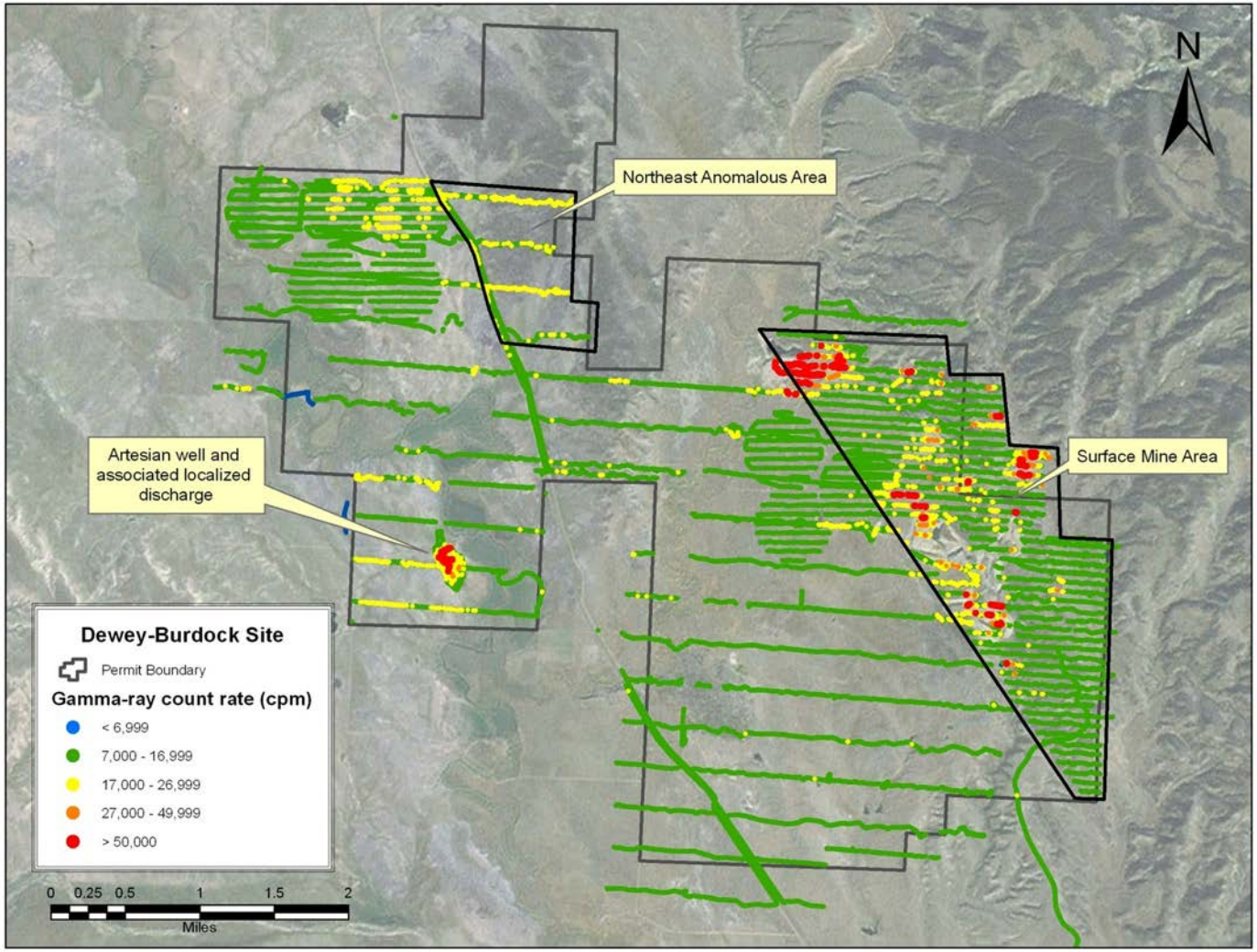

Figure 3-1. Baseline GPS-Based Gamma-Ray Count Rates

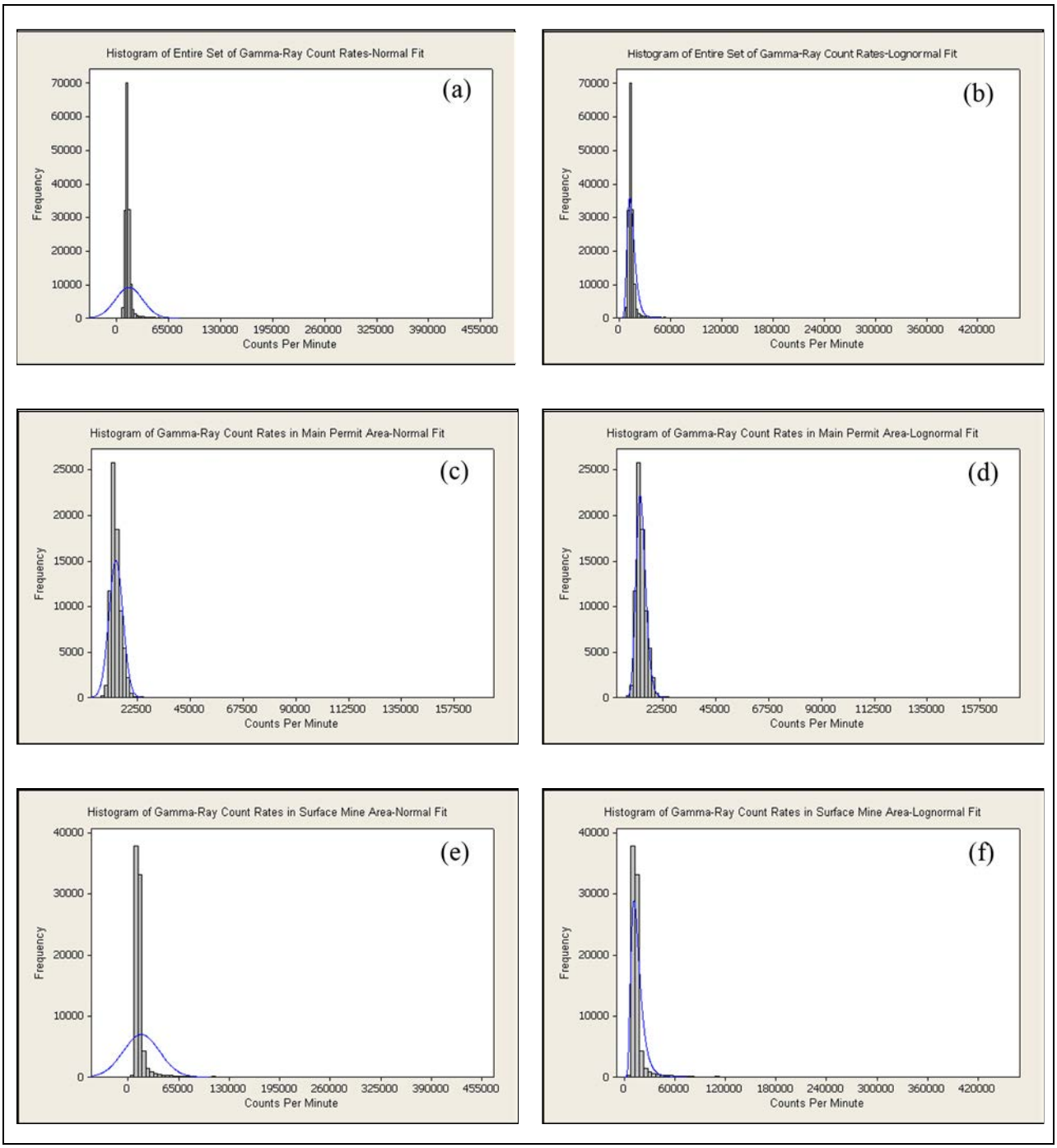

Figure 3-2. Frequency Histograms of Gamma-Ray Count Rates (a) normal fit in entire data set, (b) lognormal fit in entire data set, (c) normal fit in main permit area, (d) lognormal fit in main permit area, (e) normal fit in surface mine area, (f) lognormal fit in surface mine area.

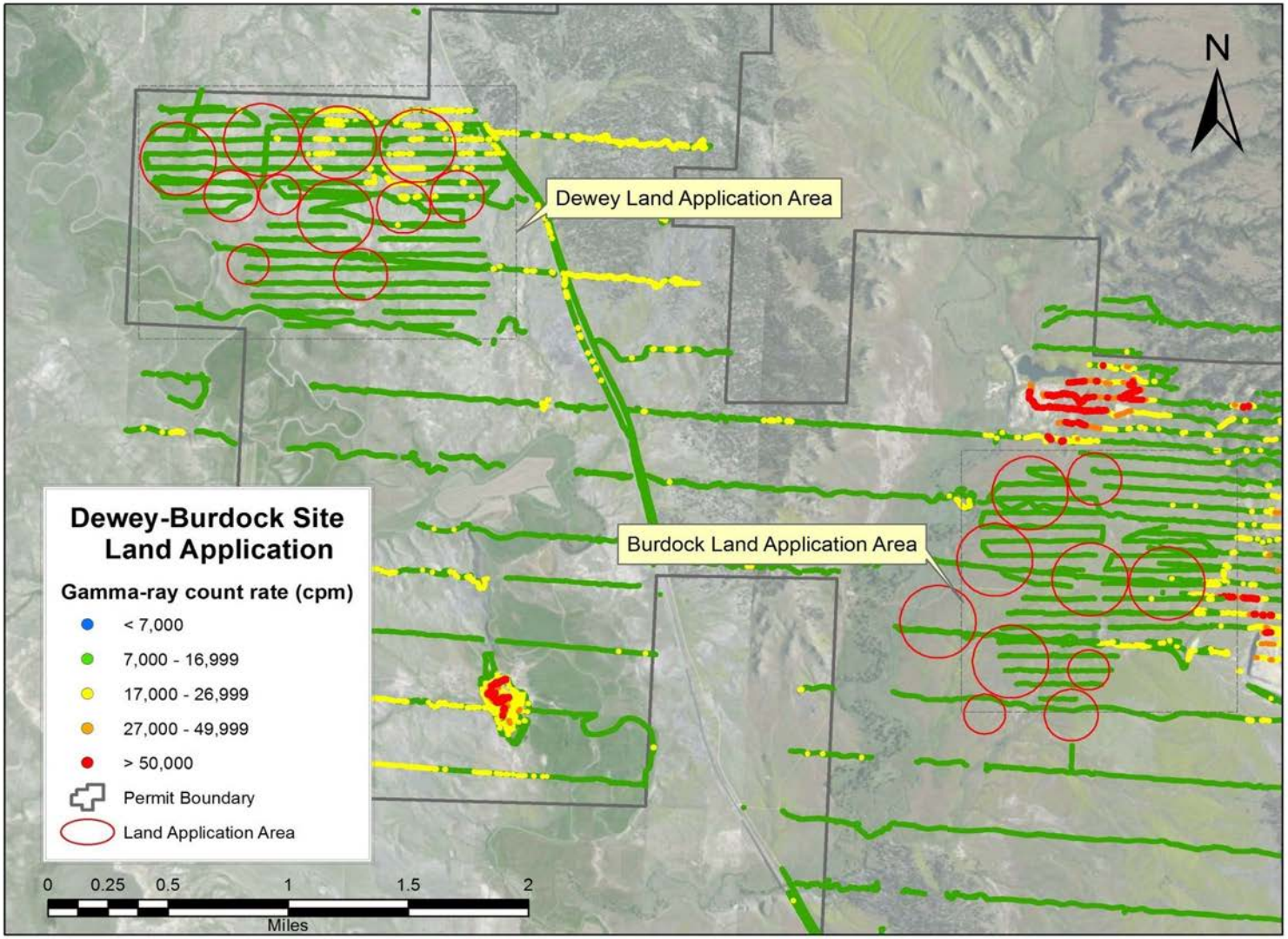

Figure 3-3. GPS-Based Gamma-Ray Count Rates in the Land Application Areas

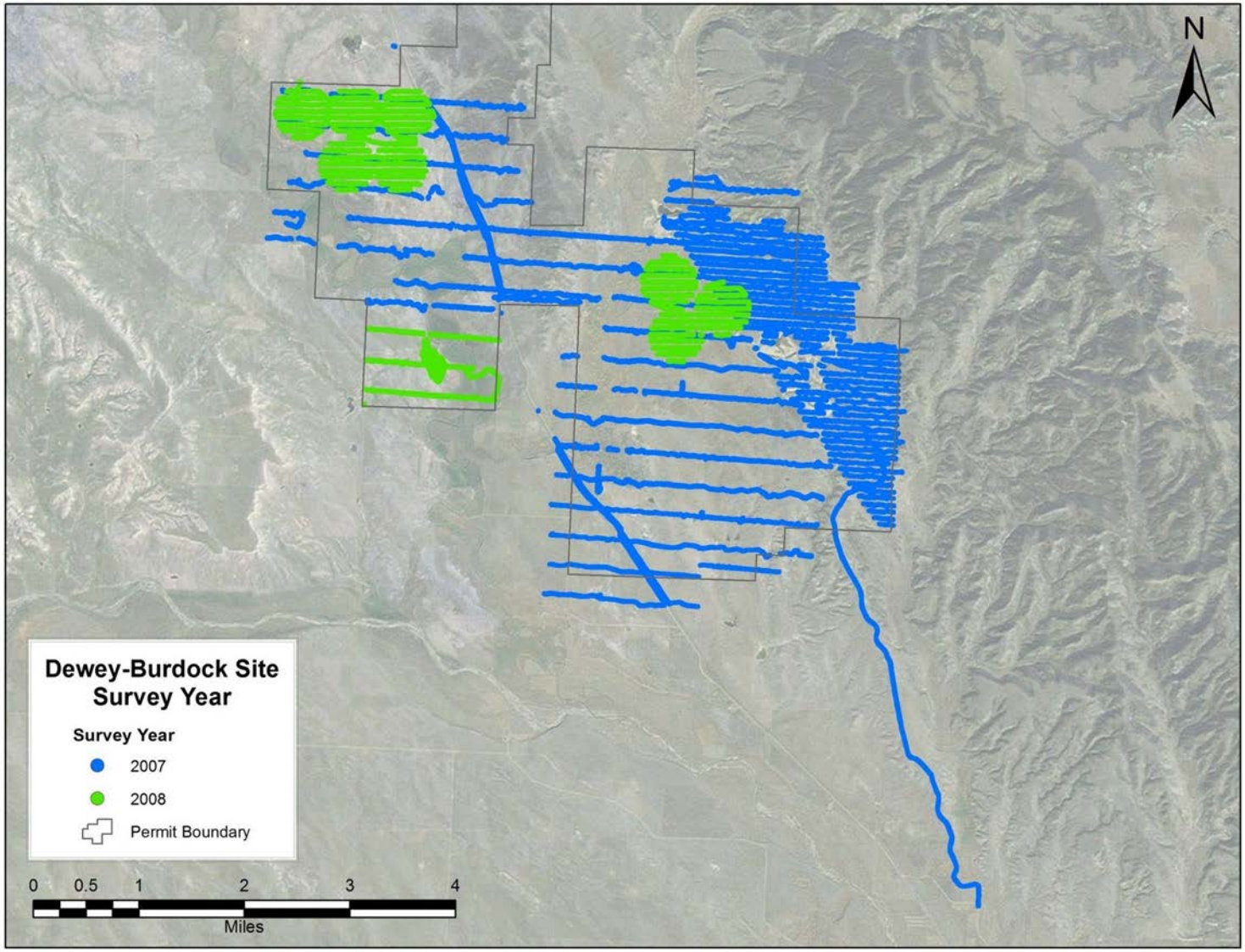

Figure 3-4. Gamma Survey by Year

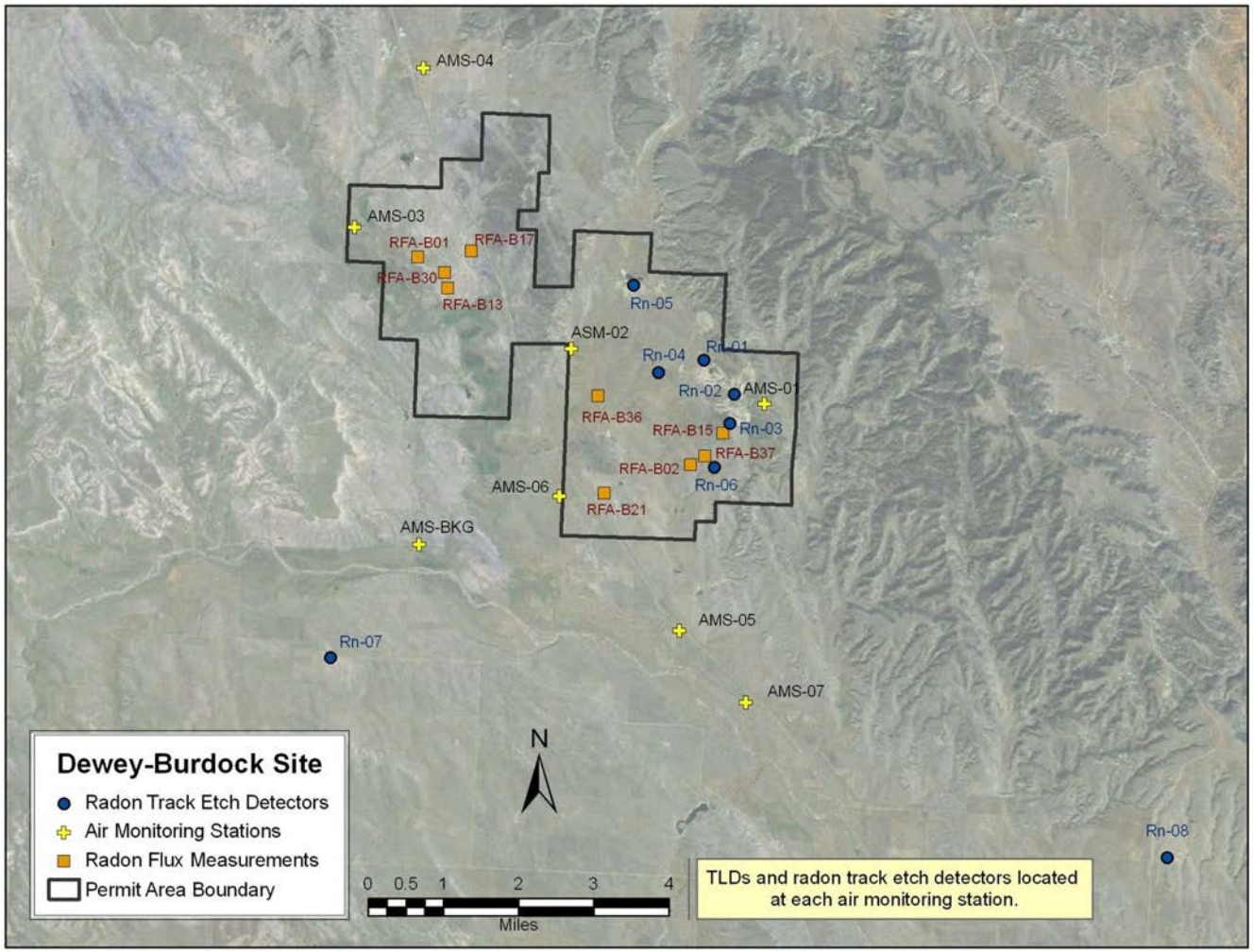

Figure 4-1. Air Monitoring Station, Ambient Radon, and Radon Flux Measurement Locations

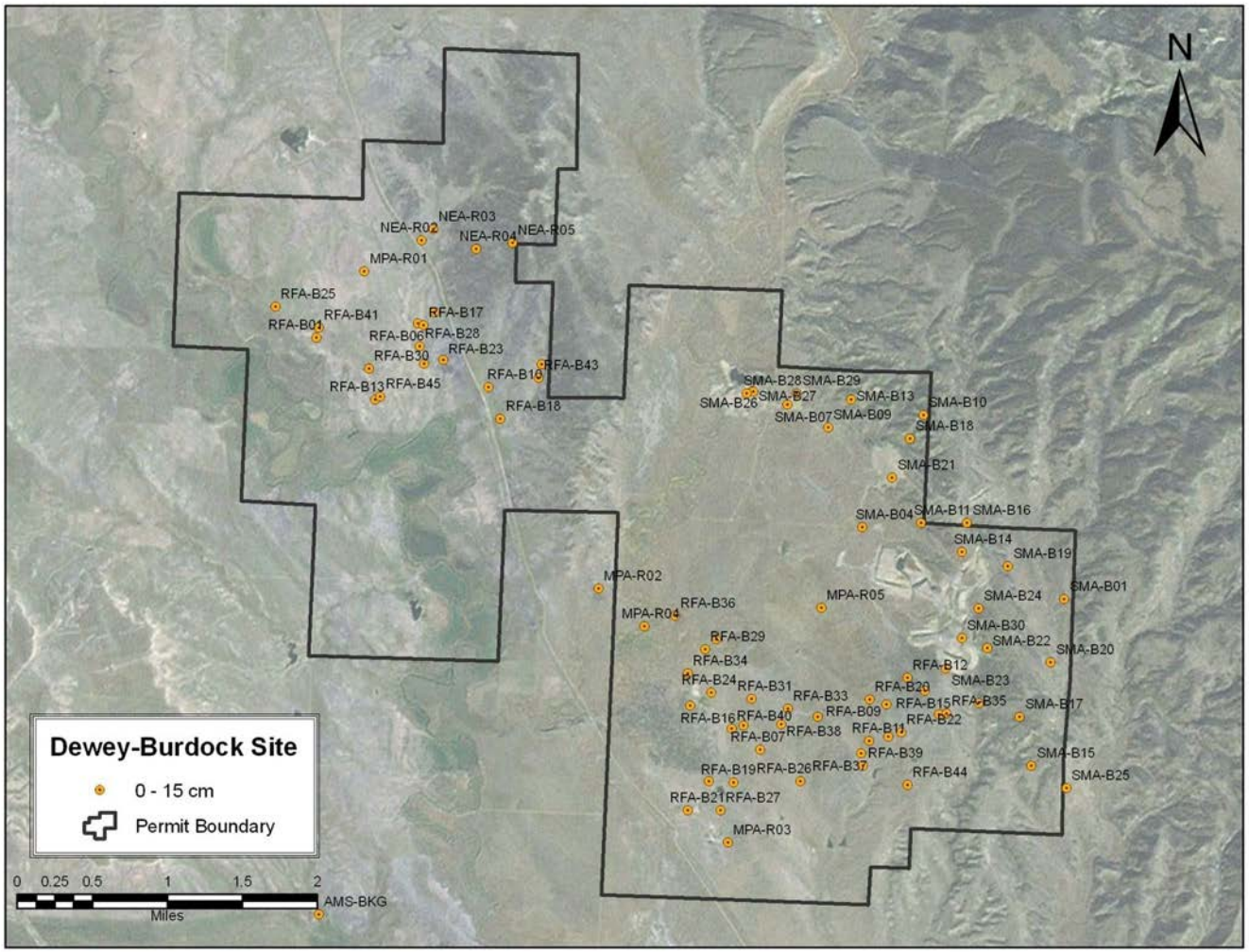

Figure 4-2. Soil Sample Locations (does not include samples collected at AMS locations and land application areas)

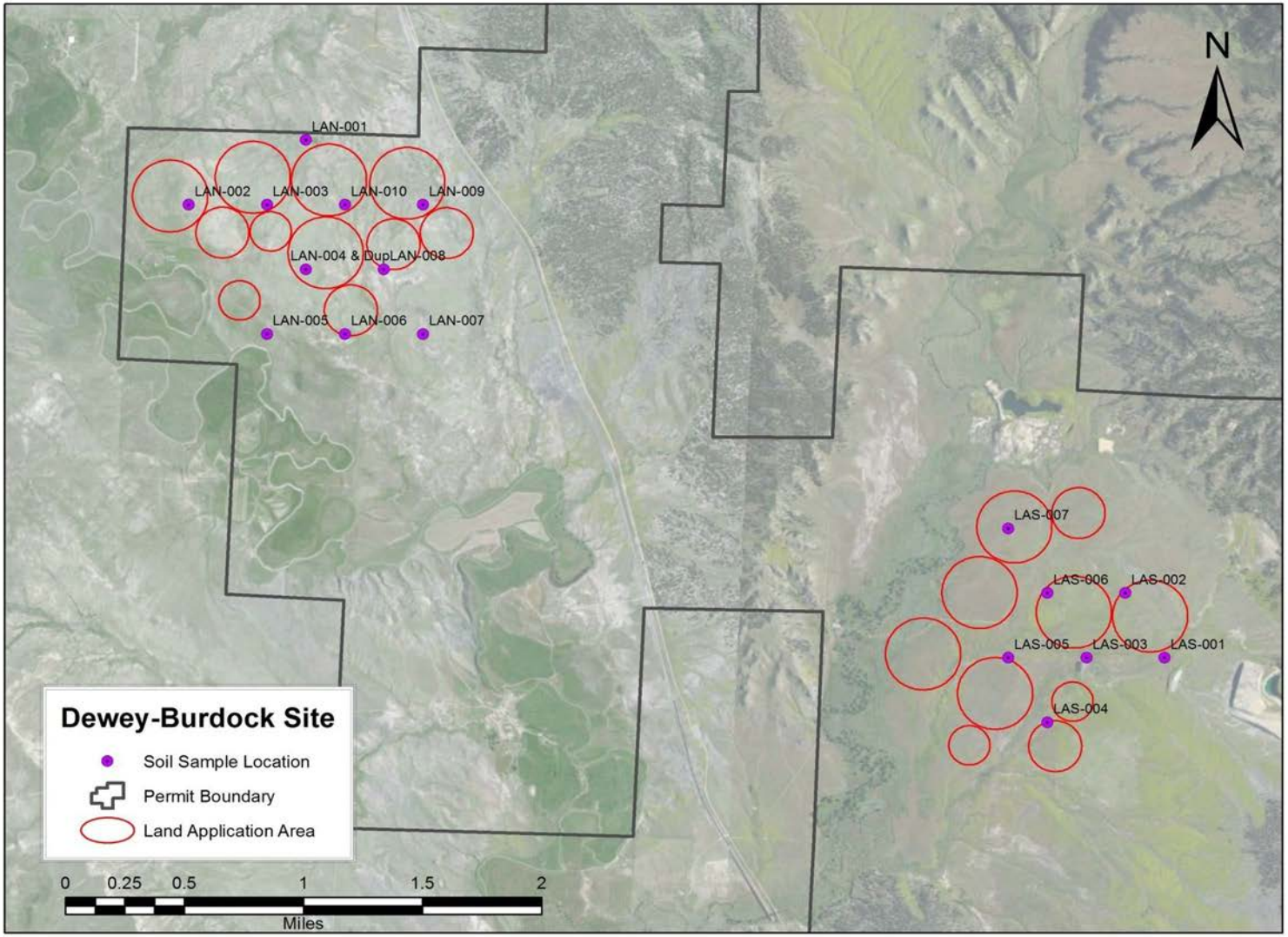

Figure 4-3. Soil Sample Locations in Land Application Areas

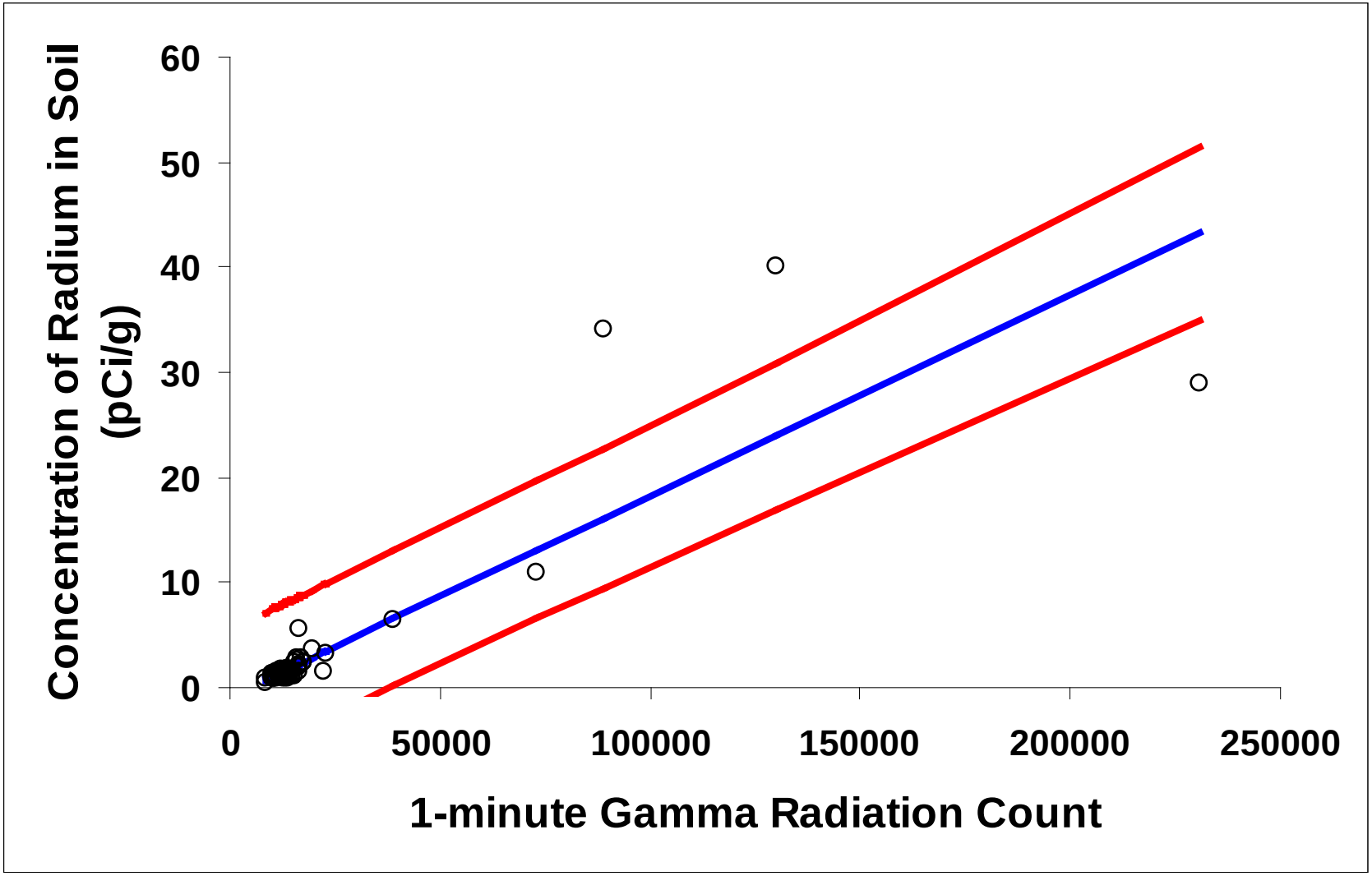

Figure 5-1. Correlation of concentrations of radium in soil and 1-minute integrated gamma-ray counts, using all 80 pairs of measurements. The red lines are predicted 95 percent confidence lines.

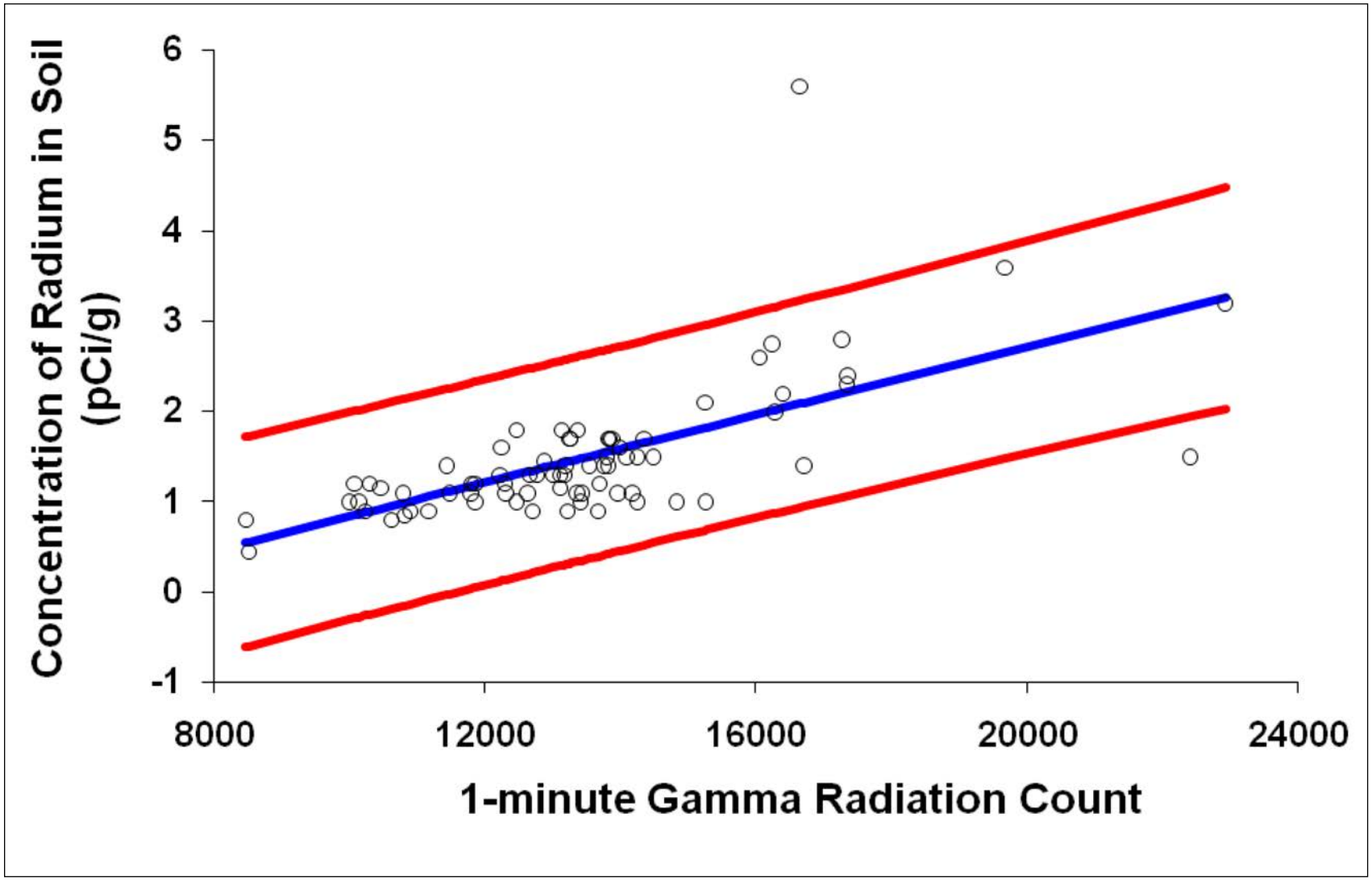

Figure 5-2. Correlation of concentrations of radium in soil and 1-minute integrated gamma-ray counts, with five outliers removed. The red lines are predicted 95 percent confidence lines.

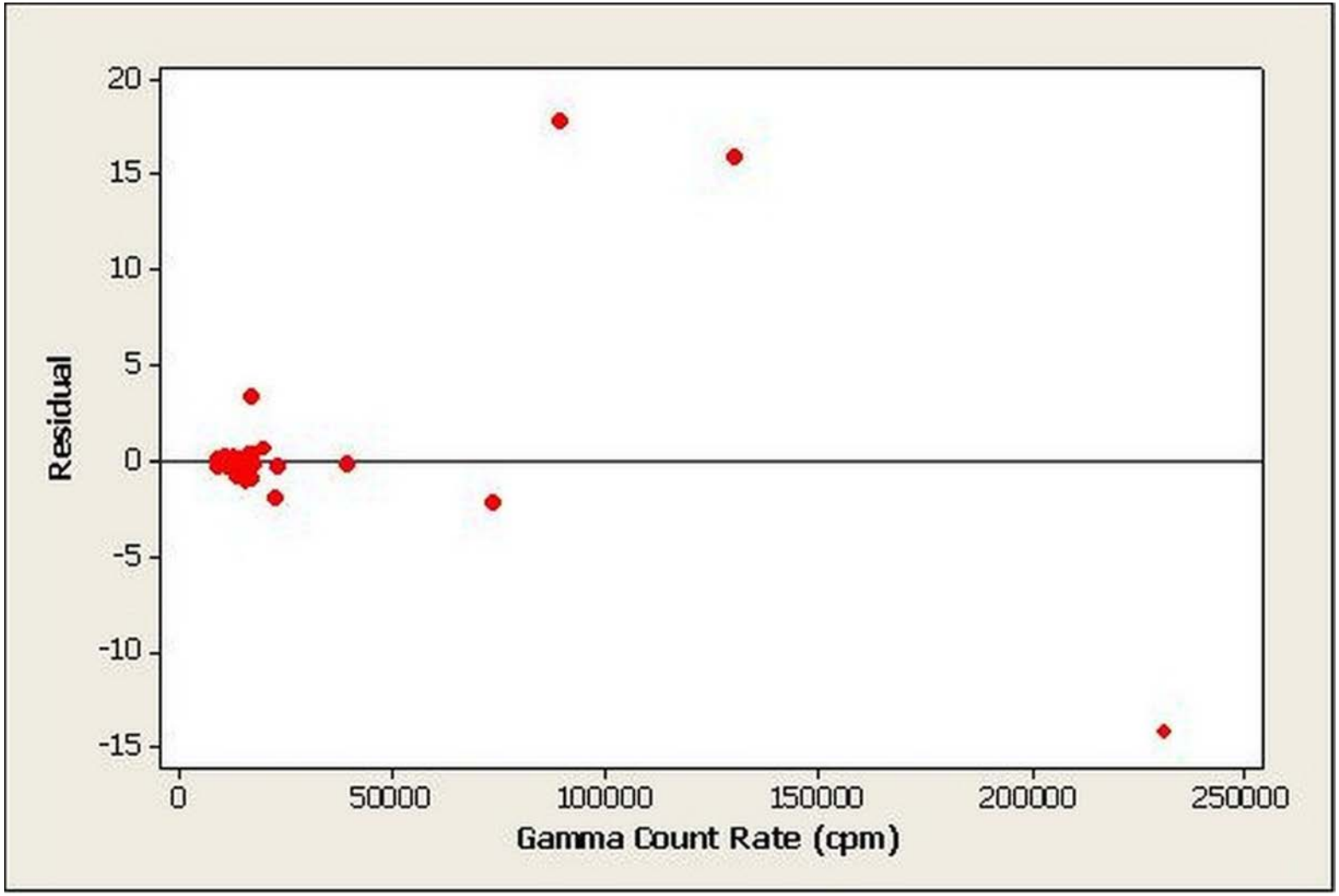

Figure 5-3. Plot of Residuals versus Gamma Count Rate for the Linear Regression Equation 1

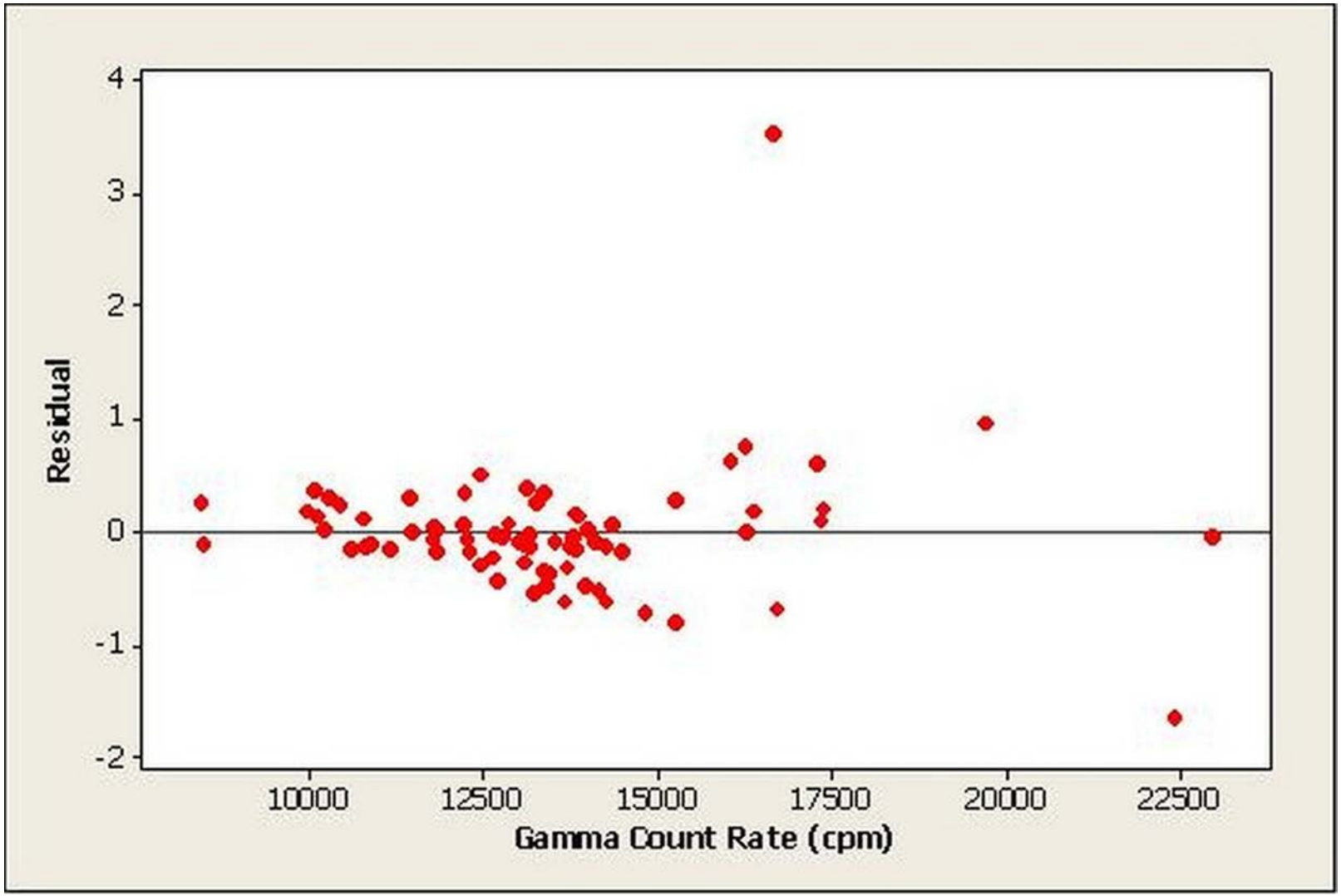

Figure 5-4. Plot of Residuals versus Gamma Count Rate for the Linear Regression Equation 2

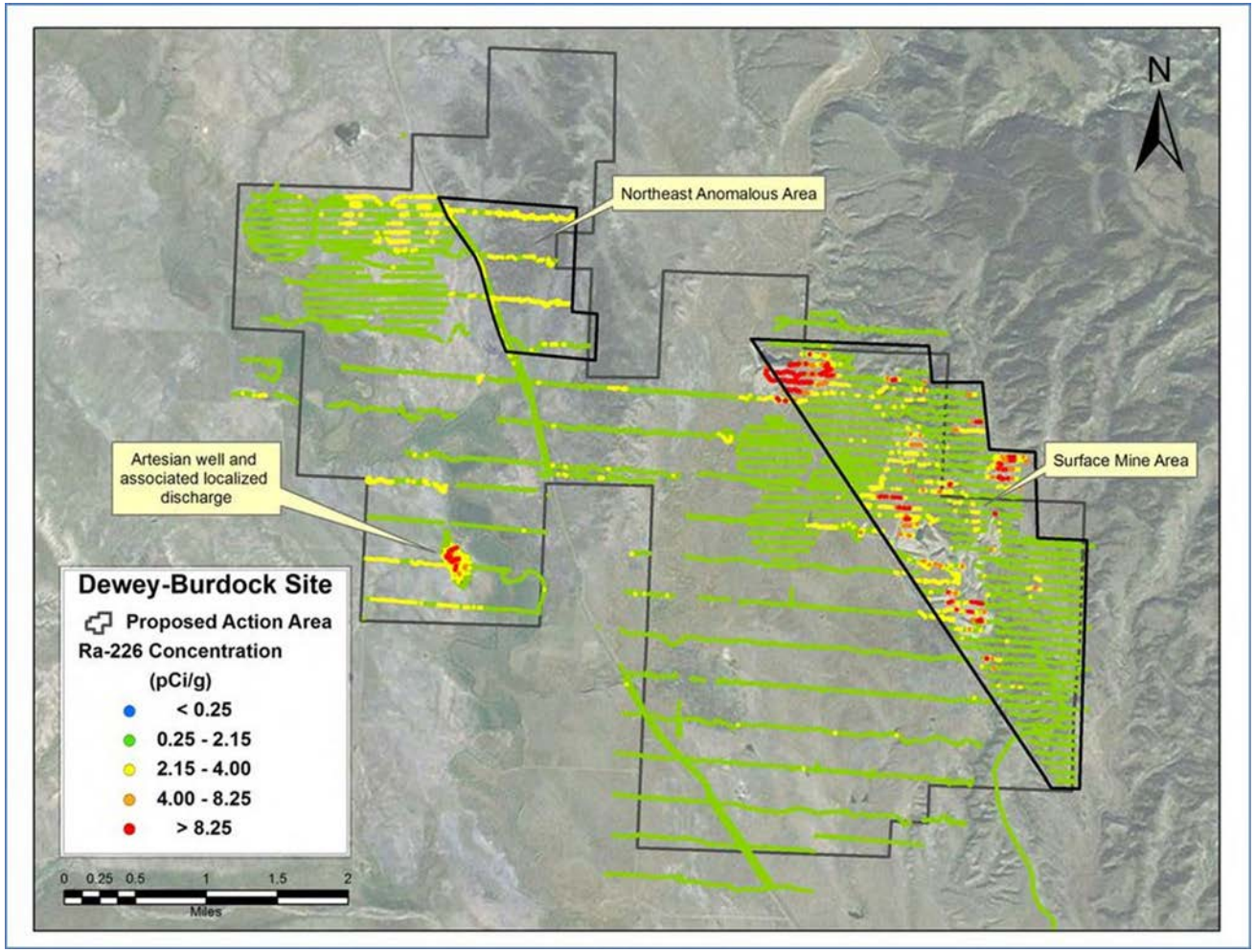

Figure 5-5. Radium-226 concentrations predicted from correlation between radium-226 concentrations in soil and gamma-ray count rates

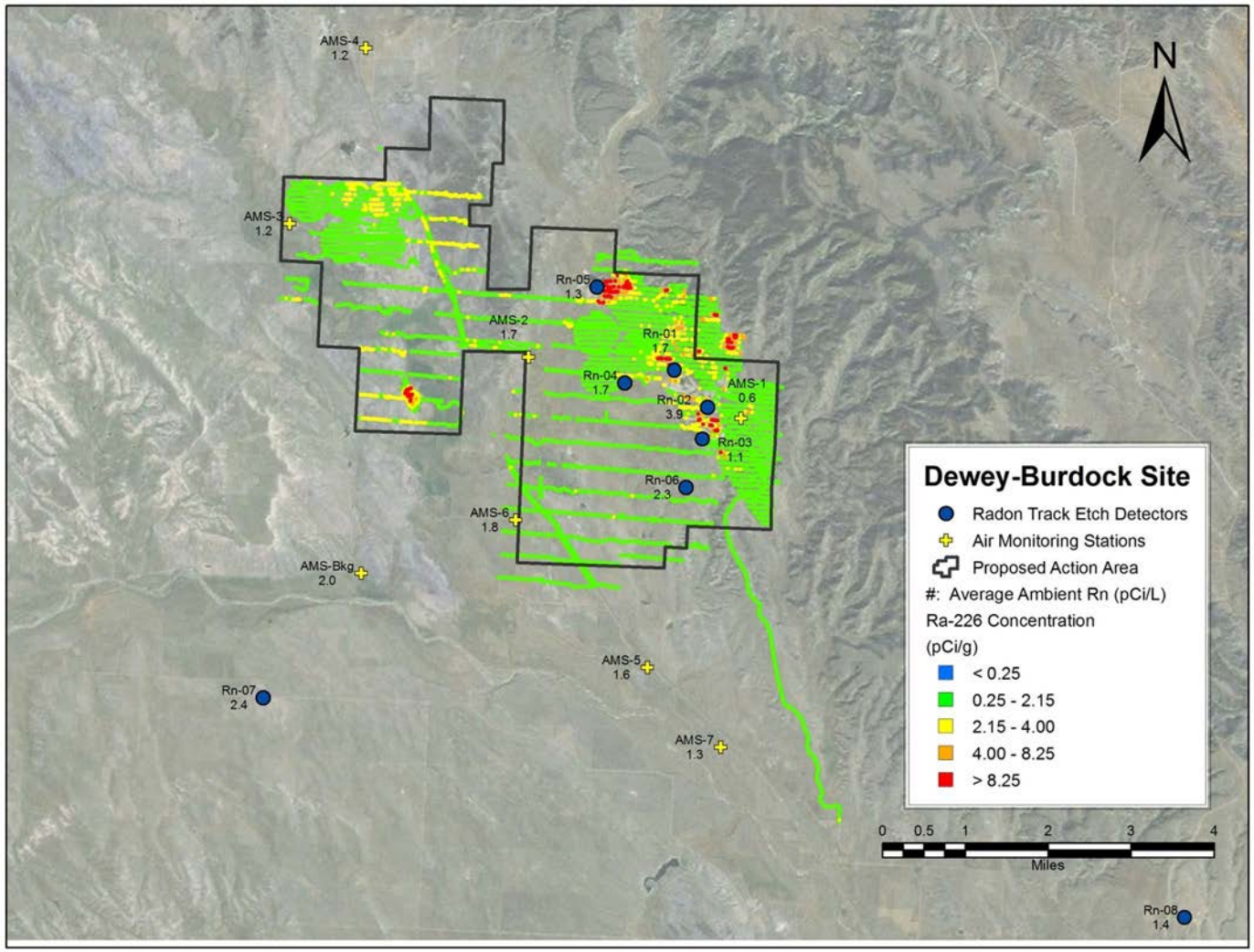

Figure 8-1. Ambient Radon Concentrations Superimposed on Predicted Radium-226 Concentrations

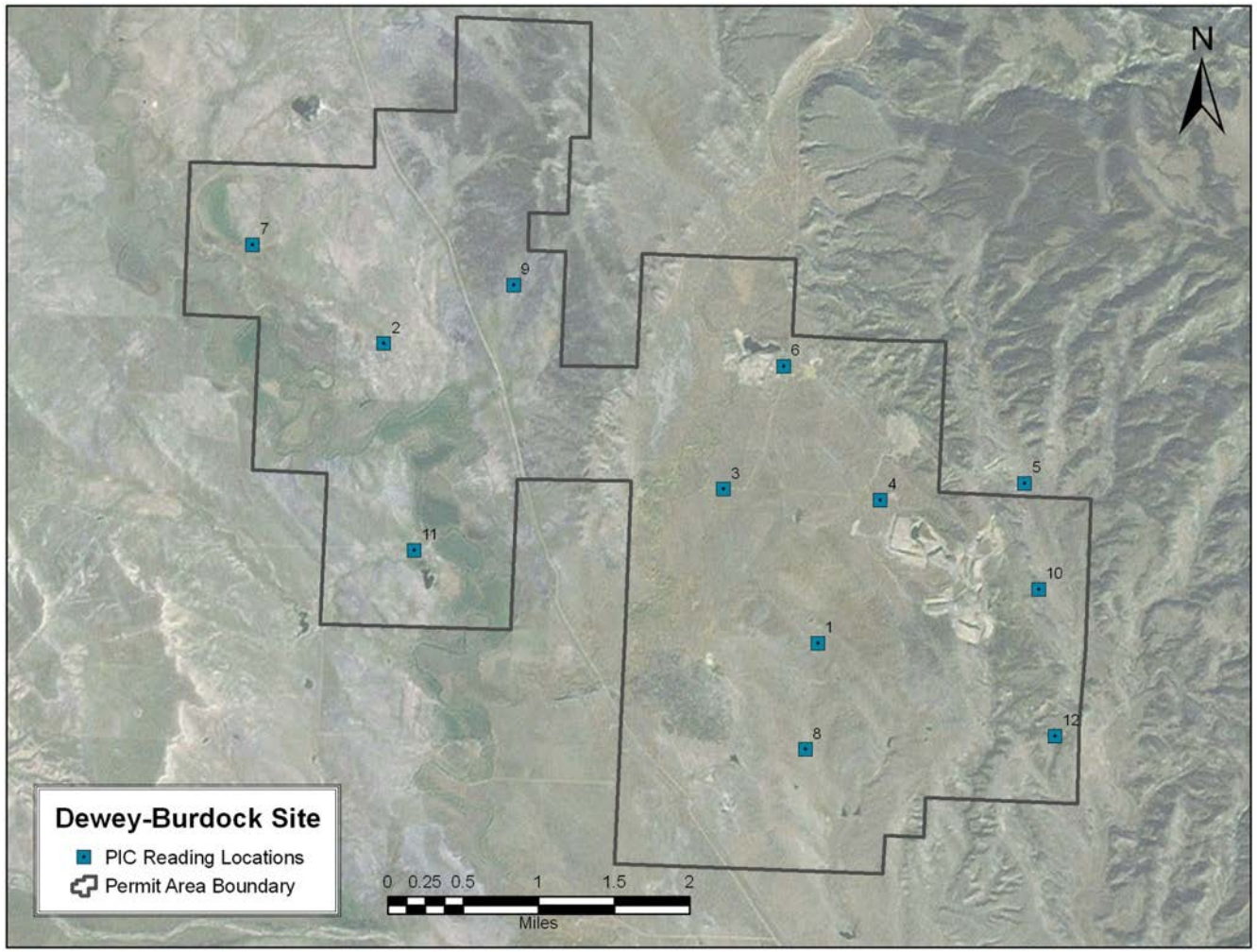

Figure 9-1. Locations of PIC-Sodium Iodide Correlation Measurements

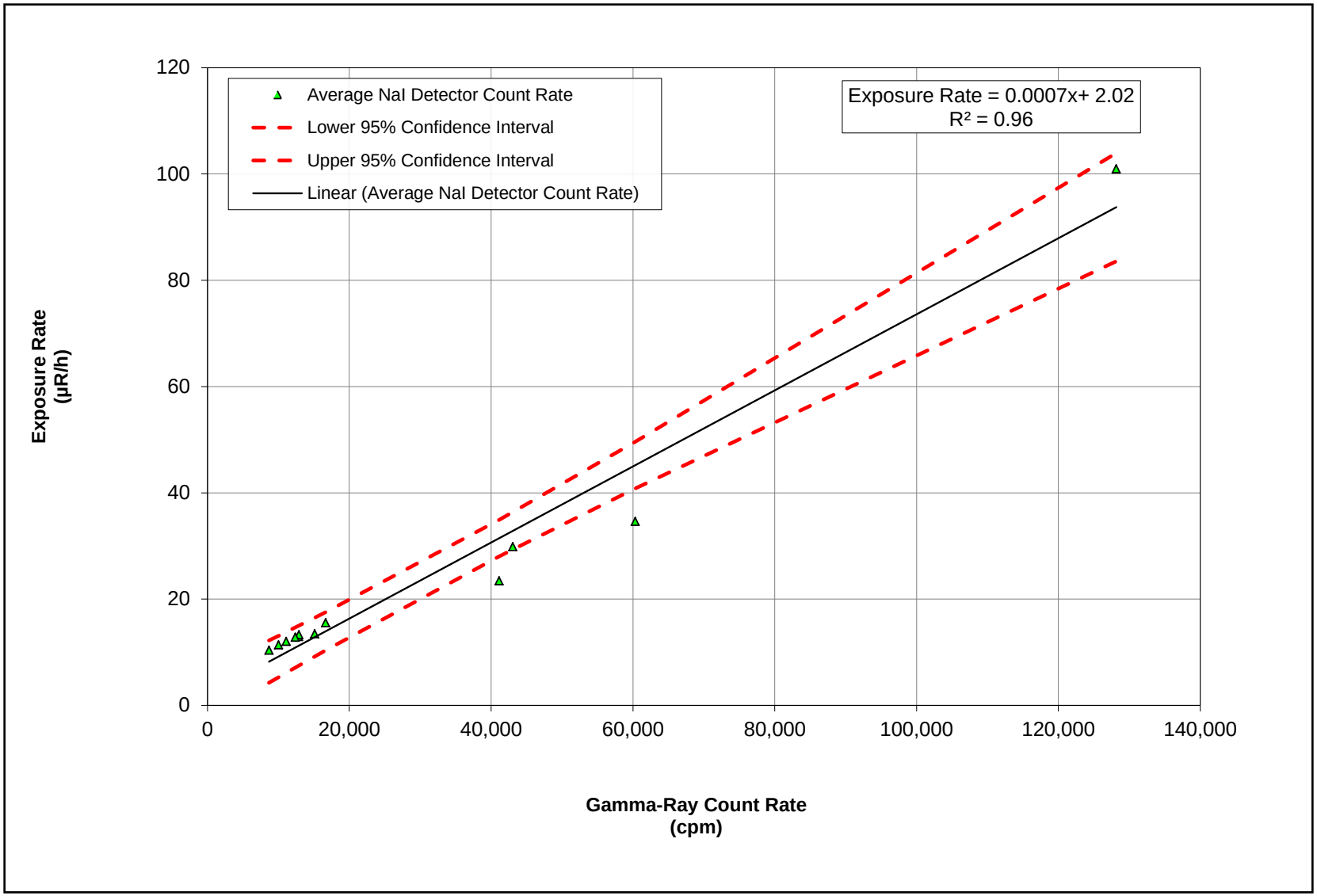

Figure 9-2. Linear Regression of Gamma Count Rate Data and PIC Measurements, Including the 95% Confidence Interval

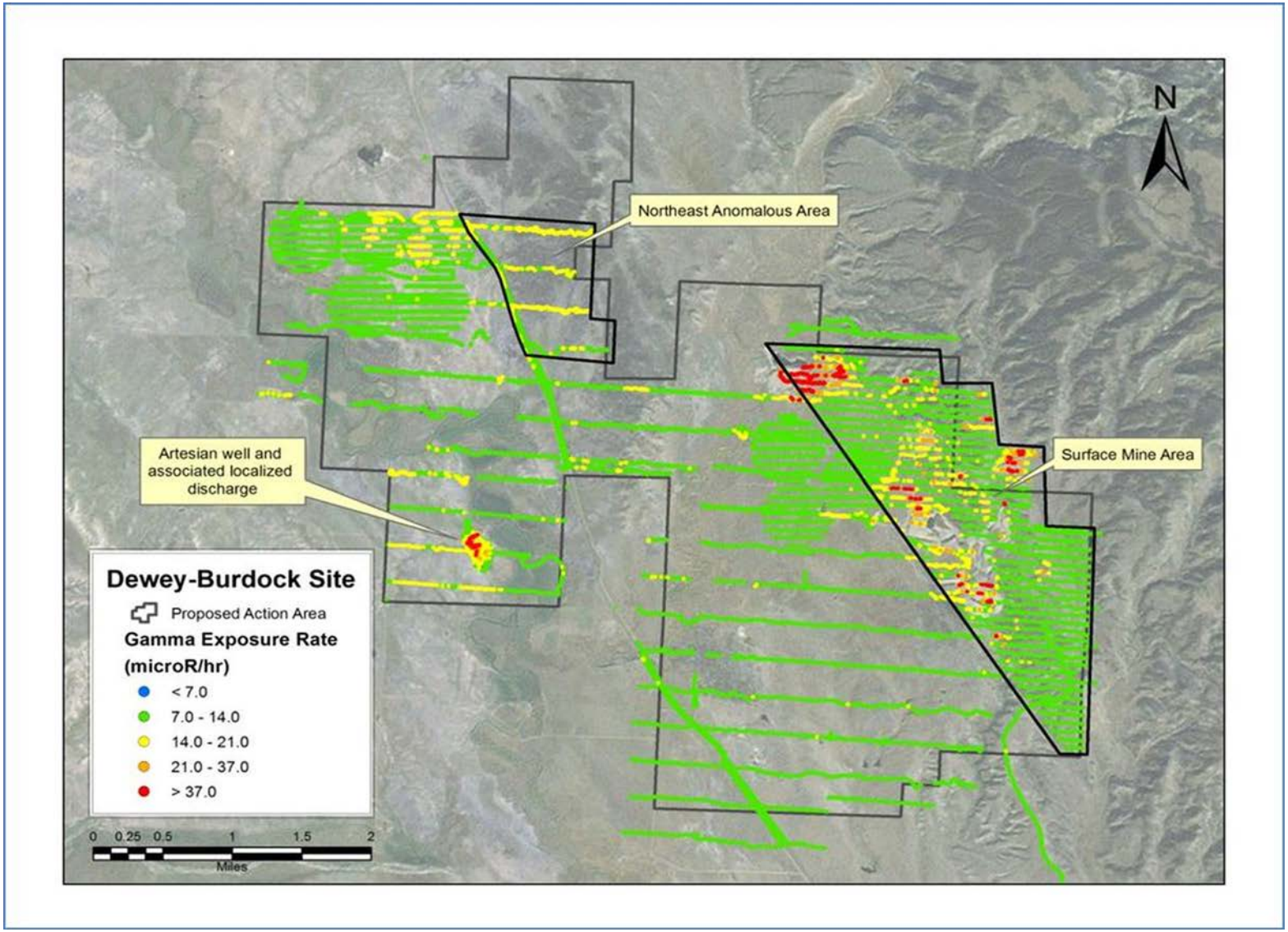

Figure 9-3. Predicted Site-Wide Exposure Rates

Appendix A

GPS-Based Gamma-Ray Survey Calibration Sheets and Function Check Data

Reuter-Stokes

Calibration Certificate

Reuter-Stokes certifies that the Environmental Radiation Monitor, identified below, has been calibrated for output using the shadow shield technique*, and calibrated with radiation sources traceable to the National Institute of Standards and Technology.

Sensor Type: 100 R/Hr

Serial Number: 07J00KM1

Calibration Date: 6/19/08

Sensitivity: 10.21 mV/μR/h

Brandon Brady 6/23/08
Authorized Signature

*Calibration Procedure: RS-SOP 238.1

Reuter-Stokes

Calibration Data

Sensor Type:	100 R/Hr	Source (CS-137):	BB-400
Serial Number:	07J00KM1	Date of Certification:	12/1/94
Calibration Date:	6/19/08	Exposure Rate at 1 meter:	4.226 mR/h

Customer Name: ENVIRONMENTAL RESTORATION

Sensitivity (Ra-226): 10.21 mV/μR/h

Distance		Exposure Rate	P+S+A	S+A	P	k(CS-137)
Feet	cm	μR/h	V	V	V	mV/μR/h
11.8	359	235.064	3.692	1.264	2.428	10.33
13.8	420	171.114	3.202	1.435	1.768	10.33
15.8	481	129.972	3.173	1.832	1.341	10.31
17.8	542	101.968	3.335	2.283	1.052	10.32

k(CS-137) = 10.32 mv/μR/h

k(Ra-226) = .9892 k(CS-137)

k(Ra-226) = 10.21 mv/μR/h

$\bar{k}$ = 10.32 mv/μR/h

σ = .008 mv/μR/h

$V = \frac{\sigma}{k} =$ 0.074%

By:

Date: 6/19/08

Reuter-Stokes

RSS-131 FIRMWARE PARAMETERS

S/N 07J00KM1

RAC	2.210E-08
ZLN	0.000E-00
ZMN	4.324E-01
ZHN	-2.127E-03
ZLD	0.000E-00
ZMD	-2.414E-04
ZHD	-6.174E-07
RLN	4.619E+11
RMN	2.231E+09
RHN	1.001E+07
RLV	-1.524E+08
RMV	2.094E+04
RHV	-1.548E+02

Only change in constants is
In the RAC from 2.228E-08

By: _____
Level 2 Nuclear / Electrical Inspector

Date: 4/19/08

Reviewed By: Brandon Bradley 4/21/08
Product Engineer

EBERLINE SERVICES

CERTIFICATE OF CALIBRATION

Gamma Standard

S.O.# 3951
P.O.# N/A

Description of Standard:

Model No. CS-7AS Serial No. 4054-02 Isotope Cs-137

The source of gamma radiation is mounted on a 2.54 cm diameter PLASTIC disc, 3 mm thick and sealed in a PLASTIC RESIN.

Measurement Method:

The gamma ray emission rate was compared with a similar standard, which was calibrated by NIST S/N 2752-91. The comparison of relative gama ray emission rates was accomplished using a high resolution gamma-ray detector (nominal active volume 100 cm³) and a multichannel pulse height analyzer.

Measurement Result:

The gamma ray activity of the standard on 10-03-2002 was 8.5 uCi.

The uncertainty of the measurement is 5 %, which is the sum of the uncertainty assigned to the NIST reference (2.2 %), random counting error at the 99% confidence level, and the estimated upper limit of systematic errors.

Calibrated by: ART REUST Reviewed by:

Calibration Technician: Art Reust Q.A. Representative: Anthony W. Toth

Calibration Date: 10-03-2002 Reviewed Date: 10-4-02

Analytical Services
7021 Pan American Freeway NE
Albuquerque, New Mexico 87109-4238
(505) 345-3461 Fax (505) 761-5416
Toll Free (866) RAD-LABS (723-5227)
www.eberlineservices.com

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221r Serial No.: 190171

All Ranges Calibrated Electronically; Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	+/- 10%	400 Kcpm
100 Kcpm	+/- 10%	100 Kcpm
40 Kcpm	+/- 10%	40 Kcpm
10 Kcpm	+/- 10%	10 Kcpm
4 Kcpm	+/- 10%	4 Kcpm
1 Kcpm	+/- 10%	1 Kcpm
400 cpm	+/- 10%	400 cpm
100 cpm	+/- 10%	100 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	+/- 10%	400 Kcpm	3998866
40 Kcpm	+/- 10%	40 Kcpm	39888
4 Kcpm	+/- 10%	4 Kcpm	3988
400 cpm	+/- 10%	400 cpm	398

Calibrated By: _____ Calibration Date: 10-9-07

Calibration Due: 10-9-08

Reviewed By: _____ Date: 10/9/07

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221 Serial No.: 117634

All Ranges Calibrated Electronically: Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	+/- 10%	400 Kcpm
100 Kcpm	+/- 10%	100 Kcpm
40 Kcpm	+/- 10%	40 Kcpm
10 Kcpm	+/- 10%	10 Kcpm
4 Kcpm	+/- 10%	4 Kcpm
1 Kcpm	+/- 10%	1 Kcpm
400 cpm	+/- 10%	400 cpm
100 cpm	+/- 10%	100 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	+/- 10%	400 Kcpm	398978
40 Kcpm	+/- 10%	40 Kcpm	39900
4 Kcpm	+/- 10%	4 Kcpm	3990
400 cpm	+/- 10%	400 cpm	399

Calibrated By: [signature] Calibration Date: 9-6-07

Calibration Due: 9-6-08

Reviewed By: [signature] Date: 9-6-07

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221 Serial No.: 117648

All Ranges Calibrated Electronically: Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	+/- 10%	400 Kcpm
100 Kcpm	+/- 10%	100 Kcpm
40 Kcpm	+/- 10%	40 Kcpm
10 Kcpm	+/- 10%	10 Kcpm
4 Kcpm	+/- 10%	4 Kcpm
1 Kcpm	+/- 10%	1 Kcpm
400 cpm	+/- 10%	400 cpm
100 cpm	+/- 10%	100 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	+/- 10%	400 Kcpm	399233
40 Kcpm	+/- 10%	40 Kcpm	39924
4 Kcpm	+/- 10%	4 Kcpm	3992
400 cpm	+/- 10%	400 cpm	399

Calibrated By: [signature] Calibration Date: 9-5-07

Calibration Due: 9-5-08

Reviewed By: [signature] Date: 9-6-07

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221r Serial No.: 138377

All Ranges Calibrated Electronically; Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	400 Kcpm	400 Kcpm
100 Kcpm	100 Kcpm	100 Kcpm
40 Kcpm	40 Kcpm	40 Kcpm
10 Kcpm	10 Kcpm	10 Kcpm
4 Kcpm	4 Kcpm	4 Kcpm
1 Kcpm	1 Kcpm	1 Kcpm
400 cpm	400 cpm	400 cpm
100 cpm	100 cpm	102 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	400 Kcpm	400 Kcpm	398495
40 Kcpm	40 Kcpm	40 Kcpm	39859
4 Kcpm	4 Kcpm	4 Kcpm	3987
400 cpm	400 cpm	400 cpm	399

Calibrated By: _____ Calibration Date: 7-8-08

Calibration Due: 7-8-09

Reviewed By: _____ Date: 7/9/08

Certificate of Calibration

Ratemeter / Scaler Certificate of Calibration

ERG
Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Manufacturer: Ludlum Model: 2221r Serial No.: 149942

All Ranges Calibrated Electronically: Ludlum Pulser Generator Serial No.: ☐ 97743 ☑ 201932

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No 481-3 • Calibration of Radiation Detection Instruments & Devices

☑ Mechanical ck. ☑ Meter Zeroed ☑ Geotropism ck. ☑ F/S Response ck. ☑ Audio ck.

☑ THR/WIN ck. High Voltage ck.: ☑ 500v ☑ 1000v ☑ 1500v ☑ Battery ck. (min 4.4 vdc)

Threshold Setting: 10 mV

Instrument found within tolerance (+/- 10%) ☑ Yes ☐ No

Reference Calibration Point	Instrument "As Found Reading"	Instrument Meter Reading
400 Kcpm	400 Kcpm	400 Kcpm
100 Kcpm	100 Kcpm	100 Kcpm
40 Kcpm	40 Kcpm	40 Kcpm
10 Kcpm	10 Kcpm	10 Kcpm
4 Kcpm	4 Kcpm	4 Kcpm
1 Kcpm	1 Kcpm	1 Kcpm
400 cpm	400 cpm	400 cpm
100 cpm	100 cpm	102 cpm

Reference Calibration Point	Instrument "As Found Reading"	Log Scale Count Rate	Integrated Counts (1-minute count)
400 Kcpm	400 Kcpm	400 Kcpm	397437
40 Kcpm	40 Kcpm	40 Kcpm	39749
4 Kcpm	4 Kcpm	4 Kcpm	3975
400 cpm	400 cpm	400 cpm	398

Calibrated By: [signature] Calibration Date: 7-8-08

Calibration Due: 7-8-09

Reviewed By: [signature] Date: 7/9/08

Certificate of Calibration

Voltage Plateau Form

ERG
Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-10 Serial No.: PR118372

Counter Mfg.: Ludlum Model: 2221r Serial No.: 149942

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other:

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other:

Gamma Source: ☑ Cs-137 @ 5.7μCi (2/18/08) sn: 4097-03 ☐ Other:

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	22785	
800	48024	
900	67222	
1000	74072	
1050	75152	
1100	77671	10553
→ 1150	78495	10558
1200	78943	

Comments: Recommended Operating High Voltage: 1150 volts

Calibrated By: [signature] Calibration Date: 7-8-08

Calibration Due: 7-8-09

Reviewed By: [signature] Date: 7/9/08

Certificate of Calibration

Voltage Plateau Form

Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-10 Serial No.: PR198936

Counter Mfg.: Ludlum Model: 2221 Serial No.: 117648

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other: _____

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other: _____

Gamma Source : ☑ Cs-137 @ 5.81μCi (3/07/07) sn: 4097-03 ☐ Other: _____

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	34348	
800	62611	
900	75761	
1000	80115	
1100	81583	9258
1200	82568	

Comments: Recommended Operating High Voltage: 1100 volts

Calibrated By: _____ Calibration Date: 9-5-07

Calibration Due: 9-5-08

Reviewed By: _____ Date: 9-6-07

Certificate of Calibration

Voltage Plateau Form

ERG
Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-10 Serial No.: PR118372

Counter Mfg.: Ludlum Model: 2221 Serial No.: 117634

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Regulation No 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other:

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other:

Gamma Source: ☑ Cs-137 @ 5.81µCi (3/07/07) sn: 4097-03 ☐ Other:

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	33013	
800	61587	
900	76444	
1000	81227	
1100	82653	9657
1200	83660	

Comments: Recommended Operating High Voltage: 1100 volts

Calibrated By: [signature] Calibration Date: 9-6 07

Calibration Due: 9-6 08

Reviewed By: [signature] Date: 9.6.07

Certificate of Calibration

Voltage Plateau Form

ERG
Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-10 Serial No.: PR198936

Counter Mfg.: Ludlum Model: 2221r Serial No.: 138377

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No. 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other:

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other:

Gamma Source: ☑ Cs-137 @ 5.7μCi (2/18/08) sn: 4097-03 ☐ Other:

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	27018	
800	52935	
900	70350	
1000	75558	
1050	76535	
1100	77714	10137
1150	77995	10243
1200	78417	

Comments: Recommended Operating High Voltage: 1150 volts

Calibrated By: [signature] Calibration Date: 7-8-08

Calibration Due: 7-8-09

Reviewed By: [signature] Date: 7/9/08

Certificate of Calibration

Voltage Plateau Form

Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-10 Serial No.: PR153990

Counter Mfg.: Ludlum Model: 2221 Serial No.: 190171

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other: _____

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other: _____

Gamma Source: ☑ Cs-137 @ 5.81µCi (3/07/07) sn: 4097-03 ☐ Other: _____

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	1058	
800	24638	
900	47539	
1000	68923	
1100	77419	
1150	79281	9781
1200	80757	

Comments: Recommended Operating High Voltage: 1150 volts

Calibrated By: _____ Calibration Date: 10-9-07

Calibration Due: 10-9-08

Reviewed By: _____ Date: 10/9/07

Certificate of Calibration

Voltage Plateau Form

ERG
Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113
(505) 298-4224

Detector Mfg.: Ludlum Model: 44-10 Serial No.: PR153990

Counter Mfg.: Ludlum Model: 2221 Serial No.: 190171

This calibration conforms to the requirements and acceptable calibration conditions of ANSI N323A - 1997
NMRCB Registration No 481-3 • Calibration of Radiation Detection Instruments & Devices

Counter Threshold Setting: 10 mV Cable Length: ☐ 39 inch, ☐ 5 foot, ☑ Other: Curly

Detector geometry to source: ☐ Face, ☑ Side, ☐ Below, ☐ Other: _____

Distance to source: ☐ Contact, ☑ 6-Inches, ☐ Other: _____

Gamma Source: ☑ Cs-137 @ 5.81μCi (3/07/07) sn: 4097-03 ☐ Other: _____

Count Time: 1 Minute

High Voltage	Gross Source Counts	Background Counts
700	1058	
800	24638	
900	47539	
1000	68923	
1100	77419	
1150	79281	9781
1200	80757	

Comments: Recommended Operating High Voltage: 1150 volts

Calibrated By: _____ Calibration Date: 10-9-07

Calibration Due: 10-9-08

Reviewed By: _____ Date: 10/9/07

(A)

Daily Function Check Form

Site: Powertech, SD

Ratemeter: Ludlum 2221 Serial No 117634 Cal Due Date 9-6-08

Detector: Ludlum 44-10 Serial No PR 118372 Cal Due Date 9-6-08

Source: Cs-137 Activity 8.5 μCi on 10-3-02 Serial No 4059-02 CS-7A5

Distance to Source: 6-in. see notes

Notes:

Date	Time	Battery	High Voltage	Threshold (mv)	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/DPM)	Initials	Location
9/13/07	0700	5.9	1102	100	97668	7412	89756	0.5%	MW	Barn
9/13/07	1710	5.8	1092	98	84431	7860	76271	0.5%	MW	Barn
9/14/07	6:50am	5.7	1108	100	91674	7968	83676	0.5%	DRF	Barn
9/14/07	8:20pm	5.7	1100	100	55281*	8100	47581	0.3%	DRF	Barn
9/15/07	6:35am	5.7	1105	100	66837*	8325	58512	0.4%	DRF	Barn
9/15/07	5:00pm	5.5	1083	97	68549*	8210	60339	0.4%	DRF	Barn
9/17/07	~~7:45am~~ 8:20am DRF	5.7	1102	99	363089**	8820**	354268	2%	DRF	Barn
9/17/07	4:20pm	5.5	1090	99	368305**	8838**	359467	2%	DRF	Barn
9/18/07	7:10am	5.6	1101	100	137052***	9060***	127992	0.7%	DRF	Barn
9/18/07	2:30pm	5.4	1100	99	130824***	8542***	122282	0.7%	DRF	Barn
9/19/07	5:45am	5.7	1106	100	134695	~~7805~~*** -8241 DRF 9/19/07	126454	0.7%	DRF	Barn
—	—	—	—	—	—	—	—	—	—	—

Reviewed By: MJH Date: 12/02/08

* Detector was raised by ~2" due to the mount on the ATV lifting during survey on 9/14/07.

** Function check jig used (source-detector distance of ~2")

*** Detector was placed on the ground (source-detector distance of 6" center-to-center)

(A)

Daily Function Check Form

Powertech, SD

Ratemeter Ludlum 2221 Serial No PR118372 Cal Due Date 9 6 08

Detector Ludlum 44-10 Serial No 117634 Cal Due Date 9-6 08

Source Cs-137 Activity 8.5 µCi 02-10-3-02 Serial No 40-7-02 Cs-7A5

Distance to Source 6-in. see notes

Notes

Date	Time	Battery	High Voltage	Threshold (mV)	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/pCi)	Initials	Location
9/19/07	5:35pm	5.4	1096	98	136365	8394	127971	0.7%	DRF	Barn
9/20/07	6:15am	5.5	1103	100	136370	8382	127988	0.7%	DRF	barn
9/20/07	5:15pm	5.4	1078	97	131286	8210	123076	0.7%	DRF	Barn
9/21/07	7:10am	5.6	1102	99	136577	8422	128155	0.7%	DRF	Barn
9/21/07	4:20pm	5.3	1091	98	134782	8112	126670	0.7%	DRF	Barn
9/25/07	7:50am	5.5	1107	100	135603	8512	127091	0.7%	DRF	Barn
9/25/07	1745	5.4	1095	99	126887	8282	118605	0.7%	NW	Barn
9/26/02 NW 9/25/07	0700	5.5	1106	100	133522	8903	124619	0.7%	NW	Barn
9/26/07	4:40pm	5.4	1096	98	135688	8143	127545	0.7%	DRF	Barn
9/27/02	0616	5.5	1107	100	137172	9263	127909	0.7%	NW	Barn
9/27/07	3:15pm	5.3	1089	99	132525	8267	124258	0.7%	DRF	Barn
—	—	—	—	—	—	—	—	—	—	—

Reviewed B

Date 12/08/

(1)

Daily Function Check Form

Site Poverty, SD

Ratemeter: Ludlum 2221 — Serial No: 117648 — Cal Due Date: 9-6-08

Detector: Ludlum 44-10 — Serial No: PR198936 — Cal Due Date: 9-6-09

Source: Cs-137 — Activity: 8.5 μCi on 10-3-02 — Serial No: 4054-07 CS-7AJ

Distance to Source: 6-in. see notes

Notes:

Date	Time	Battery	High Voltage	Threshold (mv)	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/DPM)	Initials	Location
9/13/07	0700	5.3	1104	102	105016	7486	97530	0.6%	MW	Barn
9/13/07	1710	5.3	1092	101	116576	7627	108949	0.7%		
9/14/07	6:50am	5.3	1108	101	116036	7785	108251	0.7%	DRF	Barn
9/14/07	8:20pm	5.3	1098	101	103725	7742	95983	0.6%	DRF	Barn
9/15/07	6:35am	5.3	1104	101	95925	8086	87839	0.5%	DRF	Barn
9/15/07	5:30pm	5.2	1088	100	102852	7904	94948	0.6%	DRF	Barn
9/17/07	5:15am	5.3	1102	100	292273*	8350*	283923	2%	DRF	Barn
9/17/07	4:20pm	5.2	1092	100	302007*	8154*	293853	2%	DRF	Barn
9/18/07	6:45am	5.8	1101	100	133803**	8418**	125385	0.7%	DRF	Barn
9/18/07	2:30pm	5.6	1102	101	131147**	8147**	122995	0.7%	DRF	Barn
9/19/07	5:45am	5.6	1107	100	~~134695~~** DRF 9/19/07	~~8211~~** DRF 9/19/07	123954	0.7%	DRF	Barn
—	—	—	—	—	131759	7805	—	—	—	—

Reviewed By: [signature] Date: 12/01/08

*Check done on function check jig (distance to source of 2½")

**Check done by setting detector on the ground (distance to source of 6" center-to-center)

1

(B)

Daily Function Check Form

Site: Powertech, SD

Ratemeter: 2221 (Ludlum)
Detector: Ludlum 44-10
Source: Cs-137
Distance to Source: 6-in

Serial No.: 117648
Serial No.: PR198936
Activity: 8.5 μCi on 10-3-02

Cal. Due Date: 9-6-08
Cal. Due Date: 9-6-08
Serial No.: 4054-02 CS-7AS

Notes

Date		Battery	Signal Voltage	Threshold (mV)	Gross Counts (DRF 9/20/07)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/CPM)	Initials	Location
9/19/07	5:35pm	5.4	1096	100	132023	7849	124174	0.7%	DRF	Barn
9/20/07	6:15am	5.5	1103	100	135383	7894	127489	0.7%	DRF	Barn
9/20/07	5:15pm	5.3	1088	99	131307	7677	123630	0.7%	DRF	Barn
9/21/07	7:10am	5.4	1104	100	137336	8011	129325	0.7%	DRF	Barn
9/21/07	1902	5.2	1097	100	126207	7676	118531	0.7%	NW	Barn
9/25/07	750am	5.4	1110	101	132611	8052	124559	0.7%	DRF	Barn
9/25/07	1736	5.2	1099	100	~~127114~~ 131076 NW	7914	123162	0.7%	NW	Barn
9/25/07	0705	5.3	1107	101	132784	8447	124337	0.7%	NW	Barn
9/27/07	0622	5.3	1107	100	133717	8681	125036	0.7%	NW	Barn
9/27/07	6:16pm	5.2	1098	100	134674	7814	126860	0.7%	DRF	Barn
9/28/07	0755	5.3	1106	101	130787	8242	122545	0.7%	NW	Barn
9/28/07	1037	5.2	1101	100	129316	8110	121206	0.7%	NW	Barn

Reviewed By: [signature]

Date: 12/01/08

#1

Daily Function Check Form

Site: Dewey Burdock

Ratemeter: Ludlum 2221 Serial No. 149942 Cal. Due Date 7-8-09

Detector: 44-10 Serial No. ~~PR118372~~ ~~PR118377~~ NW Cal. Due Date 7-8-09

Source: Cs-137 Activity: 8.5 µCi 03-02 Serial No. 4054-02

Distance to Source: 6-in (jig) Acceptance Range 82660 to 84723

Notes:

Date	Time	Battery	High Voltage	Threshold	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/DPM)	Initials	Location
7/14/08	1042	5.5	1142	101	92278	8055	84223	0.005	NW	Elbow Cage #1
					91566	8154	83412			
					91851	8211	83640			
					91751	8138	83613			
					91792	7882	83910			
					91184	8141	83043			
					91781	8017	83764			
					91595	8161	83434			
					91975	8167	83808			
					92129	8061	84068			
7/14/08	1712	5.3	1083	97	90998	7672	83326			
7/15/08	0753	5.5	1129	100	90010	7955	(82055)			
7/15/08	1423	5.3	1081	96	91301	7444	83857			
7/16/08	0736	5.7	1162	103	93043	7899	(85144)			
7/16/08	1524	5.3	1092	98	90511	7781	82730			
7/17/08	1202	5.5	1126	100	93565	7500	86065			
7/17/08	1946	5.4	1115	100	93121	7414	82707			
7/18/08	0838	5.1	1154	102	89584	7084	82500			

Reviewed By: [signature] Date: 12/02/08

(#1)

Daily Function Check Form

Site: Dewey Burdock

Ratemeter: Ludlum 2221 — Serial No. 149942 / PR118372 — Cal. Due Date 7-8-09

Detector: 44-10 — Serial No. ~~138377~~ NW — Cal. Due Date 7-8-09

Source: Cs-137 — Activity: 8.5 μCi, 10-3-02 — Serial No. _____

Distance to Source: 6-in. (jig) — Acceptance Range 82660 to 84723

Notes: _____

Date	Time	Battery	High Voltage	Threshold	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/DPM)	Initials	Location
7-19-08	0758	5.5	1153	102	96860	6592	90268	0.005	NW	Elbow Canyon #1
7-19-08	1441	5.4	1132	100	90159	7287	82872	↓	↓	↓

Reviewed By: _____ Date: 12/02/08

ERG Form 2 07A

Daily Function Check Form

Site: Downey Burdock

Ratemeter: Ludlum 2221
Serial No. 138377 Cal. Due Date 7-8-09
Detector: 44-10
Serial No. PR 198936 Cal. Due Date 7-8-09
Source: Cs-137
Activity: 8.5 μCi, 10-3-02 Serial No. 4054-02
Distance to Source: 6 in (jig)
Acceptance Range 80 190 to 84083

Notes:

Date	Time	Battery	High Voltage	Threshold	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/DPM)	Initials	Location
7/14/08	1035	5.8	1148	100	90596	7106	83490	0.005	MW	ELBOW CANYON RD
					89803	7021	82782			
					90015	7466	82549			
					89675	7456	82219			
					89520	7393	82127			
					89607	7697	81910			
					89010	7488	81522			
					89102	7522	81580			
					89350	7633	81717			
					89152	7685	81467			
	1712	5.7	1140	99	90957	7200	83757			
7/15/08	0751	5.7	1143	98	89384	7394	81990			
7/15/08	1423	5.7	1139	98	89870	7143	82727			
7/16/08	0737	5.7	1145	98	89462	7337	82125			
7/16/08	1526	5.5	1141	98	89532	7386	82146			
7/17/08	1203	5.6	1143	98	90804	6841	83963			
7/17/08	1946	5.4	1142	98	91557	6685	(84872)			
7/18/08	0841	5.6	1145	98	87936	6384	81552			

Reviewed By: MJ

Date: 12/02/08

(#2)

Daily Function Check Form

Site: Dewey Burdock

Ratemeter: Ludlum 2221 Serial No. 138377 Cal. Due Date 7-8-09

Detector: Ludlum 44-10 Serial No. PR 198 936 Cal. Due Date 7-8-09

Source: Cs-137 Activity: 8.5 μCi, 10-2-02 Serial No. 4054-02

Distance to Source: 6-in. (Jig) Acceptance Range 80190 to 84083

Notes:

Date	Time	Battery	High Voltage	Threshold	Gross Counts (CPM)	Background (CPM)	Net Counts (CPM)	Efficiency (CPM/DPM)	Initials	Location
7/19/08	0758	5.4	1146	99	94840	6360	88480	0.005	NW	ELBOW CANYON #2
7/19/08	1440	5.4	1143	98	90961	6712	84249	0.005	?	

Reviewed By: [signature] Date: 12/02/08

Appendix B

Laboratory Analytical Data

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-008
Client Sample ID: AMS-07

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	1.6	mg/filter		0.5		10	SW6020	04/02/08 17:44/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	2.4	pCi/Filter				1	E903.0	04/01/08 15:03/eli-c
Lead 210	1300	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	28.9	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	1.3	pCi/Filter	U			1	E903.0	04/01/08 15:03/eli-c
Radium 226 precision (±)	1.6	pCi/Filter				1	E903.0	04/01/08 15:03/eli-c
Thorium 230	2.8	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.2	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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ANALYTICAL SUMMARY REPORT

April 24, 2008

Michael Schierman
Environmental Restoration Group Inc
8809 Washington St NE
Albuquerque, NM 87113

Workorder No.: R08030221

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc. received the following 8 samples from Environmental Restoration Group Inc on 3/19/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08030221-001	AMS-BKG	10/02/07 0:00	03/19/08	Filter	Composite Fee Metals, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08030221-002	AMS-01	10/02/07 0:00	03/19/08	Filter	Same As Above
R08030221-003	AMS-02	10/02/07 0:00	03/19/08	Filter	Same As Above
R08030221-004	AMS-03	10/02/07 0:00	03/19/08	Filter	Same As Above
R08030221-005	AMS-04	10/02/07 0:00	03/19/08	Filter	Same As Above
R08030221-006	AMS-05	10/02/07 0:00	03/19/08	Filter	Same As Above
R08030221-007	AMS-06	10/02/07 0:00	03/19/08	Filter	Same As Above
R08030221-008	AMS-07	10/02/07 0:00	03/19/08	Filter	Composite Fee Metals, Total Digestion, Total Metals Lead 210 Radium 226 Thorium, Isotopic

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By: Linda A

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-001
Client Sample ID: AMS-BKG

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 16:59/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	2.4	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Lead 210	834	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	23.1	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	1.9	pCi/Filter	U			1	E903.0	04/01/08 13:23/eli-c
Radium 226 precision (±)	1.7	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Thorium 230	3.2	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.3	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-002
Client Sample ID: AMS-01

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 17:03/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	2.3	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Lead 210	1160	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	27.3	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	4.1	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Radium 226 precision (±)	1.9	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Thorium 230	2.2	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-003
Client Sample ID: AMS-02

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 17:07/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	1.8	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Lead 210	560	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	19.0	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	1.2	pCi/Filter	U			1	E903.0	04/01/08 13:23/eli-c
Radium 226 precision (±)	1.2	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Thorium 230	1.6	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-004
Client Sample ID: AMS-03

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 17:12/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	1.8	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Lead 210	821	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	23.0	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	1.2	pCi/Filter	U			1	E903.0	04/01/08 13:23/eli-c
Radium 226 precision (±)	1.2	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Thorium 230	1.3	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-005
Client Sample ID: AMS-04

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 17:16/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	2.0	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Lead 210	790	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	22.5	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	4.7	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Radium 226 precision (±)	1.8	pCi/Filter				1	E903.0	04/01/08 13:23/eli-c
Thorium 230	1.8	pCi/Filter		0.2		1	E907.0	04/10/08 15:00/eli-c
Thorium 230 precision (±)	1.4	pCi/Filter				1	E907.0	04/10/08 15:00/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-006
Client Sample ID: AMS-05

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 17:36/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	2.6	pCi/Filter				1	E903.0	04/01/08 15:03/eli-c
Lead 210	654	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	20.5	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	-1	pCi/Filter	U			1	E903.0	04/01/08 15:03/eli-c
Radium 226 precision (±)	1.2	pCi/Filter				1	E903.0	04/01/08 15:03/eli-c
Thorium 230	2.9	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
MDC - Minimum detectable concentration
MCL - Maximum contaminant level
ND - Not detected at the reporting limit
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08030221-007
Client Sample ID: AMS-06

Report Date: 04/24/08
Collection Date: 10/02/07
Date Received: 03/19/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter		0.5		10	SW6020	04/02/08 17:40/eli-c
RADIONUCLIDES - TOTAL								
Radium 226 MDC	2.1	pCi/Filter				1	E903.0	04/01/08 15:03/eli-c
Lead 210	942	pCi/Filter		1.0		1	E909.0M	03/25/08 12:00/eli-c
Lead 210 precision (±)	24.6	pCi/Filter				1	E909.0M	03/25/08 12:00/eli-c
Radium 226	-1	pCi/Filter	U			1	E903.0	04/01/08 15:03/eli-c
Radium 226 precision (±)	1.0	pCi/Filter				1	E903.0	04/01/08 15:03/eli-c
Thorium 230	1.5	pCi/Filter		0.2		1	E907.0	03/26/08 15:15/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	03/26/08 15:15/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)

Report Date: 04/24/08
Work Order: R08030221

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: C_RA226-2688
Sample ID: C08030621-004AMS	Sample Matrix Spike				Run: SUB-C98992				04/01/08 11:46
Radium 226	3.8	pCi/g		125	70	130			
Sample ID: C08030621-004AMSD	Sample Matrix Spike Duplicate				Run: SUB-C98992				04/01/08 11:46
Radium 226	4.1	pCi/g		135	70	130	7.9	26.2	S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD for the MS MSD pair are acceptable, the high response is considered to b matrix related. The batch is approved.									
Sample ID: LCS-18083	Laboratory Control Sample				Run: SUB-C98992				04/01/08 15:03
Radium 226	11	pCi/L		82	70	130			
Sample ID: MB-18083	Method Blank				Run: SUB-C98992				04/01/08 15:03
Radium 226	-1	pCi/L							
Method: E907.0									Batch: C_18083
Sample ID: C08030720-001KMS	Sample Matrix Spike				Run: SUB-C99086				03/26/08 15:15
Thorium 230	23.1	pCi/L	0.20	94	70	130			
Sample ID: C08030720-001KMSD	Sample Matrix Spike Duplicate				Run: SUB-C99086				03/26/08 15:15
Thorium 230	23.8	pCi/L	0.20	97	70	130	2.8	30	
Sample ID: LCS-18083	Laboratory Control Sample				Run: SUB-C99086				03/26/08 15:15
Thorium 230	46.1	pCi/g-dry	0.10	98	70	130			
Sample ID: MB-18083	Method Blank				Run: SUB-C99086				03/26/08 15:15
Thorium 230	ND	pCi/g-dry							
Method: E907.0									Batch: C_R99819
Sample ID: C08040278-005DMS	Sample Matrix Spike				Run: SUB-C99819				04/10/08 15:00
Thorium 228	13.4	pCi/L	0.20	115	70	130			
Sample ID: C08040278-005DMSD	Sample Matrix Spike Duplicate				Run: SUB-C99819				04/10/08 15:00
Thorium 228	13.8	pCi/L	0.20	117	70	130	2.9	30	
Sample ID: MB-R99819	Method Blank				Run: SUB-C99819				04/10/08 15:00
Thorium 230	0.1	pCi/L							
Sample ID: LCS-R99819	Laboratory Control Sample				Run: SUB-C99819				04/10/08 15:00
Thorium 228	10.0	pCi/L	0.20	123	70	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)

Report Date: 04/24/08
Work Order: R08030221

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0M									Batch: C_18083
Sample ID: R08030221-004A	Sample Matrix Spike				Run: SUB-C98854				03/25/08 12:00
Lead 210	1540	pCi/Filter	1.0	121	70	130			
Sample ID: R08030221-004A	Sample Matrix Spike Duplicate				Run: SUB-C98854				03/25/08 12:00
Lead 210	1300	pCi/Filter	1.0	81	70	130	17	30	
Sample ID: MB-R98854	Method Blank				Run: SUB-C98854				03/25/08 12:00
Lead 210	5	pCi/Filter							
Sample ID: LCS-R98854	Laboratory Control Sample				Run: SUB-C98854				03/25/08 12:00
Lead 210	94.1	pCi/Filter	1.0	75	70	130			
Method: SW6020									Batch: C_18083
Sample ID: MB-18083	Method Blank				Run: SUB-C99006				04/02/08 16:51
Uranium	0.0001	mg/kg	6E-05						
Sample ID: LCS1-18083	Laboratory Control Sample				Run: SUB-C99006				04/02/08 16:55
Uranium	0.0470	mg/kg	0.015	89	75	125			
Sample ID: C08030621-004AMS	Sample Matrix Spike				Run: SUB-C99175				04/03/08 20:44
Uranium	24.4	mg/kg	0.028	102	75	125			
Sample ID: C08030621-004AMSD	Sample Matrix Spike Duplicate				Run: SUB-C99175				04/03/08 20:50
Uranium	24.1	mg/kg	0.029	100	75	125	1.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name: Environmental Restoration Group	Project Name, PWS, Permit, Etc.: Dewey - Burdock	Sample Origin State: South Dakota	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 8809 Washington St NE Suite 150 Albuquerque NM 87113	Contact Name: Michael Schierman Phone/Fax: 505-298-4224	Email: mikeschiermman@cfgoffice.com	Sampler: (Please Print) NA
Invoice Address: Same as above	Invoice Contact & Phone: Michael Schierman	Purchase Order:	Quote/Bottle Order: NA

Special Report/Formats – ELI must be notified prior to sample submittal for the following:
Please Send EDD to Cory Tinneman @ RESPEC

☐ DW ☐ A2LA
☐ GSA ☑ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other	ANALYSIS REQUESTED: Natural Uranium	Ra-226	Th-230	Pb-210	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	Comments	Lab ID
1 AMS-Bkg	9/28/07 10/02/07	NA	O		X	X	X	X		X		Please composite all filters	L30030221-001A
2 AMS-01													002A
3 AMS-02													003A
4 AMS-03													004A
5 AMS-04													005A
6 AMS-05													006A
7 AMS-06													007A
8 AMS-07													008A
9													
10													

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Shipped by: MJS
Cooler ID(s):
Receipt Temp: _____ °C
On Ice: Yes No
Custody Seal Y N
Intact Y N
Signature Match Y N

LABORATORY USE ONLY

Custody Record MUST be Signed

Relinquished by (print): Michael Schierman	Date/Time: 3/18/08	Signature: Michael Schierman	Received by (print): Steve Fairbend	Date/Time: 3-19-08 1300	Signature: Steve Fairbend
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Sample Disposal: Return to Client _____ Lab Disposal _____			Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links

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ANALYTICAL SUMMARY REPORT

February 12, 2008

Michael Schierman
Environmental Restoration Group Inc
8809 Washington St NE
Albuquerque, NM 87113

Workorder No.: R08010193 Quote ID: R279

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc received the following 9 samples from Environmental Restoration Group Inc on 1/17/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08010193-001	BKG	10/09/07 0:00	01/17/08	Filter	Composite Fee Metals, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08010193-002	AMS-01	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-003	AMS-02	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-004	AMS-03	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-005	AMS-04	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-006	AMS-05	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-007	AMS-06	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-008	AMS-07	10/09/07 0:00	01/17/08	Filter	Same As Above
R08010193-009	AMS-08	10/09/07 0:00	01/17/08	Filter	Same As Above

Thank you for submitting your samples to Energy Laboratories, Inc. - Rapid City. The following pages contain the results of the sample tests listed above and applicable analytical notes.

The samples were analyzed in accordance with the methods specified on the analytical reports. All analyses were accompanied by appropriate quality control samples throughout the test. Where applicable, the results of these quality control samples will be included, following your analytical data.

If you have any questions regarding the analyses performed or the results of these analyses, please contact Energy Laboratories Inc. - Rapid City at (605) 342-1225, (888) 672-1225 or Rapid_City@energylab.com.

Report Approved By: Linda Larson

Linda Larson
Rapid City - Project Manager

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils Air filters)
Lab ID: R08010193-002
Client Sample ID: AMS-01

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 20:59/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	5140	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	86.1	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	2.5	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	0.9	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	1.6	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils Air filters)
Lab ID: R08010193-003
Client Sample ID: AMS-02

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 21:05/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	2610	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	61.4	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	1.3	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	0.6	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	3.5	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.2	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08010193-004
Client Sample ID: AMS-03

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 21:12/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1690	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	49.4	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	2.3	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	0.9	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	2.6	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils Air filters)
Lab ID: R08010193-005
Client Sample ID: AMS-04

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 21:18/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	2830	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	63.8	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	1.9	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	0.8	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	2.6	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions: RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils Air filters)
Lab ID: R08010193-006
Client Sample ID: AMS-05

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/01/08 21:14/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	3200	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	67.9	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	7.7	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	1.5	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	4.0	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.5	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions: RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08010193-007
Client Sample ID: AMS-06

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 21:25/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	2940	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	65.1	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	4.8	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	1.2	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	3.3	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.4	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08010193-008
Client Sample ID: AMS-07

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 21:32/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	4010	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	76.0	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	5.8	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	1.3	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	3.3	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	1.5	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08010193-009
Client Sample ID: AMS-08

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 21:38/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	21.9	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	10.4	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	1.6	pCi/Filter		0.2		1	E903.0	02/06/08 12:12/eli-c
Radium 226 precision (±)	0.7	pCi/Filter				1	E903.0	02/06/08 12:12/eli-c
Thorium 230	1.4	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	0.9	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08010193-001
Client Sample ID: BKG

Report Date: 02/12/08
Collection Date: 10/09/07
Date Received: 01/17/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/filter	D	0.03		10	SW6020	02/05/08 20:52/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	2550	pCi/Filter		1.0		1	E909.0M	02/01/08 08:30/eli-c
Lead 210 precision (±)	60.6	pCi/Filter				1	E909.0M	02/01/08 08:30/eli-c
Radium 226	3.2	pCi/Filter		0.2		1	E903.0	02/06/08 11:08/eli-c
Radium 226 precision (±)	1.0	pCi/Filter				1	E903.0	02/06/08 11:08/eli-c
Thorium 230	1.3	pCi/Filter		0.2		1	E907.0	01/28/08 15:30/eli-c
Thorium 230 precision (±)	0.8	pCi/Filter				1	E907.0	01/28/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix interference
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)

Report Date: 02/12/08
Work Order: R08010193

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Batch: C_17568	
Sample ID: MB-17568	Method Blank				Run: SUB-C96493			02/01/08 15:45	
Uranium	2E-05	mg/L	1E-05						
Sample ID: LCS1-17568	Laboratory Control Sample				Run: SUB-C96493			02/01/08 15:49	
Uranium	0.0487	mg/L	0.00030	97	80	120			
Sample ID: C08010900-005BMS4	Post Digestion Spike				Run: SUB-C96493			02/01/08 16:59	
Uranium	0.0583	mg/L	0.00030	107	70	130			
Sample ID: C08010900-005BMSD4	Post Digestion Spike Duplicate				Run: SUB-C96493			02/01/08 17:03	
Uranium	0.0582	mg/L	0.00030	107	70	130	0.2	20	
Method: E903.0								Batch: C_17568	
Sample ID: R08010193-001A	Sample Duplicate				Run: SUB-C96642			02/06/08 11:08	
Radium 226	1.66	pCi/Filter	0.20				65	78.7	
Sample ID: R08010193-008A	Sample Matrix Spike				Run: SUB-C96642			02/06/08 12:12	
Radium 226	31.5	pCi/Filter	0.20	41	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD for the Duplicate are acceptable, the low response is considered to be matrix related. The batch is approved									
Sample ID: LCS-17568	Laboratory Control Sample				Run: SUB-C96642			02/06/08 12:12	
Radium 226	14.5	pCi/Filter	0.20	114	70	130			
Sample ID: MB-17568	Method Blank				Run: SUB-C96642			02/06/08 12:12	
Radium 226	ND	pCi/Filter	0.2						
Method: E907.0								Batch: C_17568	
Sample ID: R08010193-009A	Sample Matrix Spike				Run: SUB-C96487			01/28/08 15:30	
Thorium 230	42.6	pCi/Filter	0.20	88	70	130			
Sample ID: R08010193-009A	Sample Matrix Spike Duplicate				Run: SUB-C96487			01/28/08 15:30	
Thorium 230	44.7	pCi/Filter	0.20	93	70	130	4.8	30	
Sample ID: LCS-17568	Laboratory Control Sample				Run: SUB-C96487			01/28/08 15:30	
Thorium 230	4.60	pCi/Filter	0.20	94	70	130			
Sample ID: MB-17568	Method Blank				Run: SUB-C96487			01/28/08 15:30	
Thorium 230	ND	pCi/Filter	0.2						

Qualifiers:

RL - Analyte reporting limit
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits

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QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)

Report Date: 02/12/08
Work Order: R08010193

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0M									Batch C_R96680
Sample ID: R08010193-003A	Sample Matrix Spike				Run: SUB-C96680			02/01/08 08:30	
Lead 210	3540	pCi/Filter	1.0	78	70	130			
Sample ID: R08010193-003A	Sample Matrix Spike Duplicate				Run: SUB-C96680			02/01/08 08:30	
Lead 210	3490	pCi/Filter	1.0	74	70	130	1.3	30	
Sample ID: MB-R96680	Method Blank				Run: SUB-C96680			02/01/08 08:30	
Lead 210	ND	pCi/Filter	1						
Sample ID: LCS-R96680	Laboratory Control Sample				Run: SUB-C96680			02/01/08 08:30	
Lead 210	112	pCi/Filter	1.0	94	70	130			
Method: SW6020									Batch C_17568
Sample ID: MB-17568	Method Blank				Run: SUB-C96602			02/05/08 19:17	
Uranium	ND	mg/filter	0.003						
Sample ID: LCS1-17568	Laboratory Control Sample				Run: SUB-C96602			02/05/08 20:39	
Uranium	0.0509	mg/kg	0.015	102	75	125			
Sample ID: R08010193-009A	Sample Matrix Spike				Run: SUB-C96602			02/05/08 22:05	
Uranium	0.545	mg/filter	0.030	109	75	125			
Sample ID: R08010193-009A	Sample Matrix Spike Duplicate				Run: SUB-C96602			02/05/08 22:12	
Uranium	0.558	mg/filter	0.030	112	75	125	2.4	20	

Qualifiers:

RL - Analyte reporting limit

ND - Not detected at the reporting limit

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ANALYTICAL SUMMARY REPORT

August 14, 2008

Michael Schierman
Environmental Restoration Group Inc
8809 Washington St NE
Albuquerque, NM 87113

Workorder No.: R08060209

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc. received the following 9 samples from Environmental Restoration Group Inc on 6/11/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08060209-001	AMS-01	03/08/08 0:00	06/11/08	Filter	Composite Fee Metals, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08060209-002	AMS-02	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-003	AMS-03	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-004	AMS-04	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-005	AMS-05	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-006	AMS-06	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-007	AMS-07	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-008	AMS-08	03/08/08 0:00	06/11/08	Filter	Same As Above
R08060209-009	AMS-BKG	03/08/08 0:00	06/11/08	Filter	Same As Above

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By: Linda Le

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-008
Client Sample ID: AMS-08

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0094	mg/filter		0.00030		5	SW6020	06/28/08 19:59/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	11.6	pCi/Filter	U			1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	14.8	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	0.5	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	0.8	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	2.5	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	1.3	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.5	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-001
Client Sample ID: AMS-01

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0072	mg/filter		0.00030		5	SW6020	06/28/08 19:31/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	2510	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	38.2	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	0.9	pCi/Filter		0.2		1	E907.0	06/30/08 21:30/eli-c
Thorium 230 precision (±)	0.9	pCi/Filter				1	E907.0	06/30/08 21:30/eli-c
Radium 226	4.6	pCi/Filter				1	E903.0	06/26/08 09:11/eli-c
Radium 226 precision (±)	1.5	pCi/Filter				1	E903.0	06/26/08 09:11/eli-c
Radium 226 MDC	1.4	pCi/Filter				1	E903.0	06/26/08 09:11/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-002
Client Sample ID: AMS-02

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0057	mg/filter		0.00030		5	SW6020	06/28/08 19:35/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1160	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	28.1	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	1.1	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.2	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	1.4	pCi/Filter				1	E903.0	06/26/08 09:11/eli-c
Radium 226 precision (±)	1.0	pCi/Filter				1	E903.0	06/26/08 09:11/eli-c
Radium 226 MDC	1.4	pCi/Filter				1	E903.0	06/26/08 09:11/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-003
Client Sample ID: AMS-03

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0036	mg/filter		0.00030		5	SW6020	06/28/08 19:39/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1200	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	28.4	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	1.7	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.3	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	0.7	pCi/Filter	U			1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	1	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.5	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-004
Client Sample ID: AMS-04

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0048	mg/filter		0.00030		5	SW6020	06/28/08 19:43/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1040	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	27.1	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	0.8	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	-0.9	pCi/Filter	U			1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	0.6	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.2	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-005
Client Sample ID: AMS-05

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0096	mg/filter		0.00030		5	SW6020	06/28/08 19:47/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1270	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	29.1	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	1.1	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	3.9	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	1.4	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.4	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-006
Client Sample ID: AMS-06

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0067	mg/filter		0.00030		5	SW6020	06/28/08 19:51/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	775	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	24.5	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	1.7	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.3	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	2.5	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	1.2	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.4	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-007
Client Sample ID: AMS-07

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0071	mg/filter		0.00030		5	SW6020	06/28/08 19:55/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1030	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	26.9	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	1.4	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	0.6	pCi/Filter	U			1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	0.8	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.3	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060209-009
Client Sample ID: AMS-BKG

Report Date: 08/14/08
Collection Date: 03/08/08
Date Received: 06/11/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0097	mg/filter		0.00030		5	SW6020	06/28/08 20:03/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1040	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 MDC	24.6	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Lead 210 precision (±)	27.1	pCi/Filter				1	E909.0M	06/30/08 09:40/eli-c
Thorium 230	3.0	pCi/Filter		0.2		1	E907.0	07/01/08 13:03/eli-c
Thorium 230 precision (±)	1.4	pCi/Filter				1	E907.0	07/01/08 13:03/eli-c
Radium 226	1.8	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 precision (±)	1.1	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c
Radium 226 MDC	1.5	pCi/Filter				1	E903.0	06/26/08 11:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name: Environmental Restoration Group	Project Name, PWS, Permit, Etc.: Dewey - Burdock	Sample Origin State: South Dakota	EPA/State Compliance: Yes ☐ No ☒
Report Mail Address: 8809 Washington St NE Suite 150 Albuquerque NM 87113	Contact Name: Michael Schierman Phone/Fax: 505-298-4224	Email: mikeschierman@cfgolf.com	Sampler: (Please Print) NA
Invoice Address: Same as above	Invoice Contact & Phone: Michael Schierman	Purchase Order:	Quote/Bottle Order: NA

Special Report/Formats – ELI must be notified prior to sample submittal for the following:
Please Send EDD to Cory Fineman @ RESPEC

☐ DW ☐ A2LA
☐ GSA ☑ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

RUSH — Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: MJS
Cooler ID(s):
Receipt Temp: _____ °C
On Ice: Yes No
Custody Seal Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegetation Bioassay Other	ANALYSIS REQUESTED: Natural Uranium	Ra-226	Th-230	Pb-210	SEE ATTACHED	Normal Turnaround (TAT)	
1	AMS-Bkg	9/28/07 10/02/07	NA	O		X	X	X	X		X	Please composite all filters
2	AMS-01											
3	AMS-02											
4	AMS-03											
5	AMS-04											
6	AMS-05											
7	AMS-06											
8	AMS-07											
9												
10												

LABORATORY USE ONLY
B803221-001A
002A
003A
004A
005A
006A
007A
008A

Custody Record MUST be Signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Michael Schierman	3/18/08	Michael Schierman	Steve Froiland	3-19-08 1300	Steve Froiland
	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
				Received by Laboratory:	Date/Time	Signature

Sample Disposal: Return to Client _____ Lab Disposal _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-001
Client Sample ID: AMS-BKG

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0065	mg/filter		0.00030		1	SW6020	08/13/08 01:25/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1840	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	1.2	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	1.2	pCi/Filter				1	E903.0	08/26/08 16:58/eli-c
Radium 226 precision (±)	0.8	pCi/Filter				1	E903.0	08/26/08 16:58/eli-c
Radium 226 MDC	1.2	pCi/Filter				1	E903.0	08/26/08 16:58/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-002
Client Sample ID: AMS-01

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0081	mg/filter		0.00030		1	SW6020	08/13/08 01:29/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	2820	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	65.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	2.7	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	2.8	pCi/Filter				1	E903.0	08/26/08 16:58/eli-c
Radium 226 precision (±)	1.0	pCi/Filter				1	E903.0	08/26/08 16:58/eli-c
Radium 226 MDC	1.1	pCi/Filter				1	E903.0	08/26/08 16:58/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-003
Client Sample ID: AMS-02

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0043	mg/filter		0.00030		1	SW6020	08/13/08 01:33/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1210	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	49.5	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	1.0	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	0.8	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	0.3	pCi/Filter	U			1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	0.7	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-004
Client Sample ID: AMS-03

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0071	mg/filter		0.00030		1	SW6020	08/13/08 01:53/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1110	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	48.4	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	2.2	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	2.2	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.2	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 2821 Plant St * Rapid City, SD 57702
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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-005
Client Sample ID: AMS-04

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0073	mg/filter		0.00030		5	SW6020	08/13/08 01:57/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1440	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	52.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	1.9	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	2.5	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-006
Client Sample ID: AMS-05

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0086	mg/filter		0.00030		5	SW6020	08/13/08 02:02/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1510	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	52.7	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	2.9	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	2.8	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	1.0	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-007
Client Sample ID: AMS-06

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0067	mg/filter		0.00030		5	SW6020	08/13/08 02:06/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1390	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	51.5	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	1.7	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	0.2	pCi/Filter	U			1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	0.7	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.2	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-008
Client Sample ID: AMS-07

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0080	mg/filter		0.00030		5	SW6020	08/13/08 02:10/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	1960	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	57.3	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	2.2	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	1.0	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	0.8	pCi/Filter	U			1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	0.8	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080024-009
Client Sample ID: AMS-08

Report Date: 09/30/08
Collection Date: 07/09/08
Date Received: 08/04/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0034	mg/filter		0.00030		1	SW6020	08/13/08 02:14/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	23.9	pCi/Filter	U			1	E909.0M	08/22/08 10:14/eli-c
Lead 210 MDC	56.1	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Lead 210 precision (±)	33.8	pCi/Filter				1	E909.0M	08/22/08 10:14/eli-c
Thorium 230	1.0	pCi/Filter		0.2		1	E907.0	08/22/08 10:30/eli-c
Thorium 230 precision (±)	0.7	pCi/Filter				1	E907.0	08/22/08 10:30/eli-c
Radium 226	0.9	pCi/Filter	U			1	E903.0	08/27/08 09:21/eli-c
Radium 226 precision (±)	0.8	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c
Radium 226 MDC	1.1	pCi/Filter				1	E903.0	08/27/08 09:21/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-001
Client Sample ID: AMS-1

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.00056	mg/filter		0.00030		1	SW6020	09/30/08 20:13/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	497	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	25.2	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	0.8	pCi/Filter	U	0.2		1	E907.0	10/12/08 13:45/eli-c
Thorium 230 precision (±)	1.1	pCi/Filter				1	E907.0	10/12/08 13:45/eli-c
Radium 226	-1	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.2	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.6	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-002
Client Sample ID: AMS-2

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.00078	mg/filter		0.00030		1	SW6020	09/30/08 20:17/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	752	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	27.9	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	0.5	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.2	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	-2	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.1	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.7	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-003
Client Sample ID: AMS-3

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.00056	mg/filter		0.00030		1	SW6020	09/30/08 20:21/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	579	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	26.1	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	1.4	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.3	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	0.3	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.4	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.4	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-004
Client Sample ID: AMS-4

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0016	mg/filter		0.00030		1	SW6020	09/30/08 20:25/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	650	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	26.9	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	1.8	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.3	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	0.2	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.5	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.6	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-005
Client Sample ID: AMS-5

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0034	mg/filter		0.00030		1	SW6020	09/30/08 20:29/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	552	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	25.7	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	3.2	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.3	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	1.5	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.6	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.4	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-006
Client Sample ID: AMS-6

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0015	mg/filter		0.00030		1	SW6020	09/30/08 20:33/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	998	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	30.4	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	1.5	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.3	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	0.8	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.6	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.5	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-007
Client Sample ID: AMS-7

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0016	mg/filter		0.00030		1	SW6020	09/30/08 20:37/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	696	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	27.4	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	1.4	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.3	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	1.2	pCi/Filter	U			1	E903.0	10/07/08 17:20/eli-c
Radium 226 precision (±)	1.6	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c
Radium 226 MDC	2.5	pCi/Filter				1	E903.0	10/07/08 17:20/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08090099-008
Client Sample ID: AMS-BKG

Report Date: 10/16/08
Collection Date: 08/13/08
Date Received: 09/08/08
Matrix: FILTER

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
Uranium	0.0011	mg/filter		0.00030		1	SW6020	09/30/08 20:41/eli-c
RADIONUCLIDES - TOTAL								
Lead 210	606	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 MDC	31.3	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Lead 210 precision (±)	26.4	pCi/Filter				1	E909.0M	10/01/08 08:40/eli-c
Thorium 230	1.7	pCi/Filter		0.2		1	E907.0	09/30/08 16:00/eli-c
Thorium 230 precision (±)	0.3	pCi/Filter				1	E907.0	09/30/08 16:00/eli-c
Radium 226	-0.4	pCi/Filter	U			1	E903.0	10/07/08 18:55/eli-c
Radium 226 precision (±)	1.1	pCi/Filter				1	E903.0	10/07/08 18:55/eli-c
Radium 226 MDC	2.0	pCi/Filter				1	E903.0	10/07/08 18:55/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ANALYTICAL SUMMARY REPORT

December 14, 2007

Michael Schierrman
Environmental Restoration Group Inc
8809 Washington St NE
Albuquerque, NM 87113

Workorder No.. R07100004

Project Name: Dewey Burdock Baseline Soil Sampling

Energy Laboratories Inc. received the following 118 samples from Environmental Restoration Group Inc on 9/29/2007 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R07100004-001	SMA-B01	09/24/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-002	SMA-B01Dup	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-003	SMA-B03	09/24/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-004	SMA-B04	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-005	SMA-B07	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-006	SMA-B09	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-007	SMA-B09Dup	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-008	SMA-B10	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-009	SMA-B11	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-010	SMA-B13	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-011	SMA-B14	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-012	SMA-B14Dup	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-013	SMA-B15	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-014	SMA-B16	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-015	SMA-B17	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-016	SMA-B18	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-017	SMA-B18Dup	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-018	SMA-B19	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-019	SMA-B20	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-020	SMA-B21	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-021	SMA-B22	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-022	SMA-B23	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-023	SMA-B23Dup	09/24/07 0:00	09/29/07	Soil	Same As Above

R07100004-024	SMA-B24	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-025	SMA-B25	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-026	SMA-B26	09/28/07 0:00	09/29/07	Soil	Same As Above
R07100004-027	SMA-B27	09/28/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-028	SMA-B28	09/28/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-029	SMA-B29	09/28/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-030	SMA-B30	09/28/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-031	MPA-R01	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-032	MPA-R02	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-033	MPA-R03	09/24/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-034	MPA-R04	09/24/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-035	MPA-R04Dup	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-036	MPA-R05	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-037	NEA-R01	09/24/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-038	NEA-R02	09/24/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-039	NEA-R03	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-040	NEA-R04	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-041	NEA-R04Dup	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-042	NEA-R05	09/24/07 0:00	09/29/07	Soil	Same As Above
R07100004-043	AMS-1	09/27/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-044	AMS-2	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-045	AMS-3	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-046	AMS-4	09/27/07 0:00	09/29/07	Soil	Same As Above

R07100004-047	AMS-5	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-048	AMS-6	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-049	AMS-7	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-050	AMS-BKG	09/27/07 0:00	09/29/07	Soil	Same As Above
R07100004-051	MPA-B01	09/25/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-052	MPA-B02	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-053	MPA-B03	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-054	RFA-B01A	09/26/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-055	RFA-B01B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-056	RFA-B01C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-057	RFA-B01ADup	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-058	RFA-B01BDup	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-059	RFA-B01CDup	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-060	RFA-B02A	09/26/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-061	RFA-B02B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-062	RFA-B02C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-063	RFA-B03	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-064	RFA-B04	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-065	RFA-B06	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-066	RFA-B07	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-067	RFA-B08	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-068	RFA-B08Dup	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-069	RFA-B09	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-070	RFA-B10	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-071	RFA-B11	09/25/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-072	RFA-B12	09/25/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-073	RFA-B13A	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-074	RFA-B13B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-075	RFA-B13C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-076	RFA-B14	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-077	RFA-B15A	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-078	RFA-B15B	09/26/07 0:00	09/29/07	Soil	Same As Above

R07100004-079	RFA-B15C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-080	RFA-B16	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-081	RFA-B17A	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-082	RFA-B17B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-083	RFA-B17C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-084	RFA-B18	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-085	RFA-B19	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-086	RFA-B20	09/25/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-087	RFA-B21A	09/26/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-088	RFA-B21B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-089	RFA-B21C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-090	RFA-B22	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-091	RFA-B23	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-092	RFA-B24	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-093	RFA-B25	09/25/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-094	RFA-B26	09/25/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-095	RFA-B27	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-096	RFA-B28	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-097	RFA-B28Dup	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-098	RFA-B29	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-099	RFA-B30A	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-100	RFA-B30B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-101	RFA-B30C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-102	RFA-B31	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-103	RFA-B33	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-104	RFA-B34	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-105	RFA-B35	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-106	RFA-B36A	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-107	RFA-B36B	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-108	RFA-B36C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-109	RFA-B37A	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-110	RFA-B37B	09/26/07 0:00	09/29/07	Soil	Same As Above

R07100004-111	RFA-B37C	09/26/07 0:00	09/29/07	Soil	Same As Above
R07100004-112	RFA-B38	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-113	RFA-B39	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-114	RFA-B40	09/25/07 0:00	09/29/07	Soil	Metals, Total Digestion, Total Metals For Radio Chemistry Gross Gamma Lead 210 Radium 226 Thorium, Isotopic
R07100004-115	RFA-B41	09/25/07 0:00	09/29/07	Soil	Gross Gamma
R07100004-116	RFA-B43	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-117	RFA-B44	09/25/07 0:00	09/29/07	Soil	Same As Above
R07100004-118	RFA-B45	09/25/07 0:00	09/29/07	Soil	Same As Above

Thank you for submitting your samples to Energy Laboratories, Inc. - Rapid City. The following pages contain the results of the sample tests listed above and applicable analytical notes.

The samples were analyzed in accordance with the methods specified on the analytical reports. All analyses were accompanied by appropriate quality control samples throughout the test. Where applicable, the results of these quality control samples will be included, following your analytical data.

If you have any questions regarding the analyses performed or the results of these analyses, please contact Energy Laboratories Inc. - Rapid City at (605) 342-1225, (888) 672-1225 or Rapid_City@energylab.com.

Report Approved By:_____

Linda Larson

Rapid City - Project Manager

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling
Workorder: R07100004

Report Date: 12/14/07
Date Received: 09/29/07

	Analysis	Uranium, Activity	Pb210	Pb210 ±	Ra226 Chemical	Ra226 ± Chemical	Th230	Th230 ±	Ra226 Gamma	Ra226 ± Gamma
	Units	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry
Sample ID	Client Sample ID	Results	Results	Results	Results	Results	Results	Results	Results	Results
R07100004-001	SMA-B01	1.2E-06	6.0E-07	1.0E-07	9.0E-07	2.0E-07	5.0E-07	1.0E-07	9.0E-07	2.0E-07
R07100004-002	SMA-B01Dup	1.5E-06	2.0E-06	2.0E-07	1.0E-06	2.0E-07	6.0E-07	1.0E-07	1.4E-06	3.0E-07
R07100004-003	SMA-B03								1.5E-06	2.0E-07
R07100004-004	SMA-B04								1.0E-06	2.0E-07
R07100004-005	SMA-B07								3.2E-06	3.0E-07
R07100004-006	SMA-B09								1.2E-06	2.0E-07
R07100004-007	SMA-B09Dup								1.7E-06	2.0E-07
R07100004-008	SMA-B10								1.4E-06	2.0E-07
R07100004-009	SMA-B11								2.3E-06	3.0E-07
R07100004-010	SMA-B13								1.7E-06	3.0E-07
R07100004-011	SMA-B14								1.4E-06	3.0E-07
R07100004-012	SMA-B14Dup								1.6E-06	2.0E-07
R07100004-013	SMA-B15								8.0E-07	2.0E-07
R07100004-014	SMA-B16								9.0E-07	2.0E-07
R07100004-015	SMA-B17								1.0E-06	2.0E-07
R07100004-016	SMA-B18								5.0E-07	1.0E-07
R07100004-017	SMA-B18Dup								4.0E-07	1.0E-07
R07100004-018	SMA-B19								1.2E-06	2.0E-07
R07100004-019	SMA-B20								9.0E-07	2.0E-07
R07100004-020	SMA-B21								1.4E-06	2.0E-07
R07100004-021	SMA-B22								8.0E-07	2.0E-07
R07100004-022	SMA-B23								2.7E-06	3.0E-07
R07100004-023	SMA-B23Dup								2.8E-06	3.0E-07
R07100004-024	SMA-B24								1.3E-06	2.0E-07
R07100004-025	SMA-B25								1.0E-06	2.0E-07
R07100004-026	SMA-B26								1.1E-05	5.0E-07
R07100004-027	SMA-B27	6.7E-05	3.0E-05	8.0E-07	3.0E-05	1.0E-06	3.0E-05	8.0E-07	4.0E-05	1.1E-06
R07100004-028	SMA-B28								6.4E-06	4.0E-07
R07100004-029	SMA-B29	1.6E-05	2.0E-05	7.0E-07	2.0E-05	8.0E-07	2.0E-05	6.0E-07	2.9E-05	9.0E-07
R07100004-030	SMA-B30								3.4E-05	9.0E-07
R07100004-031	MPA-R01								1.4E-06	2.0E-07
R07100004-032	MPA-R02								2.6E-06	3.0E-07
R07100004-033	MPA-R03	7.5E-07	7.0E-07	1.0E-07	8.0E-07	2.0E-07	4.0E-07	1.0E-07	1.1E-06	2.0E-07
R07100004-034	MPA-R04								9.0E-07	2.0E-07
R07100004-035	MPA-R04Dup								8.0E-07	2.0E-07
R07100004-036	MPA-R05								1.2E-06	2.0E-07
R07100004-037	NEA-R01	9.1E-07	7.0E-07	2.0E-07	9.0E-07	2.0E-07	6.0E-07	1.0E-07	1.1E-06	2.0E-07
R07100004-038	NEA-R02								1.3E-06	2.0E-07
R07100004-039	NEA-R03								2.2E-06	3.0E-07
R07100004-040	NEA-R04								2.3E-06	3.0E-07
R07100004-041	NEA-R04Dup								2.5E-06	3.0E-07

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling
Workorder: R07100004

Report Date: 12/14/07
Date Received: 09/29/07

	Analysis	Uranium, Activity	Pb210	Pb210 ±	Ra226 Chemical	Ra226 ± Chemical	Th230	Th230 ±	Ra226 Gamma	Ra226 ± Gamma
	Units	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry
Sample ID	Client Sample ID	Results	Results	Results	Results	Results	Results	Results	Results	Results
R07100004-042	NEA-R05								2.8E-06	3.0E-07
R07100004-043	AMS-1	9.6E-07	2.0E-06	3.0E-07	7.0E-07	2.0E-07	4.0E-07	1.0E-07	1.4E-06	2.0E-07
R07100004-044	AMS-2	9.5E-07	3.0E-06	3.0E-07	1.0E-06	2.0E-07	5.0E-07	1.0E-07	1.1E-06	2.0E-07
R07100004-045	AMS-3	8.2E-07	2.0E-06	2.0E-07	1.0E-06	2.0E-07	4.0E-07	1.0E-07	1.5E-06	2.0E-07
R07100004-046	AMS-4	1.4E-06	2.0E-06	2.0E-07	7.0E-07	1.0E-07	8.0E-07	2.0E-07	1.5E-06	3.0E-07
R07100004-047	AMS-5	6.8E-07	2.0E-06	2.0E-07	8.0E-07	2.0E-07	6.0E-07	1.0E-07	1.3E-06	3.0E-07
R07100004-048	AMS-6	5.5E-07	1.0E-06	2.0E-07	3.0E-07	1.0E-07	4.0E-07	1.0E-07	8.0E-07	2.0E-07
R07100004-049	AMS-7	5.8E-07	2.0E-06	2.0E-07	3.0E-07	1.0E-07	3.0E-07	8.0E-08	1.1E-06	2.0E-07
R07100004-050	AMS-BKG	1.9E-06	2.0E-06	2.0E-07	1.0E-06	2.0E-07	9.0E-07	1.0E-07	2.4E-06	4.0E-07
R07100004-051	MPA-B01								1.4E-06	3.0E-07
R07100004-052	MPA-B02								1.1E-06	2.0E-07
R07100004-053	MPA-B03								1.3E-06	3.0E-07
R07100004-054	RFA-B01A	8.7E-07	1.0E-06	2.0E-07	7.0E-07	1.0E-07	7.0E-07	1.0E-07	1.2E-06	2.0E-07
R07100004-055	RFA-B01B	1.1E-06	2.0E-06	2.0E-07	1.0E-06	2.0E-07	9.0E-07	2.0E-07	1.7E-06	2.0E-07
R07100004-056	RFA-B01C	1.5E-06	6.0E-07	1.0E-07	1.0E-06	2.0E-07	8.0E-07	1.0E-07	1.2E-06	2.0E-07
R07100004-057	RFA-B01ADup	9.0E-07	8.0E-07	1.0E-07	1.0E-06	2.0E-07	7.0E-07	1.0E-07	1.1E-06	2.0E-07
R07100004-058	RFA-B01BDup	9.9E-07	9.0E-07	2.0E-07	1.0E-06	2.0E-07	9.0E-07	2.0E-07	1.5E-06	2.0E-07
R07100004-059	RFA-B01CDup	1.3E-06	1.0E-06	2.0E-07	1.0E-06	2.0E-07	1.0E-06	2.0E-07	1.7E-06	3.0E-07
R07100004-060	RFA-B02A								1.1E-06	2.0E-07
R07100004-061	RFA-B02B								9.0E-07	2.0E-07
R07100004-062	RFA-B02C								9.0E-07	2.0E-07
R07100004-063	RFA-B03								1.5E-06	3.0E-07
R07100004-064	RFA-B04								1.1E-06	2.0E-07
R07100004-065	RFA-B06								1.7E-06	2.0E-07
R07100004-066	RFA-B07								9.0E-07	2.0E-07
R07100004-067	RFA-B08								1.1E-06	2.0E-07
R07100004-068	RFA-B08Dup								1.1E-06	2.0E-07
R07100004-069	RFA-B09								1.0E-06	2.0E-07
R07100004-070	RFA-B10								1.8E-06	3.0E-07
R07100004-071	RFA-B11	8.8E-07	1.0E-06	2.0E-07	9.0E-07	2.0E-07	5.0E-07	1.0E-07	1.0E-06	2.0E-07
R07100004-072	RFA-B12								1.8E-06	3.0E-07
R07100004-073	RFA-B13A								1.6E-06	2.0E-07
R07100004-074	RFA-B13B								1.8E-06	2.0E-07
R07100004-075	RFA-B13C								1.6E-06	2.0E-07
R07100004-076	RFA-B14								1.7E-06	3.0E-07
R07100004-077	RFA-B15A								1.4E-06	3.0E-07
R07100004-078	RFA-B15B								1.5E-06	2.0E-07
R07100004-079	RFA-B15C								1.5E-06	3.0E-07
R07100004-080	RFA-B16								9.0E-07	2.0E-07
R07100004-081	RFA-B17A								2.0E-06	3.0E-07
R07100004-082	RFA-B17B								2.2E-06	3.0E-07

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling
Workorder: R07100004

Report Date: 12/14/07
Date Received: 09/29/07

	Analysis	Uranium, Activity	Pb210	Pb210 ±	Ra226 Chemical	Ra226 ± Chemical	Th230	Th230 ±	Ra226 Gamma	Ra226 ± Gamma
	Units	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry	uCi/g-dry
Sample ID	Client Sample ID	Results	Results	Results	Results	Results	Results	Results	Results	Results
R07100004-083	RFA-B17C								2.5E-06	3.0E-07
R07100004-084	RFA-B18								1.7E-06	3.0E-07
R07100004-085	RFA-B19								1.2E-06	2.0E-07
R07100004-086	RFA-B20	8.8E-07	1.0E-06	2.0E-07	6.0E-07	1.0E-07	5.0E-07	1.0E-07	1.3E-06	3.0E-07
R07100004-087	RFA-B21A								5.3E-06	4.0E-07
R07100004-088	RFA-B21B								1.3E-06	2.0E-07
R07100004-089	RFA-B21C								1.2E-06	2.0E-07
R07100004-090	RFA-B22								1.5E-06	2.0E-07
R07100004-091	RFA-B23								3.6E-06	4.0E-07
R07100004-092	RFA-B24								1.3E-06	2.0E-07
R07100004-093	RFA-B25	6.7E-07	1.0E-06	2.0E-07	6.0E-07	1.0E-07	4.0E-07	1.0E-07	1.2E-06	2.0E-07
R07100004-094	RFA-B26								1.1E-06	2.0E-07
R07100004-095	RFA-B27								1.5E-06	2.0E-07
R07100004-096	RFA-B28								2.4E-06	3.0E-07
R07100004-097	RFA-B28Dup								1.8E-06	3.0E-07
R07100004-098	RFA-B29								1.7E-06	3.0E-07
R07100004-099	RFA-B30A								1.8E-06	2.0E-07
R07100004-100	RFA-B30B								2.1E-06	3.0E-07
R07100004-101	RFA-B30C								1.7E-06	3.0E-07
R07100004-102	RFA-B31								1.3E-06	2.0E-07
R07100004-103	RFA-B33								9.0E-07	2.0E-07
R07100004-104	RFA-B34								1.0E-06	2.0E-07
R07100004-105	RFA-B35								1.2E-06	2.0E-07
R07100004-106	RFA-B36A								1.0E-06	2.0E-07
R07100004-107	RFA-B36B								1.1E-06	2.0E-07
R07100004-108	RFA-B36C								1.0E-06	2.0E-07
R07100004-109	RFA-B37A								9.0E-07	2.0E-07
R07100004-110	RFA-B37B								7.0E-07	2.0E-07
R07100004-111	RFA-B37C								1.1E-06	2.0E-07
R07100004-112	RFA-B38								1.0E-06	2.0E-07
R07100004-113	RFA-B39								1.1E-06	2.0E-07
R07100004-114	RFA-B40	5.6E-07	1.0E-06	2.0E-07	6.0E-07	1.0E-07	3.0E-07	1.0E-07	1.1E-06	2.0E-07
R07100004-115	RFA-B41								1.2E-06	2.0E-07
R07100004-116	RFA-B43								1.7E-06	3.0E-07
R07100004-117	RFA-B44								1.4E-06	2.0E-07
R07100004-118	RFA-B45								1.6E-06	3.0E-07

QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling

Report Date: 12/14/07
Work Order: R07100004

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E901.1									Batch: C_16378
Sample ID: MB-R92021	Method Blank				Run: SUB-C92021				10/22/07 12:00
Bismuth 214	ND	pCi/g-dry	0.05						
Radium 226	ND	pCi/g-dry	0.05						
Sample ID: LCS-R92021	Laboratory Control Sample				Run: SUB-C92021				10/22/07 12:00
Bismuth 214	50.3	pCi/g-dry	0.10	106	70	130			
Sample ID: R07100004-103A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	1.00	pCi/g-dry	0.10				11		30
Radium 226 precision (±)	0.200	pCi/g-dry							
Sample ID: R07100004-105A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	1.40	pCi/g-dry	0.10				15		30
Radium 226 precision (±)	0.200	pCi/g-dry							
Sample ID: R07100004-107A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	0.900	pCi/g-dry	0 10				20		30
Radium 226 precision (±)	0.200	pCi/g-dry							
Sample ID: R07100004-109A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	0.800	pCi/g-dry	0.10				12		30
Radium 226 precision (±)	0.200	pCi/g-dry							
Sample ID: R07100004-111A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	1 00	pCi/g-dry	0 10				9.5		30
Radium 226 precision (±)	0.200	pCi/g-dry							
Sample ID: R07100004-113A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	1 10	pCi/g-dry	0.10				0.0		30
Radium 226 precision (±)	0.200	pCi/g-dry							
Sample ID: R07100004-115A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	1.20	pCi/g-dry	0.10				0.0		30
Radium 226 precision (±)	0.300	pCi/g-dry							
Sample ID: R07100004-117A	Sample Duplicate				Run: SUB-C94009				11/30/07 12:35
Radium 226	1.30	pCi/g-dry	0.10				7.4		30
Radium 226 precision (±)	0.200	pCi/g-dry							

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling

Report Date: 12/14/07
Work Order: R07100004

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: C_16379
Sample ID: R07100004-047A	Sample Matrix Spike				Run: SUB-C91456				10/18/07 12:11
Radium 226	3.2	pCi/g-dry	0 10	75	70	130			
MSD failed and was not imported to Omega.									
Sample ID: LCS-16379	Laboratory Control Sample				Run: SUB-C91456				10/18/07 12:11
Radium 226	0.059	pCi/g-dry	0.10	92	70	130			
Sample ID: MB-16379	Method Blank				Run: SUB-C91456				10/18/07 12:11
Radium 226	ND	pCi/g-dry	0.0002						
Method: E903.0									Batch: C_16398
Sample ID: LCS-16398	Laboratory Control Sample				Run: SUB-C91630				10/22/07 12:54
Radium 226	34	pCi/g-dry	0.10	108	70	130			
Sample ID: R07100004-086A	Sample Matrix Spike				Run: SUB-C91980				10/29/07 13:32
Radium 226	3.7	pCi/g-dry	0.50	101	70	130			
Sample ID: R07100004-086A	Sample Matrix Spike Duplicate				Run: SUB-C91980				10/29/07 13:32
Radium 226	3.7	pCi/g-dry	0.50	98	70	130	1.6	27.5	
Method: E907.0									Batch: C_16379
Sample ID: R07100004-047A	Sample Matrix Spike				Run: SUB-C91536				10/09/07 15:00
Thorium 230	2.97	pCi/g-dry	0.10	103	70	130			
Sample ID: LCS-16379	Laboratory Control Sample				Run: SUB-C91536				10/09/07 15:00
Thorium 230	5.20	pCi/g-dry	0.10	106	70	130			
Sample ID: MB-16379	Method Blank				Run: SUB-C91536				10/09/07 15:00
Thorium 230	ND	pCi/g-dry	0.0002						
Method: E907.0									Batch: C_16398
Sample ID: R07100004-048A	Sample Matrix Spike				Run: SUB-C91708				10/18/07 00:00
Thorium 230	3.19	pCi/g-dry	0 10	98	70	130			
Sample ID: R07100004-048A	Sample Matrix Spike Duplicate				Run: SUB-C91708				10/18/07 00:00
Thorium 230	3.22	pCi/g-dry	0 10	100	70	130	1.1	30	
Sample ID: LCS-R91708	Laboratory Control Sample				Run: SUB-C91708				10/18/07 00:00
Thorium 230	5.50	pCi/g-dry	0.10	93	70	130			
Sample ID: MB-R91708	Method Blank				Run: SUB-C91708				10/18/07 00:00
Thorium 230	ND	pCi/g-dry	0.01						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling

Report Date: 12/14/07
Work Order: R07100004

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E907.0									Batch: C_R91728
Sample ID: C07061601-002AMSD	Sample Matrix Spike Duplicate				Run: SUB-C91728			10/17/07 15:00	
Thorium 230	58.5	pCi/L	1.0	100	70	130	3.0	30	
Sample ID: C07070262-015AMS	Sample Matrix Spike				Run: SUB-C91728			10/17/07 15:00	
Thorium 230	63.7	pCi/L	0.20	101	70	130			
Sample ID: LCS-15162	Laboratory Control Sample				Run: SUB-C91728			10/17/07 15:00	
Thorium 230	5.40	pCi/L	0.20	92	70	130			
Sample ID: MB-R91728	Method Blank				Run: SUB-C91728			10/17/07 15:00	
Thorium 230	ND	pCi/L	0.2						
Method: E909.0M									Batch: C_16379
Sample ID: R07100004-047A	Sample Matrix Spike Duplicate				Run: SUB-C92688			11/06/07 08:10	
Lead 210	497	pCi/g-dry	0.10	123	70	130	88	30	R
Sample ID: MB-R92688	Method Blank				Run: SUB-C92688			11/06/07 08:10	
Lead 210	ND	pCi/g-dry	0.05						
Sample ID: LCS-R92688	Laboratory Control Sample				Run: SUB-C92688			11/06/07 08:10	
Lead 210	90.0	pCi/g-dry	0.10	112	70	130			
Method: E909.0M									Batch: C_16398
Sample ID: R07100004-114A	Sample Matrix Spike				Run: SUB-C92976			11/08/07 09:20	
Lead 210	485	pCi/g-dry	0.10	120	70	130			
Sample ID: R07100004-114A	Sample Matrix Spike Duplicate				Run: SUB-C92976			11/08/07 09:20	
Lead 210	458	pCi/g-dry	0.10	114	70	130	5.8	30	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
R - RPD exceeds advisory limit.

QA/QC Summary Report

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline Soil Sampling

Report Date: 12/14/07
Work Order: R07100004

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Batch: C_16405
Sample ID: MB-16405	Method Blank				Run: SUB-C91124				10/11/07 23:38
Uranium	9E-05	mg/kg-dry	6E-05						
Uranium, Activity	6E-05	pCi/g-dry	4E-05						
Sample ID: LCS1-16405	Laboratory Control Sample				Run: SUB-C91124				10/11/07 23:50
Uranium	0.0203	mg/kg-dry	0.015	101	75	125			
Uranium, Activity	0.0137	pCi/g-dry	0.010	101	75	125			
Sample ID: LCS-16405	Laboratory Control Sample				Run: SUB-C91124				10/11/07 23:54
Uranium	1.02	mg/kg-dry	0.015	101	75	125			
Uranium, Activity	0.687	pCi/g-dry	0.010	101000	75	125			S
Sample ID: R07100004-033A	Sample Matrix Spike				Run: SUB-C91124				10/12/07 00:23
Uranium	26.1	mg/kg-dry	0.029	104	75	125			
Uranium, Activity	17.7	pCi/g-dry	0.019	104	75	125			
Sample ID: R07100004-033A	Sample Matrix Spike Duplicate				Run: SUB-C91124				10/12/07 00:27
Uranium	25.8	mg/kg-dry	0.029	103	75	125	1 1	20	
Uranium, Activity	17.5	pCi/g-dry	0.019	5140	75	125	1 1	20	S
Method: SW6020									Batch: C_16406
Sample ID: MB-16406	Method Blank				Run: SUB-C91124				10/12/07 00:52
Uranium	ND	mg/kg-dry	6E-05						
Uranium, Activity	ND	pCi/g-dry	4E-05						
Sample ID: LCS1-16406	Laboratory Control Sample				Run: SUB-C91124				10/12/07 00:56
Uranium	0.0212	mg/kg-dry	0.015	106	75	125			
Uranium, Activity	0.0144	pCi/g-dry	0.010	106	75	125			
Sample ID: LCS-16406	Laboratory Control Sample				Run: SUB-C91124				10/12/07 01:00
Uranium	1 00	mg/kg-dry	0.015	100	75	125			
Uranium, Activity	0.679	pCi/g-dry	0.010	100000	75	125			S
Sample ID: R07100004-114A	Sample Matrix Spike				Run: SUB-C91124				10/12/07 02:39
Uranium	22.7	mg/kg-dry	0.026	101	75	125			
Uranium, Activity	15.4	pCi/g-dry	0.017	101	75	125			
Sample ID: R07100004-114A	Sample Matrix Spike Duplicate				Run: SUB-C91124				10/12/07 02:43
Uranium	23.1	mg/kg-dry	0.026	103	75	125	1.7	20	
Uranium, Activity	15.6	pCi/g-dry	0.017	5160	75	125	1.7	20	S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES, INC. * 2821 Plant St * Rapid City, SD 57702
Toll Free 888.672.1225 * 605.342.1225 * FAX 605.342.1397 * rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-001
Client Sample ID: LAN 001A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.4	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.3	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.8	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 precision (±)	0.09	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 MDC	0.04	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Thorium 230	1.2	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.7	mg/kg-dry		0.01		10	SW6020	08/14/08 03:14/eli-c
Uranium, Activity	1.8	pCi/g-dry		0.007		10	SW6020	08/14/08 03:14/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-002
Client Sample ID: LAN 001B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	4.6	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.3	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.8	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 MDC	0.04	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Thorium 230	1.4	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.8	mg/kg-dry		0.01		10	SW6020	08/14/08 03:22/eli-c
Uranium, Activity	1.9	pCi/g-dry		0.007		10	SW6020	08/14/08 03:22/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-003
Client Sample ID: LAN 001C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.9	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.2	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.7	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 MDC	0.04	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Thorium 230	1.6	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.7	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.8	mg/kg-dry		0.01		10	SW6020	08/14/08 03:26/eli-c
Uranium, Activity	1.9	pCi/g-dry		0.007		10	SW6020	08/14/08 03:26/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

ENERGY LABORATORIES, INC. * 2821 Plant St * Rapid City, SD 57702
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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-004
Client Sample ID: LAN 002A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	3.4	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.3	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.7	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 MDC	0.05	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Thorium 230	0.9	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.3	mg/kg-dry		0.01		10	SW6020	08/14/08 03:46/eli-c
Uranium, Activity	0.86	pCi/g-dry		0.007		10	SW6020	08/14/08 03:46/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-005
Client Sample ID: LAN 002B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.5	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.3	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.8	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	1.0	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Radium 226 MDC	0.06	pCi/g-dry				1	E903.0	08/28/08 17:12/eli-c
Thorium 230	0.4	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.1	mg/kg-dry		0.01		10	SW6020	08/14/08 03:50/eli-c
Uranium, Activity	0.75	pCi/g-dry		0.007		10	SW6020	08/14/08 03:50/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-006
Client Sample ID: LAN 002C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.1	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.2	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.6	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	1.2	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 MDC	0.06	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Thorium 230	0.3	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.2	mg/kg-dry		0.01		10	SW6020	08/14/08 03:55/eli-c
Uranium, Activity	1.5	pCi/g-dry		0.007		10	SW6020	08/14/08 03:55/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-007
Client Sample ID: LAN 003A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.8	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.2	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.6	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	1.2	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 MDC	0.05	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.2	mg/kg-dry		0.01		10	SW6020	08/14/08 03:59/eli-c
Uranium, Activity	0.78	pCi/g-dry		0.007		10	SW6020	08/14/08 03:59/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-008
Client Sample ID: LAN 003B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.4	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.3	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.8	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	1.2	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 MDC	0.05	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Thorium 230	0.8	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.7	mg/kg-dry		0.01		10	SW6020	08/14/08 04:03/eli-c
Uranium, Activity	1.1	pCi/g-dry		0.007		10	SW6020	08/14/08 04:03/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-009
Client Sample ID: LAN 003C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.6	pCi/g-dry	U			1	E909.0M	08/14/08 09:53/eli-c
Lead 210 precision (±)	2.3	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Lead 210 MDC	3.7	pCi/g-dry				1	E909.0M	08/14/08 09:53/eli-c
Radium 226	1	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Radium 226 MDC	0.05	pCi/g-dry				1	E903.0	08/27/08 17:52/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.9	mg/kg-dry		0.01		10	SW6020	08/14/08 04:07/eli-c
Uranium, Activity	2.0	pCi/g-dry		0.007		10	SW6020	08/14/08 04:07/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-010
Client Sample ID: LAN 004A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.9	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.6	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.01		10	SW6020	08/14/08 04:11/eli-c
Uranium, Activity	0.69	pCi/g-dry		0.007		10	SW6020	08/14/08 04:11/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-011
Client Sample ID: LAN 004B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.2	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.3	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.2	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.2	mg/kg-dry		0.01		10	SW6020	08/14/08 04:15/eli-c
Uranium, Activity	0.79	pCi/g-dry		0.007		10	SW6020	08/14/08 04:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-012
Client Sample ID: LAN 004C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.8	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.0	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.2	mg/kg-dry		0.01		10	SW6020	08/14/08 04:19/eli-c
Uranium, Activity	1.5	pCi/g-dry		0.007		10	SW6020	08/14/08 04:19/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-013
Client Sample ID: LAN 005A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	4.4	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.9	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.2	mg/kg-dry		0.01		10	SW6020	08/14/08 04:39/eli-c
Uranium, Activity	0.84	pCi/g-dry		0.007		10	SW6020	08/14/08 04:39/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-014
Client Sample ID: LAN 005B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.9	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.6	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.01		10	SW6020	08/14/08 04:43/eli-c
Uranium, Activity	0.71	pCi/g-dry		0.007		10	SW6020	08/14/08 04:43/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-015
Client Sample ID: LAN 005C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.5	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.01		10	SW6020	08/14/08 04:47/eli-c
Uranium, Activity	0.71	pCi/g-dry		0.007		10	SW6020	08/14/08 04:47/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-016
Client Sample ID: LAN 004A Dup

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.5	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.4	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.1	mg/kg-dry		0.01		10	SW6020	08/14/08 04:51/eli-c
Uranium, Activity	0.72	pCi/g-dry		0.007		10	SW6020	08/14/08 04:51/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-017
Client Sample ID: LAN 004B Dup

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	-0.3	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.01		10	SW6020	08/14/08 04:55/eli-c
Uranium, Activity	0.68	pCi/g-dry		0.007		10	SW6020	08/14/08 04:55/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-018
Client Sample ID: LAN 004C Dup

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 11:46/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.0	mg/kg-dry		0.01		10	SW6020	08/14/08 04:59/eli-c
Uranium, Activity	1.3	pCi/g-dry		0.007		10	SW6020	08/14/08 04:59/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-019
Client Sample ID: LAN 006A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	-0.005	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.3	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.01		10	SW6020	08/14/08 05:03/eli-c
Uranium, Activity	0.71	pCi/g-dry		0.007		10	SW6020	08/14/08 05:03/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-020
Client Sample ID: LAN 006B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.5	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.3	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.1	mg/kg-dry		0.01		10	SW6020	08/14/08 05:07/eli-c
Uranium, Activity	0.75	pCi/g-dry		0.007		10	SW6020	08/14/08 05:07/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-021
Client Sample ID: LAN 006C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.7	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.4	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.7	mg/kg-dry		0.01		10	SW6020	08/14/08 05:43/eli-c
Uranium, Activity	1.1	pCi/g-dry		0.007		10	SW6020	08/14/08 05:43/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-022
Client Sample ID: LAN 007A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.3	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.2	mg/kg-dry		0.01		10	SW6020	08/14/08 05:51/eli-c
Uranium, Activity	0.81	pCi/g-dry		0.007		10	SW6020	08/14/08 05:51/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-023
Client Sample ID: LAN 007B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.4	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.2	mg/kg-dry		0.01		10	SW6020	08/14/08 05:55/eli-c
Uranium, Activity	1.5	pCi/g-dry		0.007		10	SW6020	08/14/08 05:55/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-024
Client Sample ID: LAN 007C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.1	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.4	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.8	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	3.6	mg/kg-dry		0.01		10	SW6020	08/14/08 05:59/eli-c
Uranium, Activity	2.5	pCi/g-dry		0.007		10	SW6020	08/14/08 05:59/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-025
Client Sample ID: LAN 008A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.0	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	1	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.7	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	3.1	mg/kg-dry		0.01		10	SW6020	08/14/08 07:15/eli-c
Uranium, Activity	2.1	pCi/g-dry		0.007		10	SW6020	08/14/08 07:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-026
Client Sample ID: LAN 008B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.1	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	1.0	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.9	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.7	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	5.1	mg/kg-dry		0.01		10	SW6020	08/14/08 07:19/eli-c
Uranium, Activity	3.5	pCi/g-dry		0.007		10	SW6020	08/14/08 07:19/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-027
Client Sample ID: LAN 009A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	-0.4	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.3	pCi/g-dry	U	0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.6	mg/kg-dry		0.01		10	SW6020	08/14/08 07:23/eli-c
Uranium, Activity	1.1	pCi/g-dry		0.007		10	SW6020	08/14/08 07:23/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-028
Client Sample ID: LAN 009B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	-0.3	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	4.1	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 13:55/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.6	mg/kg-dry		0.01		10	SW6020	08/14/08 07:27/eli-c
Uranium, Activity	1.8	pCi/g-dry		0.007		10	SW6020	08/14/08 07:27/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-029
Client Sample ID: LAN 009C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.5	pCi/g-dry	U			1	E909.0M	08/18/08 09:32/eli-c
Lead 210 precision (±)	1.4	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Lead 210 MDC	2.3	pCi/g-dry				1	E909.0M	08/18/08 09:32/eli-c
Radium 226	3.9	pCi/g-dry				1	E903.0	08/21/08 15:29/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	08/21/08 15:29/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	08/21/08 15:29/eli-c
Thorium 230	1.1	pCi/g-dry		0.1		1	E907.0	09/05/08 13:00/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/05/08 13:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.4	mg/kg-dry		0.01		10	SW6020	08/14/08 07:31/eli-c
Uranium, Activity	1.6	pCi/g-dry		0.007		10	SW6020	08/14/08 07:31/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-030
Client Sample ID: LAN 010A

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.8	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	2.0	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	1.2	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	1.2	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	2.3	mg/kg-dry		0.01		10	SW6020	08/14/08 07:35/eli-c
Uranium, Activity	1.6	pCi/g-dry		0.007		10	SW6020	08/14/08 07:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-031
Client Sample ID: LAN 010B

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.1	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	1.4	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	7.9	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	1.2	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	2.2	mg/kg-dry		0.01		10	SW6020	08/14/08 07:39/eli-c
Uranium, Activity	1.5	pCi/g-dry		0.007		10	SW6020	08/14/08 07:39/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-032
Client Sample ID: LAN 010C

Report Date: 09/30/08
Collection Date: 07/18/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.9	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	2.0	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	1.5	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	1.9	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.8	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	4.0	mg/kg-dry		0.01		10	SW6020	08/14/08 07:44/eli-c
Uranium, Activity	2.7	pCi/g-dry		0.007		10	SW6020	08/14/08 07:44/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-033
Client Sample ID: LAS 001A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.6	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.8	mg/kg-dry		0.01		10	SW6020	08/14/08 07:48/eli-c
Uranium, Activity	1.2	pCi/g-dry		0.007		10	SW6020	08/14/08 07:48/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-034
Client Sample ID: LAS 001B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.1	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	2.0	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	0.4	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.3	mg/kg-dry		0.01		10	SW6020	08/14/08 08:08/eli-c
Uranium, Activity	0.86	pCi/g-dry		0.007		10	SW6020	08/14/08 08:08/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-035
Client Sample ID: LAS 001C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.9	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	0.1	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.91	mg/kg-dry		0.01		10	SW6020	08/15/08 16:46/eli-c
Uranium, Activity	0.61	pCi/g-dry		0.007		10	SW6020	08/15/08 16:46/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-036
Client Sample ID: LAS 002A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.4	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	0.1	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.71	mg/kg-dry		0.01		10	SW6020	08/15/08 16:50/eli-c
Uranium, Activity	0.48	pCi/g-dry		0.007		10	SW6020	08/15/08 16:50/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-037
Client Sample ID: LAS 002B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.7	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	0.4	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.01		10	SW6020	08/15/08 16:54/eli-c
Uranium, Activity	0.71	pCi/g-dry		0.007		10	SW6020	08/15/08 16:54/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-038
Client Sample ID: LAS 003C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.4	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 15:15/eli-c
Thorium 230	0.4	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.93	mg/kg-dry		0.01		10	SW6020	08/15/08 16:58/eli-c
Uranium, Activity	0.63	pCi/g-dry		0.007		10	SW6020	08/15/08 16:58/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-039
Client Sample ID: LAS 003A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.4	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.3	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.74	mg/kg-dry		0.01		10	SW6020	08/15/08 17:03/eli-c
Uranium, Activity	0.50	pCi/g-dry		0.007		10	SW6020	08/15/08 17:03/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-040
Client Sample ID: LAS 003B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.1	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.8	mg/kg-dry		0.01		10	SW6020	08/14/08 08:12/eli-c
Uranium, Activity	1.2	pCi/g-dry		0.007		10	SW6020	08/14/08 08:12/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-041
Client Sample ID: LAS 003C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.7	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	1	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.4	mg/kg-dry		0.01		10	SW6020	08/15/08 17:15/eli-c
Uranium, Activity	0.93	pCi/g-dry		0.007		10	SW6020	08/15/08 17:15/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-042
Client Sample ID: LAS 004A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.6	mg/kg-dry		0.01		10	SW6020	08/26/08 01:02/eli-c
Uranium, Activity	1.1	pCi/g-dry		0.007		10	SW6020	08/26/08 01:02/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-043
Client Sample ID: LAS 004B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.3	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	2.0	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.4	mg/kg-dry		0.01		10	SW6020	08/15/08 17:43/eli-c
Uranium, Activity	0.95	pCi/g-dry		0.007		10	SW6020	08/15/08 17:43/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-044
Client Sample ID: LAS 004C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.9	mg/kg-dry		0.01		10	SW6020	08/26/08 01:28/eli-c
Uranium, Activity	1.3	pCi/g-dry		0.007		10	SW6020	08/26/08 01:28/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-045
Client Sample ID: LAS 005A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.6	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.4	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.7	mg/kg-dry		0.02		10	SW6020	08/29/08 23:20/eli-c
Uranium, Activity	1.2	pCi/g-dry		0.01		10	SW6020	08/29/08 23:20/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-046
Client Sample ID: LAS 005B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.4	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.4	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	2.4	mg/kg-dry		0.01		10	SW6020	08/26/08 01:32/eli-c
Uranium, Activity	1.6	pCi/g-dry		0.007		10	SW6020	08/26/08 01:32/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-047
Client Sample ID: LAS 005C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	1.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.4	mg/kg-dry		0.01		10	SW6020	08/15/08 18:00/eli-c
Uranium, Activity	0.98	pCi/g-dry		0.007		10	SW6020	08/15/08 18:00/eli-c

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-048
Client Sample ID: LAS 006A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.7	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.1	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 17:42/eli-c
Thorium 230	0.6	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.55	mg/kg-dry		0.01		10	SW6020	08/15/08 18:04/eli-c
Uranium, Activity	0.37	pCi/g-dry		0.007		10	SW6020	08/15/08 18:04/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-049
Client Sample ID: LAS 006B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.4	pCi/g-dry	U			1	E909.0M	08/19/08 10:35/eli-c
Lead 210 precision (±)	1.2	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Lead 210 MDC	1.9	pCi/g-dry				1	E909.0M	08/19/08 10:35/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/18/08 22:13/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/18/08 22:13/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/18/08 22:13/eli-c
Thorium 230	0.3	pCi/g-dry	U	0.1		1	E907.0	09/12/08 12:30/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	09/12/08 12:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.71	mg/kg-dry		0.01		10	SW6020	08/15/08 18:08/eli-c
Uranium, Activity	0.48	pCi/g-dry		0.007		10	SW6020	08/15/08 18:08/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-050
Client Sample ID: LAS 006C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	-0.3	pCi/g-dry	U			1	E909.0M	08/21/08 10:15/eli-c
Lead 210 precision (±)	1.5	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Lead 210 MDC	2.6	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Thorium 230	0.3	pCi/g-dry		0.1		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	0.09	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.96	mg/kg-dry		0.01		10	SW6020	08/15/08 18:28/eli-c
Uranium, Activity	0.65	pCi/g-dry		0.007		10	SW6020	08/15/08 18:28/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-051
Client Sample ID: LAS 007A

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	08/21/08 10:15/eli-c
Lead 210 precision (±)	1.5	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Lead 210 MDC	2.5	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	0.1	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.64	mg/kg-dry		0.01		10	SW6020	08/15/08 18:32/eli-c
Uranium, Activity	0.43	pCi/g-dry		0.007		10	SW6020	08/15/08 18:32/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-052
Client Sample ID: LAS 007B

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	08/21/08 10:15/eli-c
Lead 210 precision (±)	1.5	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Lead 210 MDC	2.5	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	0.1	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c
TOTAL METALS ANALYSES								
Uranium	0.67	mg/kg-dry		0.01		10	SW6020	08/15/08 18:36/eli-c
Uranium, Activity	0.45	pCi/g-dry		0.007		10	SW6020	08/15/08 18:36/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Dewey Burdock Baseline
Lab ID: R08070420-053
Client Sample ID: LAS 007C

Report Date: 09/30/08
Collection Date: 07/19/08
Date Received: 07/23/08
Matrix: SOIL

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	-0.7	pCi/g-dry	U			1	E909.0M	08/21/08 10:15/eli-c
Lead 210 precision (±)	1.5	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Lead 210 MDC	2.6	pCi/g-dry				1	E909.0M	08/21/08 10:15/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	08/20/08 09:10/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	0.1	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c
TOTAL METALS ANALYSES								
Uranium	1.1	mg/kg-dry		0.01		10	SW6020	08/15/08 18:40/eli-c
Uranium, Activity	0.72	pCi/g-dry		0.007		10	SW6020	08/15/08 18:40/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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ANALYTICAL SUMMARY REPORT

October 08, 2007

Environmental Restoration Group Inc
8809 Washington St NE
Albuquerque, NM 87113

Workorder No.: C07081328

Project Name: DB Vegetation Sampling

Energy Laboratories, Inc. received the following 8 samples from Environmental Restoration Group Inc on 8/23/2007 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C07081328-001	AMS-05	08/14/07 00:00	08/23/07	Vegetation	Uranium, Total Digestion, Radiochemistry Lead 210 Polonium 210 Radium 226 Thorium, Isotopic
C07081328-002	AMS-02	08/14/07 00:00	08/23/07	Vegetation	Same As Above
C07081328-003	AMS-BKG	08/14/07 00:00	08/23/07	Vegetation	Same As Above
C07081328-004	AMS-06	08/14/07 00:00	08/23/07	Vegetation	Same As Above
C07081328-005	AMS-01	08/14/07 00:00	08/23/07	Vegetation	Same As Above
C07081328-006	AMS-07	08/14/07 00:00	08/23/07	Vegetation	Same As Above
C07081328-007	AMS-04	08/14/07 00:00	08/23/07	Vegetation	Same As Above
C07081328-008	AMS-03		08/23/07	Vegetation	Same As Above

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative or Report.

If you have any questions regarding these tests results, please call.

Report Approved By:

ENERGY LABORATORIES, INC. • 2393 Salt Creek Highway (82601) • P.O. Box 3258 • Casper, WY 82602
Toll Free 888.235.0515 • 307.235.0515 • Fax 307.234.1639 • casper@energylab.com • www.energylab.com

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-001
Client Sample ID: AMS-05

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	1.7E-03	uCi/kg		6.5E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	2.1E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	6.6E-05	uCi/kg		6.5E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	3.0E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	2.4E-05	uCi/kg		1.3E-06		E903.0	09/04/07 11:27 / crw
Radium 226 precision (±)	9.1E-06	uCi/kg				E903.0	09/04/07 11:27 / crw
Thorium 230	1.5E-05	uCi/kg		1.3E-06		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	8.5E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	3.7E-05	uCi/kg		1.3E-06		SW6020	09/08/07 07:16 / bws

* 2σ = precision estimate

Report Definitions: RL - Analyte reporting limit
QCL - Quality control limit
MCL - Maximum contaminant level
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-002
Client Sample ID: AMS-02

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	3.3E-04	uCi/kg		2.7E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	7.5E-05	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	1.8E-05	uCi/kg		2.7E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	9.9E-06	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	2.2E-05	uCi/kg		5.5E-07		E903.0	09/04/07 11:27 / crw
Radium 226 precision (±)	5.6E-06	uCi/kg				E903.0	09/04/07 11:27 / crw
Thorium 230	4.7E-06	uCi/kg		5.5E-07		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	3.0E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	1.0E-05	uCi/kg		5.5E-07		SW6020	09/08/07 07:20 / bws

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-003
Client Sample ID: AMS-BKG

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	6.9E-04	uCi/kg		4.8E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	1.4E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	2.5E-05	uCi/kg		4.8E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	1.6E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	4.1E-05	uCi/kg		9.7E-07		E903.0	09/04/07 11:27 / crw
Radium 226 precision (±)	9.9E-06	uCi/kg				E903.0	09/04/07 11:27 / crw
Thorium 230	1.0E-05	uCi/kg		9.7E-07		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	6.3E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	4.0E-05	uCi/kg		9.7E-07		SW6020	09/08/07 07:24 / bws

Report Definitions: RL - Analyte reporting limit
QCL - Quality control limit.
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ND - Not detected at the reporting limit

TRACK# C07081328

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-004
Client Sample ID: AMS-06

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	1.0E-03	uCi/kg		4.1E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	1.3E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	6.0E-05	uCi/kg		4.1E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	2.2E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	3.2E-05	uCi/kg		8.2E-07		E903.0	09/04/07 11:27 / crw
Radium 226 precision (±)	8.1E-06	uCi/kg				E903.0	09/04/07 11:27 / crw
Thorium 230	1.9E-05	uCi/kg		8.2E-07		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	6.6E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	3.8E-05	uCi/kg		8.3E-07		SW6020	09/08/07 07:28 / bws

Report Definitions: RL - Analyte reporting limit.
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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-005
Client Sample ID: AMS-01

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	1.8E-03	uCi/kg		8.6E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	2.7E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	1.3E-04	uCi/kg		8.6E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	4.9E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	5.5E-05	uCi/kg		1.7E-06		E903.0	09/04/07 11:27 / crw
Radium 226 precision (±)	1.6E-05	uCi/kg				E903.0	09/04/07 11:27 / crw
Thorium 230	ND	uCi/kg		1.7E-06		E907.0	09/04/07 15:00 / dmf
Uranium, Activity	1.3E-05	uCi/kg		1.7E-06		SW6020	09/08/07 07:33 / bws

Report Definitions: RL - Analyte reporting limit.
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ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-006
Client Sample ID: AMS-07

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	2.1E-03	uCi/kg		4.8E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	1.8E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	1.5E-04	uCi/kg		4.8E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	4.1E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	2.7E-05	uCi/kg		9.7E-07		E903.0	09/04/07 12:30 / crw
Radium 226 precision (±)	8.1E-06	uCi/kg				E903.0	09/04/07 12:30 / crw
Thorium 230	1.6E-05	uCi/kg		9.7E-07		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	9.2E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	1.8E-05	uCi/kg		9.7E-07		SW6020	09/08/07 07:37 / bws

Report Definitions: RL - Analyte reporting limit.
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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-007
Client Sample ID: AMS-04

Report Date: 10/08/07
Collection Date: 08/14/07
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	1.5E-03	uCi/kg		4.0E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	1.5E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	9.8E-05	uCi/kg		4.0E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	3.2E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	2.3E-05	uCi/kg		8.0E-07		E903.0	09/04/07 12:30 / crw
Radium 226 precision (±)	6.8E-06	uCi/kg				E903.0	09/04/07 12:30 / crw
Thorium 230	3.6E-06	uCi/kg		8.0E-07		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	2.8E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	9.3E-06	uCi/kg		8.1E-07		SW6020	09/08/07 07:53 / bws

Report Definitions: RL - Analyte reporting limit
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: C07081328-008
Client Sample ID: AMS-03

Report Date: 10/08/07
Collection Date: Not Provided
DateReceived: 08/23/07
Matrix: Vegetation

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - TOTAL							
Lead 210	9.1E-04	uCi/kg		3.2E-06		E909.0M	09/04/07 12:50 / dm
Lead 210 precision (±)	1.1E-04	uCi/kg				E909.0M	09/04/07 12:50 / dm
Polonium 210	7.8E-05	uCi/kg		3.2E-06		RMO-3008	09/06/07 22:00 / res
Polonium 210 precision (±)	2.2E-05	uCi/kg				RMO-3008	09/06/07 22:00 / res
Radium 226	7.4E-05	uCi/kg		6.4E-07		E903.0	09/04/07 12:30 / crw
Radium 226 precision (±)	1.1E-05	uCi/kg				E903.0	09/04/07 12:30 / crw
Thorium 230	2.6E-06	uCi/kg		6.4E-07		E907.0	09/04/07 15:00 / dmf
Thorium 230 precision (±)	2.2E-06	uCi/kg				E907.0	09/04/07 15:00 / dmf
Uranium, Activity	9.8E-06	uCi/kg		6.4E-07		SW6020	09/08/07 07:57 / bws

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-001
Client Sample ID: AMS-BKG

Report Date: 06/16/08
Collection Date: 04/20/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	3.5E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	0.000012	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	2.2E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	5.1E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	1.4E-03	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	1.0E-04	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	9.0E-02	uCi/kg	D	3.8E-06		25	SW6020	06/11/08 21:36/eli-c
RADIUM 226								
Radium 226 MDC	6.4E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.000083	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	0.000011	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

ENERGY LABORATORIES, INC. * 2821 Plant Street * Rapid City, SD 57702-0335
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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-002
Client Sample ID: AMS-01

Report Date: 06/16/08
Collection Date: 04/20/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	1.2E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	5.2E-06	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	4.7E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	7.2E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	2.9E-03	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	1.1E-04	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	2.8E-02	uCi/kg	D	2.4E-06		25	SW6020	06/11/08 21:44/eli-c
RADIUM 226								
Radium 226 MDC	3.7E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.000033	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	5.5E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-003
Client Sample ID: AMS-02

Report Date: 06/16/08
Collection Date: 04/20/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	1.4E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	4.9E-06	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	2.0E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	4.2E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	1.3E-03	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	6.9E-05	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	2.7E-02	uCi/kg	D	1.9E-06		25	SW6020	06/11/08 21:49/eli-c
RADIUM 226								
Radium 226 MDC	2.8E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.000030	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	4.5E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-004
Client Sample ID: AMS-03

Report Date: 06/16/08
Collection Date: 04/20/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	4.1E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	0.000011	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	2.3E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	4.4E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	1.4E-03	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	8.2E-05	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	1.5E-01	uCi/kg	D	2.4E-06		25	SW6020	06/11/08 21:53/eli-c
RADIUM 226								
Radium 226 MDC	3.7E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.00011	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	9.7E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-005
Client Sample ID: AMS-04

Report Date: 06/16/08
Collection Date: 04/20/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	8.3E-06	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	4.2E-06	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	1.7E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	3.9E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	1.2E-03	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	6.6E-05	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	2.1E-02	uCi/kg	D	1.9E-06		25	SW6020	06/11/08 21:57/eli-c
RADIUM 226								
Radium 226 MDC	2.8E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.000031	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	4.6E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-006
Client Sample ID: AMS-06

Report Date: 06/16/08
Collection Date: 04/20/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	3.9E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	0.000011	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	4.0E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	7.7E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	1.8E-03	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	1.1E-04	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	1.3E-01	uCi/kg	D	3.2E-06		25	SW6020	06/11/08 22:13/eli-c
RADIUM 226								
Radium 226 MDC	4.6E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.000092	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	9.9E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-007
Client Sample ID: AMS-05

Report Date: 06/16/08
Collection Date: 04/21/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	4.8E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	8.1E-06	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	1.6E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	3.1E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	3.3E-04	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	3.0E-05	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	2.3E-01	uCi/kg	D	1.3E-06		25	SW6020	06/11/08 22:17/eli-c
RADIUM 226								
Radium 226 MDC	1.8E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226	0.000079	uCi/kg				1	E903.0	05/16/08 09:56/eli-c
Radium 226 precision (±)	5.7E-06	uCi/kg				1	E903.0	05/16/08 09:56/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08040284-008
Client Sample ID: AMS-07

Report Date: 06/16/08
Collection Date: 04/21/08
Date Received: 04/21/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	4.0E-05	uCi/kg		2.0E-07		1	E907.0	05/12/08 11:30/eli-c
Thorium 230 precision (±)	0.000012	uCi/kg				1	E907.0	05/12/08 11:30/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	2.3E-04	uCi/kg		1.0E-06		1	RMO-3008	06/02/08 11:15/eli-c
Polonium 210 precision (±)	4.7E-05	uCi/kg				1	RMO-3008	06/02/08 11:15/eli-c
Lead 210	6.2E-04	uCi/kg		1.0E-06		1	E909.0M	05/19/08 07:15/eli-c
Lead 210 precision (±)	5.3E-05	uCi/kg				1	E909.0M	05/19/08 07:15/eli-c
Uranium, Activity	1.4E-01	uCi/kg	D	2.1E-06		25	SW6020	06/11/08 22:22/eli-c
RADIUM 226								
Radium 226 MDC	3.0E-06	uCi/kg				1	E903.0	05/16/08 11:45/eli-c
Radium 226	0.000076	uCi/kg				1	E903.0	05/16/08 11:45/eli-c
Radium 226 precision (±)	7.2E-06	uCi/kg				1	E903.0	05/16/08 11:45/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-001
Client Sample ID: AMS-02

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	-9.5E-07	uCi/kg	U	4.7E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	5.0E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	9.1E-06	uCi/kg	U	1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	8.5E-06	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	1.5E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	7.3E-05	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	1.2E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	3.2E-06	uCi/kg		2.0E-07		10	SW6020	08/06/08 01:53/eli-c
RADIUM 226								
Radium 226	9.3E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	3.6E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	4.0E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-002
Client Sample ID: AMS-03

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	1.0E-05	uCi/kg		7.7E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	6.6E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	9.6E-06	uCi/kg	U	1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	1.1E-05	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	3.3E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	1.2E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	1.9E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	7.7E-06	uCi/kg		2.0E-07		10	SW6020	08/06/08 01:57/eli-c
RADIUM 226								
Radium 226	7.5E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	4.9E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	6.6E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-003
Client Sample ID: AMS-04

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	-2.7E-06	uCi/kg	U	7.7E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	4.2E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	9.0E-06	uCi/kg	U	1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	9.6E-06	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	2.1E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	1.2E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	1.9E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	8.4E-06	uCi/kg		2.0E-07		10	SW6020	08/06/08 02:01/eli-c
RADIUM 226								
Radium 226	9.3E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	5.2E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	6.7E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-004
Client Sample ID: AMS-05

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	-8.8E-07	uCi/kg	U	8.8E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	5.7E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	2.1E-05	uCi/kg		1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	1.6E-05	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	3.4E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	1.4E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	2.2E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	1.4E-05	uCi/kg		2.0E-07		10	SW6020	08/06/08 02:05/eli-c
RADIUM 226								
Radium 226	5.9E-06	uCi/kg	U			1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	5.3E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	7.7E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-005
Client Sample ID: AMS-06

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	2.1E-05	uCi/kg		5.7E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	7.4E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	5.7E-06	uCi/kg	U	1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	5.7E-06	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	1.4E-04	uCi/kg	U			1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	8.7E-05	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	1.4E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	2.2E-05	uCi/kg		2.0E-07		10	SW6020	08/06/08 02:09/eli-c
RADIUM 226								
Radium 226	1.8E-05	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	5.0E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	5.0E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-006
Client Sample ID: AMS-07

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	2.0E-05	uCi/kg		8.6E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	8.6E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	2.0E-05	uCi/kg		1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	1.3E-05	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	-3.2E-05	uCi/kg	U			1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	1.3E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	2.1E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	2.7E-05	uCi/kg		2.0E-07		10	SW6020	08/06/08 02:13/eli-c
RADIUM 226								
Radium 226	2.4E-05	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	7.5E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	7.7E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-007
Client Sample ID: AMS-BKG

Report Date: 09/30/08
Collection Date: 07/14/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	7.3E-06	uCi/kg		5.6E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	4.2E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	9.3E-06	uCi/kg		1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	8.8E-06	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	1.3E-04	uCi/kg	U			1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	8.6E-05	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	1.4E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	1.0E-05	uCi/kg		2.0E-07		10	SW6020	08/06/08 02:17/eli-c
RADIUM 226								
Radium 226	1.3E-05	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 precision (±)	4.6E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c
Radium 226 MDC	5.1E-06	uCi/kg				1	E903.0	08/11/08 09:35/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: DB Vegetation Sampling
Lab ID: R08070287-008
Client Sample ID: AMS-01

Report Date: 09/30/08
Collection Date: 07/15/08
Date Received: 07/15/08
Matrix: PLANT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES								
Thorium 230	1.2E-05	uCi/kg		8.4E-07		1	E907.0	08/06/08 11:00/eli-c
Thorium 230 precision (±)	8.4E-06	uCi/kg				1	E907.0	08/06/08 11:00/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	1.7E-05	uCi/kg		1.0E-06		1	RMO-3008	08/08/08 16:34/eli-c
Polonium 210 precision (±)	1.5E-05	uCi/kg				1	RMO-3008	08/08/08 16:34/eli-c
Lead 210	3.3E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 precision (±)	1.3E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Lead 210 MDC	2.1E-04	uCi/kg				1	E909.0M	08/07/08 09:30/eli-c
Uranium, Activity	9.4E-06	uCi/kg		2.0E-07		10	SW6020	08/06/08 02:37/eli-c
RADIUM 226								
Radium 226	8.1E-05	uCi/kg				1	E903.0	08/11/08 11:26/eli-c
Radium 226 precision (±)	1.2E-05	uCi/kg				1	E903.0	08/11/08 11:26/eli-c
Radium 226 MDC	7.4E-06	uCi/kg				1	E903.0	08/11/08 11:26/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 2821 Plant St * Rapid City, SD 57702
Toll Free 888.672.1225 * 605.342.1225 * FAX 605.342.1397 * rapid_city@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08070463-001
Client Sample ID: DBAT-01

Report Date: 09/30/08
Collection Date: 06/25/08
Date Received: 07/28/08
Matrix: SOLID

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/kg-dry		0.01		10	SW6020	08/09/08 04:46/eli-c
Uranium, Activity	ND	pCi/g-dry		0.007		10	SW6020	08/09/08 04:46/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	0.0	pCi/g-dry	U	0.008		1	RMO-3008	09/03/08 17:30/eli-c
Polonium 210 precision (±)	0.1	pCi/g-dry				1	RMO-3008	09/03/08 17:30/eli-c
Lead 210	-0.007	pCi/g-dry	U			1	E909.0M	08/28/08 08:48/eli-c
Lead 210 precision (±)	0.04	pCi/g-dry				1	E909.0M	08/28/08 08:48/eli-c
Lead 210 MDC	0.08	pCi/g-dry				1	E909.0M	08/28/08 08:48/eli-c
Radium 226	0.003	pCi/g-dry	U			1	E903.0	08/20/08 16:28/eli-c
Radium 226 precision (±)	0.002	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Radium 226 MDC	0.003	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Thorium 230	0.0	pCi/g-dry	U	0.008		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	0.02	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08070463-002
Client Sample ID: DBAT-02

Report Date: 09/30/08
Collection Date: 06/25/08
Date Received: 07/28/08
Matrix: SOLID

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/kg-dry		0.01		10	SW6020	08/09/08 04:50/eli-c
Uranium, Activity	ND	pCi/g-dry		0.007		10	SW6020	08/09/08 04:50/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	0.0	pCi/g-dry	U	0.1		1	RMO-3008	09/03/08 17:30/eli-c
Polonium 210 precision (±)	1.2	pCi/g-dry				1	RMO-3008	09/03/08 17:30/eli-c
Lead 210	0.2	pCi/g-dry	U			1	E909.0M	08/28/08 08:48/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	08/28/08 08:48/eli-c
Lead 210 MDC	1.2	pCi/g-dry				1	E909.0M	08/28/08 08:48/eli-c
Radium 226	0.06	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Radium 226 precision (±)	0.03	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Radium 226 MDC	0.04	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Thorium 230	0.0	pCi/g-dry	U	0.1		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	1.4	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: Environmental Restoration Group Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08070463-003
Client Sample ID: DBAT-03

Report Date: 09/30/08
Collection Date: 06/25/08
Date Received: 07/28/08
Matrix: SOLID

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
METALS - TOTAL								
Uranium	ND	mg/kg-dry		0.01		10	SW6020	08/09/08 04:54/eli-c
Uranium, Activity	ND	pCi/g-dry		0.007		10	SW6020	08/09/08 04:54/eli-c
RADIONUCLIDES - TOTAL								
Polonium 210	0.02	pCi/g-dry	U	0.006		1	RMO-3008	09/03/08 17:30/eli-c
Polonium 210 precision (±)	0.2	pCi/g-dry				1	RMO-3008	09/03/08 17:30/eli-c
Lead 210	-0.007	pCi/g-dry	U			1	E909.0M	08/28/08 08:48/eli-c
Lead 210 precision (±)	0.04	pCi/g-dry				1	E909.0M	08/28/08 08:48/eli-c
Lead 210 MDC	0.06	pCi/g-dry				1	E909.0M	08/28/08 08:48/eli-c
Radium 226	0.003	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Radium 226 precision (±)	0.001	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Radium 226 MDC	0.002	pCi/g-dry				1	E903.0	08/20/08 16:28/eli-c
Thorium 230	0.0	pCi/g-dry	U	0.006		1	E907.0	09/04/08 15:30/eli-c
Thorium 230 precision (±)	0.1	pCi/g-dry				1	E907.0	09/04/08 15:30/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GRP
ATTN: KEN BAKER
8809 WASHINGTON NE
SUITE 150
ALBUQUERQUE, NM 87113

Acct. No. 0410058

LANDAUER

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
Telephone: (800) 528-8327 Facsimile: (708) 755-7048

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure pCi/l-days	Avg. Radon Conc. pCi/l	AREA GROSS COUNT	AREA COUNTED (SQ MM)	AREA BACK GRND	AREA LOT NO.
4730145	DRNF	01-FEB-08	17-MAY-08	RN-8 1350 CALIB FACT= 37.8 STD DEV= 7.1 DAYS EXPOSED: 106	111.1	1.0	198	37.2 A	2.38	T33605
4730146	DRNF	01-FEB-08	17-MAY-08	HV-1 DANIELS W/TLD 14:28 CALIB FACT= 37.8 STD DEV= 8.0 DAYS EXPOSED: 106	70.3	0.7	158	37.2 A	2.38	T33605
4730148	DRNF	01-FEB-08	17-MAY-08	HV-1 DANIELS W/TLD 14:28 CALIB FACT= 37.8 STD DEV= 8.7 DAYS EXPOSED: 106	44.9	0.4	133	37.2 A	2.38	T33605
4730149	DRNF	01-FEB-08	17-MAY-08	RN-4 1528 CALIB FACT= 37.8 STD DEV= 7.3 DAYS EXPOSED: 106	102.9	1.0	190	37.2 A	2.38	T33605
4730150	DRNF	01-FEB-08	17-MAY-08	HV-2 SPENCER W/TLD 1604 CALIB FACT= 37.8 STD DEV= 7.9 DAYS EXPOSED: 106	71.3	0.7	159	37.2 A	2.38	T33605
4730169	DRNF	04-FEB-08	17-MAY-08	HV-4 DEWEY W/TLD 1630 CALIB FACT= 38.1 STD DEV= 5.1 DAYS EXPOSED: 103	298.8	2.9	381	37.2 A	2.38	T33605
4730170	DRNF	04-FEB-08	17-MAY-08	HV-3 BEAVER CREEK W/TLD 1650 CALIB FACT= 38.0 STD DEV= 5.3 DAYS EXPOSED: 103	279.2	2.7	362	37.2 A	2.38	T33605
1	2	3	4	5	6	7	8			

Q.C. Release	Process No.	Report Date	Date Received
DRB	A21453	23-JUN-08	11-JUN-08

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GRP
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LANDAUER

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
Telephone (800) 528-8327 Facsimile (708) 755-7048

Detector Number	Detector Type	Starting Date	Ending Date	Field Data - Comments	Exposure pCi/l-days	Avg Radon Conc pCi	GROSS COUNT	AREA COUNTED (SQ MM)	BACK GRND	LOT NO.
4730199	DRNF	11-FEB-08	17-MAY-08	RN-3 1440 CALIB FACT= 38.0 STD DEV= 5.4 DAYS EXPOSED: 96	256.6	2.7	340	37.2 A	2.38	T33605
4730200	DRNF	11-FEB-08	17-MAY-08	RN-6 1452 CALIB FACT= 38.1 STD DEV= 5.2 DAYS EXPOSED: 96	283.3	3.0	366	37.2 A	2.38	T33605
4730201	DRNF	11-FEB-08	17-MAY-08	RN-1 1517 CALIB FACT= 38.0 STD DEV= 5.6 DAYS EXPOSED: 96	231.9	2.4	316	37.2 A	2.38	T33605
4730203	DRNF	12-FEB-08	17-MAY-08	RN-7 1810 CALIB FACT= 38.1 STD DEV= 5.0 DAYS EXPOSED: 95	317.4	3.3	399	37.2 A	2.38	T33605
4730204	DRNF	12-FEB-08	17-MAY-08	RN-5 1544 CALIB FACT= 38.0 STD DEV= 5.5 DAYS EXPOSED: 95	248.3	2.6	332	37.2 A	2.38	T33605
4730221	DRNF	01-FEB-08	17-MAY-08	BKGD-ANDERSEN W/TLD 1725 CALIB FACT= 37.9 STD DEV= 6.2 DAYS EXPOSED: 106	175.4	1.7	261	37.2 A	2.38	T33605
4730222	DRNF	01-FEB-08	17-MAY-08	BKGD-ANDERSEN W/TLD 1725 CALIB FACT= 37.9 STD DEV= 6.5 DAYS EXPOSED: 106	153.9	1.5	240	37.2 A	2.38	T33605
1	2	3	4	5	6	7	8			

Q.C. Release	Process No.	Report Date	Date Received
DRB	A21453	23-JUN-08	11-JUN-08

Radon Monitoring Report

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Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure pCi/l-days	Avg. Radon Conc. pCi/l	AREA GROSS COUNT	AREA COUNTED (SQ MM)	AREA BACK GRND	LOT NO.
4730223	DRNF	01-FEB-08	17-MAY-08	HV-6 SCHOOL HOUSE W/TLD 1710 CALIB FACT= 37.9 STD DEV= 6.6 DAYS EXPOSED: 106	140.7	1.3	227	37.2 A	2.38	T33605
4730224	DRNF	01-FEB-08	17-MAY-08	HV-5 ENGLEBERT W/TLD 1311 CALIB FACT= 37.9 STD DEV= 6.9 DAYS EXPOSED: 106	122.3	1.2	209	37.2 A	2.38	T33605
4730225	DRNF	01-FEB-08	17-MAY-08	HV-7 HECK W/TLD 1325 CALIB FACT= 37.8 STD DEV= 7.1 DAYS EXPOSED: 106	109.0	1.0	196	37.2 A	2.38	T33605
1	2	3	4	5	6	7	8			

Q.C. Release	Process No.	Report Date	Date Received
DRB	A21453	23-JUN-08	11-JUN-08

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GRP
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Acct. No. 0410058

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure pCi/l-days	Avg Radon Conc. pCi/l	AREA GROSS COUNT	AREA COUNTED (SQ MM)	AREA BACK GRND	LOT NO.
4729620	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE RN-06 CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	71	37.2 A	1.27	T33604
4729621	DRNM	17-MAY-08	17-JUL-08	RN-02 CALIB FACT= 36.6 STD DEV= 11.0 DAYS EXPOSED: 61	35.1	0.6	83	37.2 A	1.27	T33604
4729622	DRNM	17-MAY-08	~~19~~-JUL-08 17, according to radon test detector log. DRF 8/19/08	RN-01 CALIB FACT= 36.6 STD DEV= 11.3 DAYS EXPOSED: 63	31.2	0.5	79	37.2 A	1.27	T33604
4729638	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-01 DANIELS CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	63	37.2 A	1.27	T33604
4729639	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-01 DANIELS CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	67	37.2 A	1.27	T33604
4729640	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE RN-03 CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	74	37.2 A	1.27	T33604

1 2 3 4 5 6 7 8

Q.C. Release	Process No	Report Date	Date Received
VVG	A21500	11-AUG-08	05-AUG-08

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GRP
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Acct. No. 0410058

LANDAUER

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
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Detector Number	Detector Type	Starting Date	Ending Date	Field Data Comments	Exposure pCi/l days	Avg Radon Conc pCi/l	AREA GROSS COUNT	AREA COUNTED (SQ MM)	AREA BACK GRND	LOT NO.
4729647	DRNM	17-MAY-08	17-JUL-08	RN-07 CALIB FACT= 36.7 STD DEV= 10.4 DAYS EXPOSED: 61	44.0	0.7	92	37.2 A	1.27	T33604
4729648	DRNM	17-MAY-08	17-JUL-08	AMS-BKG ANDERSON CALIB FACT= 36.6 STD DEV= 11.3 DAYS EXPOSED: 61	30.2	0.5	78	37.2 A	1.27	T33604
4729649	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-BKG ANDERSON CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	68	37.2 A	1.27	T33604
4729653	DRNM	17-MAY-08	17-JUL-08	AMS-04 DEWEY CALIB FACT= 36.6 STD DEV= 11.0 DAYS EXPOSED: 61	35.1	0.6	83	37.2 A	1.27	T33604
4729654	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-03 BEAVER CREEK RANCH CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	67	37.2 A	1.27	T33604
4729655	DRNM	17-MAY-08	17-JUL-08	AMS-06 SCHOOL CALIB FACT= 36.6 STD DEV= 10.5 DAYS EXPOSED: 61	42.0	0.7	90	37.2 A	1.27	T33604
1	2	3	4	5	6	7	8			

Q.C. Release	Process No.	Report Date	Date Received
VVG	A21500	11-AUG-08	05-AUG-08

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GRP
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LANDAUER

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Acct. No. 0410058

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure pC/l-days	Avg. Radon Conc. pCi/l	AREA GROSS COUNT	AREA COUNTED (SQ MM)	AREA BACK GRND	LOT NO.
4729667	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-05 ENGLEBERT CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	65	37.2 A	1.27	T33604
4729668	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-07 NECK CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	67	37.2 A	1.27	T33604
4729669	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE RN-08 CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	56	37.2 A	1.27	T33604
4729673	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE ~~RN-01~~ RN-04, according to radon test detector log DF 8-19-08 CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	68	37.2 A	1.27	T33604
4729674	DRNM	17-MAY-08	17-JUL-08	RN-05 CALIB FACT= 36.7 STD DEV= 10.1 DAYS EXPOSED: 61	49.9	0.8	98	37.2 A	1.27	T33604
4729675	DRNM	17-MAY-08	17-JUL-08	* - LESS THAN INDICATED VALUE AMS-02 SPENCER CALIB FACT= 36.6 DAYS EXPOSED: 61	* 30.0	* 0.5	68	37.2 A	1.27	T33604

1 2 3 4 5 6 7 8

Q.C. Release	Process No.	Report Date	Date Received
VVG	A21500	11-AUG-08	05-AUG-08

Radon Monitoring Report

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LANDAUER

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Acct. No. 0410058

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure pCi/l-days	Avg. Radon Conc. pCi/l	
4681411	DRNF	14-AUG-07	24-SEP-07	BACKGROUND-KEITH ANDERSON	83.6	2.0	
4681412	DRNF	14-AUG-07	23-SEP-07	RADON 01-BASE WASH PILE, NORTH SIDE	81.0	2.0	
4681414	DRNF	14-AUG-07	23-SEP-07	RADON 02-MIDDLE OF MILE WASTE EDGE OPEN PIT	390.0	9.8	
4681416	DRNF	14-AUG-07	23-SEP-07	RADON 03-SOUTH OF DARROW PIT MINE	48.8	1.2	
4681417	DRNF	14-AUG-07	23-SEP-07	RADON 04-MET STATION	79.0	2.0	
4681418	DRNF	14-AUG-07	23-SEP-07	RADON 05-ABANDONED MINE NEAR N BD	60.0	1.5	
4681419	DRNF	14-AUG-07	24-SEP-07	LOCATION 4 DEWEY	47.5	1.2	
4681421	DRNF	14-AUG-07	27-SEP-07	LOCATION 3 BEAVER CREEK RANCH (NO GOLD COVER)	50.8	1.2	
4681424	DRNF	14-AUG-07	27-SEP-07	LOCATION 1-NW DANIELS RANCH	43.6	1.0	
4681433	DRNF	14-AUG-07	27-SEP-07	LOCATION 1 DULICATE-NW DANIELS RANCH	44.2	1.0	
4681439	DRNF	14-AUG-07	27-SEP-07	LOCATION 7 HECK'S RANCH	47.5	1.1	
4681440	DRNF	14-AUG-07	27-SEP-07	BACKGROUND-KEITH ANDERSON	117.8	2.7	
1	2	3	4	5	6	7	8

Q.C. Release	Process No.	Report Date	Date Received
VVG	A21305	05-OCT-07	01-OCT-07

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GPF
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LANDAUER

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Telephone (800) 528-8327 Facsimile (708) 755-7048

Acct. No. 0410058

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure (Days)	Avg. Radon Conc. (pCi)	
4690837	DRNF	15-AUG-07	27-SEP-07	LOCATION 2-MRS SPENCER'S HOUSE	93.9	2.2	
4690838	DRNF	15-AUG-07	23-SEP-07	RADON 07-WYOMING LINE	118.1	3.0	
4690839	DRNF	16-AUG-07	23-SEP-07	MARC KOLLENBECK'S HOUSE RN-08	113.4	3.0	
4690840	DRNF	19-AUG-07	23-SEP-07	RADON 06-ROLLFRONT AREA	114.8	3.3	
4690841	DRNF	17-AUG-07	27-SEP-07	LOCATION 6-OLD SCHOOLHOUSE	106.7	2.6	
4690842	DRNF	15-AUG-07	27-SEP-07	LOCATION 5-PINK 2-STORY HOUSE	93.2	2.2	
1	2	3	4	5	6	7	8

Q.C. Release	Process No.	Report Date	Date Received
VVG	A21305	05-OCT-07	01-OCT-07

Radon Monitoring Report

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8809 WASHINGTON NE
SUITE 150
ALBUQUERQUE, NM 87113

Acct. No. 0410058

LANDAUER

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
Telephone (800) 528-8327 Facsimile (708) 755-7018

Detector Number	Detector Type	Starting Date	Ending Date	Field Data / Comments	Exposure (mC - tdc)	Adj. H(p)(10) (mSv)
4703748	DRNF	27-SEP-07	01-FEB-08	SPENCER-LOC 2	154.8	1.2
4703749	DRNF	27-SEP-07	01-FEB-08	DANIELS-LOC 1	83.1	0.7
4703750	DRNF	27-SEP-07	01-FEB-08	DANIELS-LOC 1	44.9	0.4
4703751	DRNF	27-SEP-07	04-FEB-08	DEWEY- LOC 4	161.6	1.2
4703752	DRNF	27-SEP-07	04-FEB-08	BEAVER CREEK RANCH-LOC 3	150.5	1.2
4703765	DRNF	23-SEP-07	11-FEB-08	RN-03	126.3	0.9
4703766	DRNF	23-SEP-07	11-FEB-08	RN-01	179.6	1.3
4703768	DRNF	23-SEP-07	01-FEB-08	RN-04	183.3	1.4
4703769	DRNF	23-SEP-07	12-FEB-08	NO GOLD SEAL RN-05	157.9	1.1
4703771	DRNF	23-SEP-07	12-FEB-08	RN-07	261.7	1.8
4703797	DRNF	27-SEP-07	01-FEB-08	MECH RANCH-LOC 7	198.9	1.5
4703799	DRNF	27-SEP-07	01-FEB-08	ENGLEBERT RANCH-LOC 5	128.2	1.0
4703800	DRNF	27-SEP-07	01-FEB-08	SCHOOL-LOC 6	122.6	1.0
4703801	DRNF	27-SEP-07	01-FEB-08	ANDERSON-BKG	198.9	1.6
1	2	3	4	5	6	7	8

Q.C. Release	Process No.	Report Date	Date Received
VVG	A21380	04-MAR-08	15-FEB-08

Radon Monitoring Report

ENVIRONMENTAL RESTORATION GRP
ATTN: KEN BAKER
8809 WASHINGTON NE
SUITE 150
ALBUQUERQUE, NM 87113

Acct. No. 0410058

LANDAUER

Landauer, Inc. 2 Science Road Glenwood, Illinois 60425-1586
Telephone (800) 528-8327 Facsimile (708) 755-7048

Detector Number	Detector Type	Starting Date	Ending Date	Field Data Comments	Exposure pCi/L days	Avg. Radon Conc. pCi/L
4703802	DRNF	27-SEP-07	01-FEB-08	ANDERSON-BKG	196.4	1.5
4712642	DRNF	23-SEP-07	11-FEB-08	RN-06	190.2	1.3
4712643	DRNF	23-SEP-07	01-FEB-08	RN-08	171.3	1.3
4712644	DRNF	23-SEP-07	11-FEB-08	RN-02	173.8	1.2
1	2	3	4	5	6	7 8

Q.C. Release	Process No.	Report Date	Date Received
VVG	A21380	04-MAR-08	15-FEB-08

Appendix C

Radon Flux Measurement Documentation

ERG Radon Flux Canister Data Log

Site: Dewey-Burdock

Location Number	Canister Number	Deployment Date (mm/dd/yy)	Deployment Time (24:00)	Retrieval Date (mm/dd/yy)	Retrieval Time (24:00)	Notes/Comments
1	22	–	–	–	–	RnB Blank
2	257	07/14/08	09:24	07/15/08	10:06	RFA-B37
3	258		09:27		10:14	RFA-B21
4	8		08:19		08:49	RFA-B17
5	73		08:55		09:29	RFA-B36
6	65		09:13		09:54	RFA-B15
7	95		09:20		10:00	RFA-B02
8	92		08:10		08:43	RFA-B30
9	38		08:05		08:41	RFA-B13
10	59		07:56		08:30	RFA-B01
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Environmental Restoration Group, Inc.
8809 Washington St. NE * Suite 150
Albuquerque, NM 87113

ERG Radon Flux Canister Data Log

Site: Dewey - Burdock

Location Number	Canister Number	Deployment Date (mm/dd/yy)	Deployment Time (24:00)	Retrieval Date (mm/dd/yy)	Retrieval Time (24:00)	Notes/Comments
1	91	09/26/07	08:51	09/27/07	10:00	RFA-B21
2	55	09/26/07	11:18	09/27/07	09:40	RFA-B31
3	72	09/26/07	09:04	09/27/07	10:10	RFA-B37
4	73	09/26/07	09:33	09/27/07	10:20	RFA-B02
5	23	09/26/07	10:15	09/27/07	10:30	RFA-B15
6	63	09/26/07	12:12	09/27/07	10:36	RFA-B17
7	105	09/26/07	12:40	09/27/07	10:22	RFA-B13
8	102	09/26/07	13:04	09/27/07	10:15	RFA-B30
9	45	09/26/07	13:50	09/27/07	10:07	RFA-B01
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Environmental Restoration Group, Inc.
8809 Washington St. NE * Suite 150
Albuquerque, NM 87113

Radon – 222 Canister Chain of Custody Record

Facility: Dewey Burdock
Pile or Stack Name: N/A
Area of Pile or Stack: N/A
Field Representative: N. WRUBEL

	Deployment	Retrival
Date	4/20/08	4/21/08
Rel. Humid.	$\bar{x}$: 39; 6-71	$\bar{x}$: 29 44; 19-68
Bar. Press	29.50 in.	30.02 in.
Temp. (F)	~71°F $\bar{x}$: 59; 36-81	~40°F $\bar{x}$: 38; 25-50

www.wunderground.com CHADRON, NE no frost observed

Deployment/Retrieval Record

Item	Location ID or Description	Coordinates North	Coordinates East	Canister Number	Deployment Time	Deployment By	Retrieval Time	Retrieval By	Comments
101	RFA-B21	428288.77	999249.30	48	0830	NW	0802	NW	
102	RFA-B31	432201.68	1001484.26	2	0852		0825		
103	RFA-B37	430292.49	1005338.17	71	0900		0838		
104	RFA-B02	430887.96	1006307.79	59	0909		0846		
105	RFA-B15	432487.00	1007598.62	80	0918		0854		
106	RFA-B17	445319.19	989955.54	90	1010		0930		
107	RFA-B01	444878.75	986206.90	256	1024		0948		
108	RFA-B13	442713.12	988273.03	38	1035		1001		
109	RFA-B30	443802.77	988057.01	88	1045		1009		
110	Trip Blank	–	–	255	–	–	–	–	
111									
112									
113				[illegible]					
114									

Custody Transfer Record

Items Nos.	Reliquished By	Date	Time	Accepted By	Date	Time 10 AM
					4/22/08	~~4/22~~ KB
101-110	[illegible]	4/21/08	1400	K Baker		

0

RFA-B##

Radon Flux Measurements

Site Dewey · Burdick

Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts TOTAL	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(nCi)	Flux pCi/m2s	Flux Error 1.00 S.D.	LLD pCi/m2s	Remarks
257	7/16	1520	7/14	9:24	7/15	10:06		1200	5117						37			
258	"	15:40		9:27		10:14		"	4448						21			
8	"	16:01		8:19		8:49		"	5121						17			
73	"	16:22		8:55		9:29		"	3712						36			
65	"	16:46		9:13		9:54		"	5845						15			
95	"	17:10		9:20		10:00		"	4515						Ø2			
92	"	17:31		8:10		8:43		"	6326						3Ø			
* 92B	"	17:52		"		"		"	6386						3Ø			
38	"	18:16		8:05		8:41		"	6724						13			
22	"	18:38		—		—		"	3126						—	BLANK		
59	"	18:59		7:56		8:30		"	6871				[illegible]	RFA-B	Ø1			
BKG #2		19:42						"	2938									
STD #3	"	20:03						"	42987									
STD #1	"	20:24						"	47880									

ROI 523-697
4/22/08

Radon Flux Measurements

Site Long Beach

Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(pCi)	Flux pCi/m2s	Flux Error 100% D	LLD pCi/m2s	Remarks
STD 1	4/22	1720							29888	48042								
STD 3	4/22	1740							39122									
BKG1		1808							2757									
38		1840							3642									
88		1905							5848									
90		1923							3695									
256		1945							3810									
80		2010							4481									
80B		2031							4374									
39		2055							3932									
2		2115							3751									
71		2137							4800									
255		2200							2863									
48		2220							3182									
BKG2		2241							2605									
STD 1		2308							48463									
STD 3		2330							38657									

Karen K Baker

Data entered 4/30/09 by MSS

Can = 562 - 680

Radon Flux Measurements

Site: Dewey-Burdock, SD

TOTAL

Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(nCi)	Flux (pCi/m2s	Flux Error 1 00S D	LLD pCi/m2s	Remarks
D1	9/28/07	1600						1200	31826	1.9				46124				
STD 3	9/28/07	1635							26724	2.2				40807				
BKG 1	9/28/07	1700							-10	482				2594				
91	9/28/07	1722	9/26/07	0851	9/27/07	1000			220	21				230				
55	9/28/07	1745	9/26/07	1118	9/27/07	0940			210	31				3627				
T2	9/28/07	1805	9/26/07	0925	9/27/07	1010		1200	1137	22				3932				
73	9/28/07	1830	9/26/07	0948	9/27/07	1020			525	28				4064				
23	9/28/07	1853	9/26/07	1015	9/27/07	1030			1744	14.6				7582				
63	9/28/07	1921	9/26/07	1212	9/27/07	1036			1596	16.1				4478				
105	9/28/07	1946	9/26/07	1240	9/27/07	1022			1742	16				5761				
102	9/28/07	2009	9/26/09	1304	9/27/07	1015			1760	13.3				5049				
45	9/28/07	2036	9/26/07	1350	9/27/07	1007			1672	16.2				4876				
45D	9/28/07	2100	9/26/09	1350	9/27/07	1007			1404	18.9				4824				
46	9/28/09	2121	NA	NA	NA	NA	NA		219	110				1799				Field Blank
BKG2	9/28/07	2142							247	82				2601				
STD 3	9/28/07	2204							25961	2.5				40545				
STD 1	9/28/07	2225							31277	1.9				45940				

POWERTECH (USA) INC.

APPENDIX 2.9-B

Air Particulate Sampler Operation And Maintenance Manual

HI-Q Environmental Products Co.
Division of La Jolla Scientific Co., Inc.

7386 Trade Street
San Diego, California 92121-2422

Phone: (858) 549-2820
Fax: (858) 549-9657

HVP-4200AFC

BRUSHLESS, AUTOMATIC FLOW CONTROL OUTDOOR HI-VOL AIR SAMPLER FOR CONTINUOUS USE

(REV. N.R. 12/05)

INTRODUCTION

This high volume air sampler is housed in an anodized aluminum outdoor shelter. The unit incorporates a three stage centrifugal blower powered by a brushless, variable speed motor. The motor speed is controlled by a programmable logic controller (PLC) that accepts an input from a mass air flow sensor placed in the air flow path downstream of the filter paper. Any changes in the operator's pre-set flow rate due to changes in dust loading, barometric pressure and temperature is detected by the air flow sensor. The PLC compensates for these changes by adjusting the motor speed to maintain that pre-set flow rate.

The HVP-4200AFC is intended for continuous use without the bothersome and expensive brush changes of brushed blower units. The brushless blower is speed controlled rather than incorporating air choke devices such as venturis or orifice plates commonly found in units which run their motor at full speed. The HI-Q brushless blower is light weight and consumes about half the power of other type units.

The standard protocol for most high volume air sampling procedures is 40 SCFM through an 8" x 10" (0.8 micron, glass fiber) filter paper, which is well within the range of the HVP-4200AFC. This unit is supplied with a model CFPH-810 filter paper holder that accepts 8"x10" filter paper. The unit is calibrated for a flow range between 10 and 50 SCFM, allowing the extra pump capacity to maintain a pre-set flow rate within this calibration range during sarnpling pressure drops across the filter holder. The actual maximum flow is dependent upon the type of filter paper or media and its inherent pressure drop.

Brushless blowers are generally quieter than any other type of blower. This unit has a sound level of less than 50 dBA at 3 feet, when running at full speed.

The HVP-4200AFC includes a 7 day programmable timer that allows the air sampler to be turned ON and OFF at pre-programmed times of the week. The unit can be programmed to turn ON and OFF at five different times in each day of the week.

Unpacking the unit

Unpack unit and inspect for any possible shipping damage. Report any damage IMMEDIATELY to the CARRIER.

The unit is shipped in two or three boxes depending on accessories purchased. The main unit is in one box, and the roof assembly in another.

Placement of the unit

The HVP-4200AFC unit is intended for outdoor use. Normally, the unit is anchored to a concrete pad or used railroad ties imbedded in the ground. There are four rubber shock absorbers for non permanent installation on the leg bottoms. For permanent installation, remove the four rubber foot shock absorbers, and use lag bolts or molly bolts to fasten the unit to the pad.

Install the roof with the bolts provided, and attach the roof restrainer to the cabinet. This restrainer will prevent the roof from falling down on the operators hands when changing the filter paper.

SYSTEM DESCRIPTION

Electrical

The unit is provided with a connection for conduit. Connect the conduit and wire as required by the electrical codes applicable in your area. Unit should be installed on a circuit breaker protected line of at least 15 AMPS. We recommend the services of a licensed electrician.

Fuse

The units face panel has a 12 AMP fuse for the electronics and the motor. The unit is pre-wired for connection to the outlet box inside the unit. The line switch controls the outlet, and the standard power cord of the unit plugs into this outlet.

Power Supply

The unit consists of a 40W, multiple output DC power supply with three outputs: 5V, 12V, and 24V. The PLC is powered by 24V and the mass air flow sensor is powered by 12V.

Electronics

The PLC unit has built-in firmware which is pre-programmed to operate with the air flow sensor; no further adjustment is required. The PLC and air flow sensor are durable enough to operate in harsh environments, yet fragile if physically hit or dropped. The air flow sensor is installed in the air stream downstream of the filter media and positioned for maximum sensitivity.

The motor speed is controlled by a 0-10 VDC signal to the motor from the PLC. Polarity is critical in that crossing + with - could damage the internal blower circuit.

The motor itself has a control pot located in the side of the motor housing. This pot is used at the factory to adjust the maximum speed control voltage to the Hall Effect sensors inside the motor. The pot is adjusted by HI-Q to the minimum voltage necessary to achieve the maximum flow. Further adjustment beyond this setting could supply over voltage to the motor and burn it out.
Therefore, do not further adjust this pot!

> **Caution!** Do not for any reason open or disassemble the motor. There is nothing to replace, or adjust, or salvage from the inside. There is a PC board and Hall sensor switches which are in adjustment and may be damaged if opened. The bearings are permanently lubricated and cannot be replaced. The parts are sometimes fixed with Lock tight™ compound to prevent movement. If the motor eventually wears out, it will have to be replaced in its entirety.

OPERATION

Remove the protective cardboard from the 8" x 10" filter holder. Install a sheet of filter paper in the holder. For 0.3 micron filtration, use HI-Q model #FP5211-810 type glass fiber paper, shinny side towards the pump. For 0.8 micron high flow, use our type #2063 glass fiber paper, red stripe facing out. The maximum flow rate of any unit is dependent on the pressure drop of the paper and the size. High pressure drop or small size will reduce the maximum flow. For automatic speed and flow control, you must set the flow to some rate that is less than maximum obtainable. Then, when the flow is reduced by dust loading, the motor will be able to speed up to compensate for the reduced flow. For this reason, the unit should not be set for a flow over 50 SCFM. This is to allow some reserve motor capacity for maintaining that 50 SCFM when dust loading increases the pressure drop across the filter paper.

When the unit ready for operation, turn on the MAIN SWITCH located on the front panel. The screen as shown in figure 1 will be displayed a few seconds after the main switch has been turned ON.

Figure 1. Startup Display

5 seconds later, the screen shown in figure 2 will be displayed.

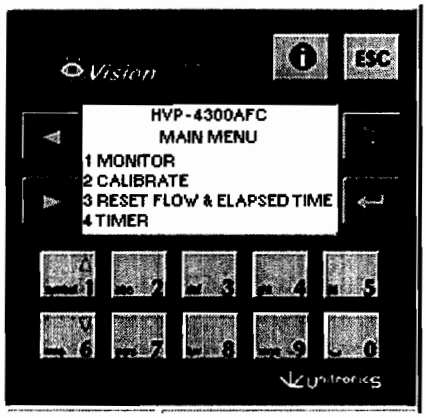

Figure 2. Main Menu

The keypad buttons and the corresponding functions in this menu are:

1 Monitor
2 Calibration
3 Reset Parameters
4 Timer

Parameters screen

Press "1" from the "Main Menu" to enter the Parameters screen as shown in figure 3. The parameters displayed in this screen are:

SET POINT: User pre-set flow rate in SCFM
FLOW RATE: Instantaneous flow rate in SCFM
TOTAL FLOW: Total volume of air sampled in SCF
ELAPSED TIME: Elapsed sample time in Hours and Tenths of Hours

Press "ESC" to return to the main menu.

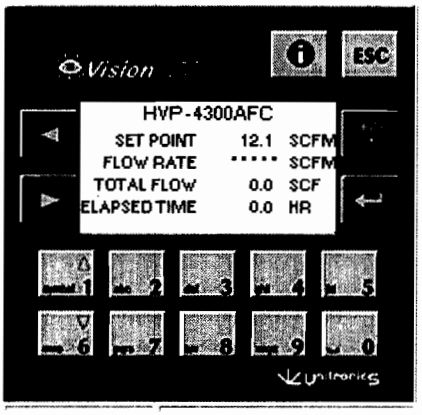

Figure 3. Parameter Screen

Calibration screen

Press "2" from the "Main Menu" to enter the Calibration Password screen (figure 10). The calibration procedure and screens are described in detail in the next chapter

Reset Parameters screen

Press "3" from the "Main Menu" to enter the Reset Parameters screen where the totalizer and elapsed timer can be reset to zero. The following screen (figure 4) prompts the user to enter a password. The factory pre-set password for the RESET functions is 250.

Figure 4. RESET Password Entry

Enter 250 using the keypad and press OK (or ESC to return to Main Menu). Press the RESET button from the following screen (figure 5) to reset the totalizer and elapsed timer to zero (or ESC to return to Main Menu without resetting). Press OK to return to the Main Menu

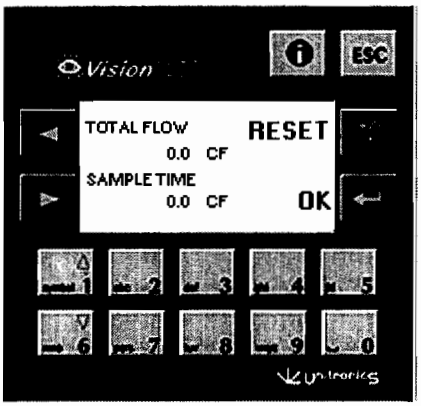

Figure 5. RESET Totalizer and Elapsed Timer

Timer screen

The timer feature is used to turn the sampler ON and OFF at programmed time of the day and week. For continuous operation of the air sampler, turn the "Blower Switch" to "ON". The timer feature is applied only when the "Blower Switch" is in "TIMER" position. Press "4" from the "Main Menu" to enter the Timer screen as shown in figure 6. Press the corresponding key to select the appropriate day of the week you wish to program or press "ESC" to return to the Main Menu.

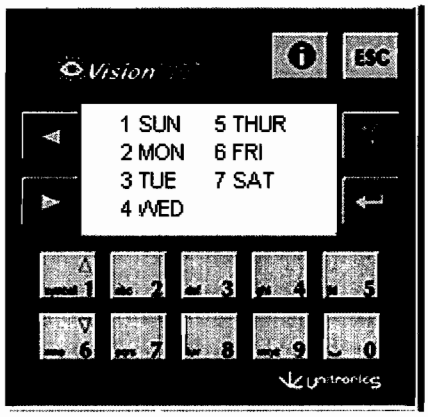

Figure 6. Timer Screen

If "3 TUE" is selected the following screen (figure 7) will be displayed.

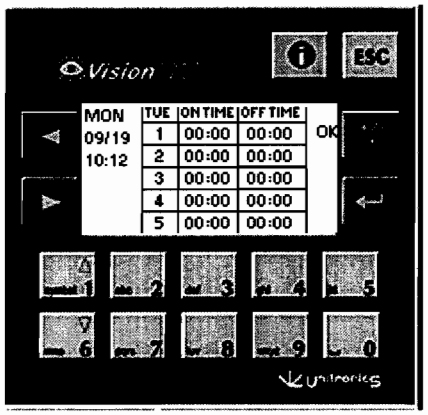

Figure 7. Timer Screen for Tuesday

As shown above in figure 7, the top left hand side of the screen displays the current day (DDD), date (MM/DD) and time (HH:MM). The table shows five runtime (ON/OFF) periods for Tuesday that the sampler can be programmed to be turned ON and OFF. The cursor starts at the first ON time. First enter the start time ("ON") Hour (HH:) followed by the "ENTER " key then the minutes (:MM) followed by the "ENTER" key. Repeat the steps for programming the desired OFF time. If multiple ON & OFF times are desired, enter them as described above, otherwise continue pressing the "ENTER" key until all times are programmed. You must step through the entire table even if multiple ON/OFF times are not desired. Press "OK" when programming is complete. The timer screen shown (figure 6) will be displayed. Repeat programming features for each of the ON/OFF times for the remaining days of the week.

Turn on the MOTOR SWITCH. The motor will start and settle down to the speed control setting. Press 1 (Up Arrow) or 2 (Down Arrow) to increase or decrease the pre-set flow rate. After setting the desired flow, let the unit run for a few minutes to warm up the motor. Now, close the unit and lock it if required.

NOTE ON THE LOCK

The locks are all individually keyed. We do not keep a copy of the keys! If you lose the keys, you will have to drill out the lock and replace it.

CALIBRATION

Calibration Check Devices

The unit is calibrated before leaving the factory. There is no need to calibrate before use. Protocol requires that all air flow devices should be re-calibrated at least once a year against a traceable standard. Operational calibration verification can be performed once a month if you own a calibration check device.

The validity of the HVP-4200AFC calibration can be checked in the field with a nurnber of types of calibration units.

HI-Q suggests using the HFC-50C or AFC-COMPLETE-50. The unit fits with an adapter plate (FHA-810CF) to the top of the paper loaded filter holder.

Calibration Check Procedure

To establish the concept of relationships of the three units of flow volume measurement, it is important to start with the following definition:

CFM (cubic feet per minute) = ACFM (actual cubic feet per minute) = SCFM (standard cubic feet per minute), when **all** are at following conditions of 29.92 inches of mercury barometric pressure, and 70 degrees F. When the barometric pressure or temperature is different than that 29.92" and 70 degrees F, then corrections must be made to the apparent CFM to give you the SCFM reading needed to adjust the display on the HVP-4200AFC. Once you have the unit calibrated with the corrected SCFM, the mass air flow sensor and PLC will automatically compensate for any changes in temperature and pressure during the sampling process. To state it another way, when you are re-calibrating the unit with a device that does not have automatic compensation for temperature and pressure, like the HFC-50C or laminar flow element, you must determine what the SCFM is from the CFM reading of the curve plot value or direct meter readout value. This, to compensate for the deviation from the ideal 29.92 " Hg and 70 degrees F. Again, if the temperature and pressure is ideal, then CFM = SCFM.

Example of Checking Calibration

Turn on the unit and set the flow at 40.0 CFM of the CALIBRATOR, not the display of the unit. The apparent flow rate reading is 40 CFM on the calibrator, but the temperature is not 70 degrees, and the pressure is not 29.92". Rather, the temperature is 80 degrees F. and the barometric pressure is 28.70 " Mercury.

First compensate for the barometric pressure. From chart A-31031, look up 28.70". The correction multiplier is: 0.9592. 40.0 CFM x 0.9592 = 38.36. Then look up the correction multiplier for 80 degrees on chart A-32422, which is 0.9674. 38.36 x 0.9674 = 37.10 SCFM.

The calibrator reads 40.0 CFM. The instantaneous flow rate display *should* read the corrected Standard Cubic Feet per Minute of 37.10 SCFM.

If an operator finds the HVP-4200AFC to be out of calibration beyond a correctable means of using correction factors the control panel must be sent back to HI-Q for re-calibration. Re-calibration is done at our factory in San Diego, California and is re-certified against NIST standards.

Re-calibration

From the Main Menu (figure 2) press "2" to enter into the "Calibration Password" display shown in figure 9. The factory pre-set password for Calibration is 250.

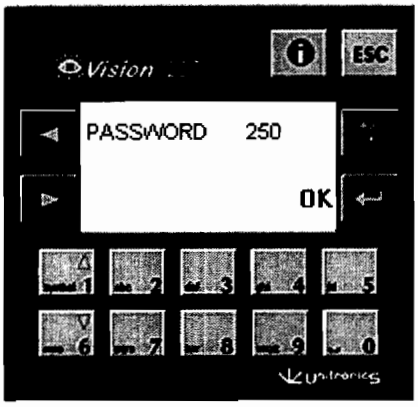

Figure 9. CALIBRATION Password Entry

Enter 250 using the keypad and press OK (or ESC to return to Main Display). When the password is accepted the PLC enters calibration mode (figure 10). To cancel the calibration procedure and retain the previous calibration, press ESC at any stage of the calibration procedure.

Figure 10. Zero Calibration Display

Turn off the blower switch and wait for 30 seconds and press NEXT. The zero point (0 scfm) will be set and the "Calibration Point 1" screen (figure 11) will be displayed.

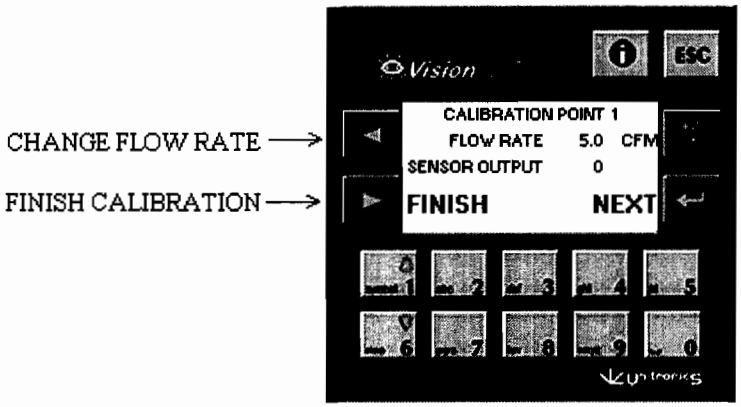

Figure 11. Calibration Point 1

Turn on the blower switch. To change the flow rate display point of the calibration table, press the Left Arrow as indicated in figure 7. The "Change Flow Rate" screen will be displayed, as shown in figure 12. Using the keypad, enter the desired flow rate in SCFM and press OK. The "Calibration Point 1" screen will be updated with the new flow rate value. Press 1 (Up Arrow) or 2 (Down Arrow) to increase or decrease the speed of the blower, therby changing the flow rate, until the flow rate displayed by the Air Flow Calibrator (AFC-COMPLETE-50) is equal to the flow rate displayed by the unit and then press NEXT.

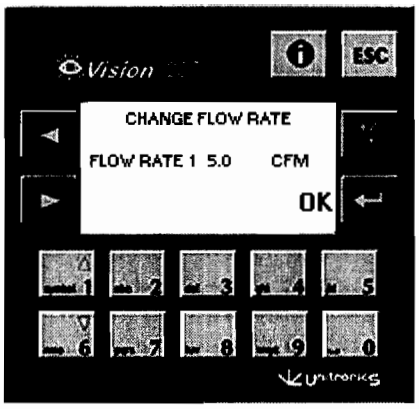

Figure 12. Change Flow Rate 1

Repeat the above steps up to the desired number of calibration points. The maximum allowed number of calibration points is 15. To complete calibration with less than 15 points, press FINISH (Right Arrow) at any stage of calibration, as shown in figure 11. In case of error or doubt, press ESC to restore the previous calibration table and start over again.

To have the unit re-calibrated at HI-Q factory, the operator must simply remove the electrical components using the following steps and send them back to HI-Q:

1. Remove control panel by loosening the 6 screws which hold it in the cabinet.
2. Remove the blower-mass air flow sensor assembly by loosening the 4 "kep-nuts" holding the blower in place and loosening the filter holder collar. Keep the motor mounting plate on the blower.
3. Carefully package and send the above components to HI-Q, with a completed re-calibration purchase order.

Contact our calibration department (858-549-2820) to request re-calibration cost and turn around time.

NOTE: Converting the HVP-4200AFC to a 4" diameter paper sampler (HVP-4204AFC) is not easily done in the field without the knowledge of the control technology. If a conversion from, or to, a 4" diameter filter holder is required, please contact the engineering department at HI-Q before proceeding.

OPTIONS AVAILABLE

Contact our engineering department (858-549-2820) to incorporate any of the following features into the HVP-4200AFC unit.

- RS-232/RS-485 communication
- 4-20 mA or 0-10 VDC scaled analog output
- Alarm features
- CDMA/GSM communication

- Remote Access software
- Data Acquisition Software

MAINTENANCE

The Blower and Electronics are all maintenance free and must be factory serviced or replaced if defective.

HI-Q'S HVP-4200AFC
SPARE PARTS LIST

PART NUMBER	PART DESCRIPTION	QTY REQ.
HVP42-001	2-STAGE, 115 VAC, 250 WATT BRUSHLESS BLWR	1 EA
HVP42-002	2-STAGE, 230 VAC, 400 WATT BRUSHLESS BLWR	1 EA
HVP42-003	MASS FLOW CONTROLLER	1 EA
HVP42-004	MASS AIR FLOW SENSOR	1 EA
HVP42-005	40W, MULTIPLE OUTPUT POWER SUPPLY	1 EA
HVP42-006	OPTIONAL SERIAL COMMUNICATION CABLE	1 EA
HVP42-007	OPTIONAL 4-20 mA or 0-10 VDC OUTPUT WIRING	1 EA
HVP42-008	8" X 10"FILTER PAPER HOLDER, CFPH-810	1 EA
HVP42-009	FUSE HOLDER	1 EA
HVP42-010		
HVP42-011	FUSE FOR FACE PANEL	1 EA
HVP42-012	4" DIA. THREADED RING	1 EA
HVP42-013	4" DIA. REPLACEMENT SUPPORT SCREEN (N/A)	1 EA
HVP42-014	"O" RING FOR 4" THREADED RING	1 EA
HVP42-015	CONDUIT BOX	1 EA
HVP42-016	WHITE QUIT SWITCH & RECEPTACLES	1 EA
HVP42-017	CONDUIT BOX COVER PLATE	1 EA
HVP42-018	SPRING DOOR LATCH	1 EA
HVP42-019	CAM LOCK AND KEY	1 EA
HVP42-020	LEFT HANDED LOCKING ROOF SUPPORT	1 EA
HVP42-021	6" T-HINGE ROOF MOUNTING	2 EA
HVP42-022	4-1/2" SAFETY HASPS	1 SET
HVP42-023	MOTOR SHOCK MOUNTS	4 EA
HVP42-024	MOTOR SUPPORT GASKET	1 EA
HVP42-025	18/3 3 FT POWER CORD	1 EA
HVP42-026	ANODIZED SHELTER W/O ROOF	1 EA
HVP42-027	GABLED ROOF FOR ANODIZED SHELTER	1 EA
HVP42-028	CONTROL BOARD FACE PANEL	1 EA
HVP42-029	CONTROL BOARD SUPPORT, MOUNTING PANEL	1 EA
HVP42-030	SHELTER FOOT SUPPORT	4 EA
HVP42-031	TOGGLE SWITCH WITH ON/OFF PLATE	1 EA

APPENDIX 2.9-C

TLD Analytical Results

Table of Contents (Sorted by Sample Location and Date)

Monitoring Period	Date Deployed	Date Collected	Days	Sample Location	Landauer Location ID Number
1	8/15/2007	2/4/2008	173	AMS-01	8
	8/15/2007	2/4/2008	173	AMS-02	2
	8/15/2007	2/4/2008	173	AMS-03	4
	8/15/2007	2/4/2008	173	AMS-04	9
	8/15/2007	2/4/2008	173	AMS-05	6
	8/15/2007	2/4/2008	173	AMS-06	1
	8/15/2007	2/4/2008	173	AMS-07	3
	8/16/2007	2/4/2008	172	AMS-BKG	5
	8/15/2007	2/4/2008	173	AMS-BKG	7
2	2/4/2008	5/17/2008	103	AMS-01	10
	2/4/2008	5/17/2008	103	AMS-01	11
	2/4/2008	5/17/2008	103	AMS-02	12
	2/4/2008	5/17/2008	103	AMS-03	14
	2/4/2008	5/17/2008	103	AMS-04	17
	2/4/2008	5/17/2008	103	AMS-05	13
	2/4/2008	5/17/2008	103	AMS-06	15
	2/4/2008	5/17/2008	103	AMS-07	16
	2/4/2008	5/17/2008	103	AMS-BKG	18
	2/4/2008	5/17/2008	103	AMS-BKG	19
3	5/17/2008	7/17/2008	61	AMS-01	7
	5/17/2008	7/17/2008	61	AMS-01	8
	5/17/2008	7/17/2008	61	AMS-02	2
	5/17/2008	7/17/2008	61	AMS-03	9
	5/17/2008	7/17/2008	61	AMS-04	1
	5/17/2008	7/17/2008	61	AMS-05	26
	5/17/2008	7/17/2008	61	AMS-06	6
	5/17/2008	7/17/2008	61	AMS-07	27
	5/17/2008	7/17/2008	61	AMS-BKG	3
	5/17/2008	7/17/2008	61	AMS-BKG	5

Table of Contents (Sorted by Landauer Location ID)

Monitoring Period	Date Deployed	Date Collected	Days	Landauer Location ID Number	Sample Location
1	8/15/2007	2/4/2008	173	1	AMS-06
	8/15/2007	2/4/2008	173	2	AMS-02
	8/15/2007	2/4/2008	173	3	AMS-07
	8/15/2007	2/4/2008	173	4	AMS-03
	8/16/2007	2/4/2008	172	5	AMS-BKG
	8/15/2007	2/4/2008	173	6	AMS-05
	8/15/2007	2/4/2008	173	7	AMS-BKG
	8/15/2007	2/4/2008	173	8	AMS-01
	8/15/2007	2/4/2008	173	9	AMS-04
2	2/4/2008	5/17/2008	103	10	AMS-01
	2/4/2008	5/17/2008	103	11	AMS-01
	2/4/2008	5/17/2008	103	12	AMS-02
	2/4/2008	5/17/2008	103	13	AMS-05
	2/4/2008	5/17/2008	103	14	AMS-03
	2/4/2008	5/17/2008	103	15	AMS-06
	2/4/2008	5/17/2008	103	16	AMS-07
	2/4/2008	5/17/2008	103	17	AMS-04
	2/4/2008	5/17/2008	103	18	AMS-BKG
	2/4/2008	5/17/2008	103	19	AMS-BKG
3	5/17/2008	7/17/2008	61	1	AMS-04
	5/17/2008	7/17/2008	61	2	AMS-02
	5/17/2008	7/17/2008	61	3	AMS-BKG
	5/17/2008	7/17/2008	61	5	AMS-BKG
	5/17/2008	7/17/2008	61	6	AMS-06
	5/17/2008	7/17/2008	61	7	AMS-01
	5/17/2008	7/17/2008	61	8	AMS-01
	5/17/2008	7/17/2008	61	9	AMS-03
	5/17/2008	7/17/2008	61	26	AMS-05
	5/17/2008	7/17/2008	61	27	AMS-07

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ENVIRONMENTAL / LOW LEVEL DOSIMETRY REPORT

ADDRESS

POWER TECH URANIUM
ATTN :
310 SECOND AVE
EDGEMOUNT, SD 57735

ACCOUNT NO. 291406

SERIES CODE

FOR EXPOSURE PERIOD 07/01/2007

LOCATION ID NUMBER	IDENTIFIER (CLIENT SUPPLIED)	NOTE CODE	EXPOSURE OF DOSIMETER (MILLIREMS AMBIENT DOSE EQUIVALENT) GROSS	NET	NET CUMULATIVE TOTALS (MILLIREMS) CALENDAR QUARTER	YEAR TO DATE	PERMANENT	ADJUST-MENTS	NUMBER OF DOSIMETERS REPORTED	INCEPTION DATE OF PERM. TOTAL
00000	TRANSIT CONTROL	NC	56.2							
00003		NC	73.7							/ /
00005		NC	57.0							/ /
00006		NC	50.6							/ /
00007		NC	80.6							/ /
00009		NC	62.4							/ /

NOTES (COLUMN 3) : NC Returned Separately From The Deployment Control

Q.C. Release	Process No.	Reported Date	Date Processed	Date Received	Minimum Detectable Dose In This Process, Millirems Ambient Dose Equivalent	ONLY PAGE
LD	GK100A	02/28/2008	02/27/2008	02/15/2008	0.02	1

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EDGEMOUNT, SD 57735

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SERIES CODE

FOR EXPOSURE PERIOD 01/01/2008

LOCATION ID NUMBER	IDENTIFIER (CLIENT SUPPLIED)	NOTE CODE	EXPOSURE OF DOSIMETER (MILLIREMS AMBIENT DOSE EQUIVALENT) GROSS	EXPOSURE OF DOSIMETER (MILLIREMS AMBIENT DOSE EQUIVALENT) NET	NET CUMULATIVE TOTALS (MILLIREMS) CALENDAR QUARTER	YEAR TO DATE	PERMANENT	ADJUST-MENTS	NUMBER OF DOSIMETERS REPORTED	INCEPTION DATE OF PERM. TOTAL
00000	TRANSIT CONTROL		40.1	-0.2						
000X9	DEPLOY CONTROL		40.4	0.0						
00010			37.0	-3.4	-3.4	-3.4	-3.4		1	/ /
00011			37.3	-3.1	-3.1	-3.1	-3.1		1	/ /
00013			36.7	-3.6	-3.6	-3.6	-3.6		1	/ /
00014			38.6	-1.8	-1.8	-1.8	-1.8		1	/ /
00015			36.9	-3.5	-3.5	-3.5	-3.5		1	/ /
00016			35.5	-4.8	-4.8	-4.8	-4.8		1	/ /
00017			36.1	-4.2	-4.2	-4.2	-4.2		1	/ /
00018			39.2	-1.1	-1.1	-1.1	-1.1		1	/ /
00019			41.7	1.4	1.4	1.4	1.4		1	/ /

Q.C. Release	Process No.	Reported Date	Date Processed	Date Received	Minimum Detectable Dose In This Process, Millirems Ambient Dose Equivalent	ONLY PAGE
am	163001	06/12/2008	06/12/2008	06/11/2008	0.10	1

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SERIES CODE

FOR EXPOSURE PERIOD 01/01/2008

LOCATION ID NUMBER	IDENTIFIER (CLIENT SUPPLIED)	NOTE CODE	EXPOSURE OF DOSIMETER (MILLIREMS AMBIENT DOSE EQUIVALENT) GROSS	NET	NET CUMULATIVE TOTALS (MILLIREMS) CALENDAR QUARTER	YEAR TO DATE	PERMANENT	ADJUST-MENTS	NUMBER OF DOSIMETERS REPORTED	INCEPTION DATE OF PERM. TOTAL
00001		NC	54.3							/ /
00002		NC	54.0							/ /
00003		NC	56.6							/ /
00005		NC	60.4							/ /
00006		NC	51.1							/ /
00007		NC	59.5							/ /
00008		NC	55.8							/ /

NOTES (COLUMN 3) : NC Returned Separately From The Deployment Control

Q.C. Release	Process No.	Reported Date	Date Processed	Date Received	Minimum Detectable Dose In This Process, Millirems Ambient Dose Equivalent	ONLY PAGE
am	228002	08/20/2008	08/18/2008	08/15/2008	0.10	1

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ACCOUNT NO. 291406

SERIES CODE

FOR EXPOSURE PERIOD 04/01/2008

LOCATION ID NUMBER	IDENTIFIER (CLIENT SUPPLIED)	NOTE CODE	EXPOSURE OF DOSIMETER (MILLIREMS AMBIENT DOSE EQUIVALENT) GROSS	NET	NET CUMULATIVE TOTALS (MILLIREMS) CALENDAR QUARTER	YEAR TO DATE	PERMANENT	ADJUST-MENTS	NUMBER OF DOSIMETERS REPORTED	INCEPTION DATE OF PERM. TOTAL
00026		NC	36.4							/ /
00027		NC	36.1							/ /

NOTES (COLUMN 3) : NC Returned Separately From The Deployment Control

Q.C. Release	Process No.	Reported Date	Date Processed	Date Received	Minimum Detectable Dose In This Process, Millirems Ambient Dose Equivalent	ONLY PAGE
am	228002	08/20/2008	08/18/2008	08/15/2008	0.10	1

POWERTECH (USA) INC.

APPENDIX 2.9-D

EPA Method 3050B

METHOD 3050B

ACID DIGESTION OF SEDIMENTS, SLUDGES, AND SOILS

1.0 SCOPE AND APPLICATION

1.1 This method has been written to provide two separate digestion procedures, one for the preparation of sediments, sludges, and soil samples for analysis by flame atomic absorption spectrometry (FLAA) or inductively coupled plasma atomic emission spectrometry (ICP-AES) and one for the preparation of sediments, sludges, and soil samples for analysis of samples by Graphite Furnace AA (GFAA) or inductively coupled plasma mass spectrometry (ICP-MS). The extracts from these two procedures are not interchangeable and should only be used with the analytical determinations outlined in this section. Samples prepared by this method may be analyzed by ICP-AES or GFAA for all the listed metals as long as the detecion limits are adequate for the required end-use of the data. Alternative determinative techniques may be used if they are scientifically valid and the QC criteria of the method, including those dealing with interferences, can be achieved. Other elements and matrices may be analyzed by this method if performance is demonstrated for the analytes of interest, in the matrices of interest, at the concentration levels of interest (See Section 8.0). The recommended determinative techniques for each element are listed below:

FLAA/ICP-AES		GFAA/ICP-MS
Aluminum	Magnesium	Arsenic
Antimony	Manganese	Beryllium
Barium	Molybdenum	Cadmium
Beryllium	Nickel	Chromium
Cadmium	Potassium	Cobalt
Calcium	Silver	Iron
Chromium	Sodium	Lead
Cobalt	Thallium	Molybdenum
Copper	Vanadium	Selenium
Iron	Zinc	Thallium
Lead		
Vanadium		

1.2 This method is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become "environmentally available." By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment. If absolute total digestion is required use Method 3052.

2.0 SUMMARY OF METHOD

2.1 For the digestion of samples, a representative 1-2 gram (wet weight) or 1 gram (dry weight) sample is digested with repeated additions of nitric acid (HNO_3) and hydrogen peroxide (H_2O_2).

2.2 For GFAA or ICP-MS analysis, the resultant digestate is reduced in volume while heating and then diluted to a final volume of 100 mL.

2.3 For ICP-AES or FLAA analyses, hydrochloric acid (HCl) is added to the initial digestate and the sample is refluxed. In an optional step to increase the solubility of some metals (see Section 7.3.1: NOTE), this digestate is filtered and the filter paper and residues are rinsed, first

with hot HCl and then hot reagent water. Filter paper and residue are returned to the digestion flask, refluxed with additional HCl and then filtered again. The digestate is then diluted to a final volume of 100 mL.

2.4 If required, a separate sample aliquot shall be dried for a total percent solids determination.

3.0 INTERFERENCES

3.1 Sludge samples can contain diverse matrix types, each of which may present its own analytical challenge. Spiked samples and any relevant standard reference material should be processed in accordance with the quality control requirements given in Sec. 8.0 to aid in determining whether Method 3050B is applicable to a given waste.

4.0 APPARATUS AND MATERIALS

4.1 Digestion Vessels - 250-mL.

4.2 Vapor recovery device (e.g., ribbed watch glasses, appropriate refluxing device, appropriate solvent handling system).

4.3 Drying ovens - able to maintain 30°C ± 4°C.

4.4 Temperature measurement device capable of measuring to at least 125°C with suitable precision and accuracy (e.g., thermometer, IR sensor, thermocouple, thermister, etc.)

4.5 Filter paper - Whatman No. 41 or equivalent.

4.6 Centrifuge and centrifuge tubes.

4.7 Analytical balance - capable of accurate weighings to 0.01 g.

4.8 Heating source - Adjustable and able to maintain a temperature of 90-95°C. (e.g., hot plate, block digestor, microwave, etc.)

4.9 Funnel or equivalent.

4.10 Graduated cylinder or equivalent volume measuring device.

4.11 Volumetric Flasks - 100-mL.

5.0 REAGENTS

5.1 Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination. If the purity of a reagent is questionable, analyze the reagent to determine the level of impurities. The reagent blank must be less than the MDL in order to be used.

5.2 Reagent Water. Reagent water will be interference free. All references to water in the method refer to reagent water unless otherwise specified. Refer to Chapter One for a definition of reagent water.

5.3 Nitric acid (concentrated), HNO_3. Acid should be analyzed to determine level of impurities. If method blank is < MDL, the acid can be used.

5.4 Hydrochloric acid (concentrated), HCl. Acid should be analyzed to determine level of impurities. If method blank is < MDL, the acid can be used.

5.5 Hydrogen peroxide (30%), H_2O_2. Oxidant should be analyzed to determine level of impurities. If method blank is < MDL, the peroxide can be used.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 All samples must have been collected using a sampling plan that addresses the considerations discussed in Chapter Nine of this manual.

6.2 All sample containers must be demonstrated to be free of contamination at or below the reporting limit. Plastic and glass containers are both suitable. See Chapter Three, Section 3.1.3, for further information.

6.3 Nonaqueous samples should be refrigerated upon receipt and analyzed as soon as possible.

6.4 It can be difficult to obtain a representative sample with wet or damp materials. Wet samples may be dried, crushed, and ground to reduce subsample variability as long as drying does not affect the extraction of the analytes of interest in the sample.

7.0 PROCEDURE

7.1 Mix the sample thoroughly to achieve homogeneity and sieve, if appropriate and necessary, using a USS #10 sieve. All equipment used for homogenization should be cleaned according to the guidance in Sec. 6.0 to minimize the potential of cross-contamination. For each digestion procedure, weigh to the nearest 0.01 g and transfer a 1-2 g sample (wet weight) or 1 g sample (dry weight) to a digestion vessel. For samples with high liquid content, a larger sample size may be used as long as digestion is completed.

> NOTE: All steps requiring the use of acids should be conducted under a fume hood by properly trained personnel using appropriate laboratory safety equipment. The use of an acid vapor scrubber system for waste minimization is encouraged.

7.2 For the digestion of samples for analysis by GFAA or ICP-MS, add 10 mL of 1:1 HNO_3, mix the slurry, and cover with a watch glass or vapor recovery device. Heat the sample to 95°C ± 5°C and reflux for 10 to 15 minutes without boiling. Allow the sample to cool, add 5 mL of concentrated HNO_3, replace the cover, and reflux for 30 minutes. If brown fumes are generated, indicating oxidation of the sample by HNO_3, repeat this step (addition of 5 mL of conc. HNO_3) over and over until no brown fumes are given off by the sample indicating the complete reaction with HNO_3. Using a ribbed watch glass or vapor recovery system, either allow the solution to evaporate to approximately 5 mL without boiling or heat at 95°C ± 5°C without boiling for two hours. Maintain a covering of solution over the bottom of the vessel at all times.

NOTE: Alternatively, for direct energy coupling devices, such as a microwave, digest samples for analysis by GFAA or ICP-MS by adding 10 mL of 1:1 HNO_3, mixing the slurry and then covering with a vapor recovery device. Heat the sample to 95°C ± 5°C and reflux for 5 minutes at 95°C ± 5°C without boiling. Allow the sample to cool for 5 minutes, add 5 mL of concentrated HNO_3, heat the sample to 95°C ± 5°C and reflux for 5 minutes at 95°C ± 5°C. If brown fumes are generated, indicating oxidation of the sample by HNO_3, repeat this step (addition of 5 mL concentrated HNO_3) until no brown fumes are given off by the sample indicating the complete reaction with HNO_3. Using a vapor recovery system, heat the sample to 95°C ± 5°C and reflux for 10 minutes at 95°C ± 5°C without boiling.

7.2.1 After the step in Section 7.2 has been completed and the sample has cooled, add 2 mL of water and 3 mL of 30% H_2O_2. Cover the vessel with a watch glass or vapor recovery device and return the covered vessel to the heat source for warming and to start the peroxide reaction. Care must be taken to ensure that losses do not occur due to excessively vigorous effervescence. Heat until effervescence subsides and cool the vessel.

NOTE: Alternatively, for direct energy coupled devices: After the Sec. 7.2 "NOTE" step has been completed and the sample has cooled for 5 minutes, add slowly 10 mL of 30% H_2O_2. Care must be taken to ensure that losses do not occur due to excessive vigorous effervesence. Go to Section 7.2.3.

7.2.2 Continue to add 30% H_2O_2 in 1-mL aliquots with warming until the effervescence is minimal or until the general sample appearance is unchanged.

NOTE: Do not add more than a total of 10 mL 30% H_2O_2.

7.2.3 Cover the sample with a ribbed watch glass or vapor recovery device and continue heating the acid-peroxide digestate until the volume has been reduced to approximately 5 mL or heat at 95°C ± 5°C without boiling for two hours. Maintain a covering of solution over the bottom of the vessel at all times.

NOTE: Alternatively, for direct energy coupled devices: Heat the acid-peroxide digestate to 95°C ± 5°C in 6 minutes and remain at 95°C ± 5°C without boiling for 10 minutes.

7.2.4 After cooling, dilute to 100 mL with water. Particulates in the digestate should then be removed by filtration, by centrifugation, or by allowing the sample to settle. The sample is now ready for analysis by GFAA or ICP-MS.

7.2.4.1 Filtration - Filter through Whatman No. 41 filter paper (or equivalent).

7.2.4.2 Centrifugation - Centrifugation at 2,000-3,000 rpm for 10 minutes is usually sufficient to clear the supernatant.

7.2.4.3 The diluted digestate solution contains approximately 5% (v/v) HNO_3. For analysis, withdraw aliquots of appropriate volume and add any required reagent or matrix modifier.

7.3 For the analysis of samples for FLAA or ICP-AES, add 10 mL conc. HCl to the sample digest from 7.2.3 and cover with a watch glass or vapor recovery device. Place the sample on/in the heating source and reflux at 95°C ± 5°C for 15 minutes.

NOTE: Alternatively, for direct energy coupling devices, such as a microwave, digest samples for analysis by FLAA and ICP-AES by adding 5 mL HCl and 10 mL H_2O to the sample digest from 7.2.3 and heat the sample to 95°C ± 5°C, Reflux at 95°C ± 5°C without boiling for 5 minutes.

7.4 Filter the digestate through Whatman No. 41 filter paper (or equivalent) and collect filtrate in a 100-mL volumetric flask. Make to volume and analyze by FLAA or ICP-AES.

NOTE: Section 7.5 may be used to improve the solubilities and recoveries of antimony, barium, lead, and silver when necessary. These steps are optional and are not required on a routine basis.

7.5 Add 2.5 mL conc. HNO_3 and 10 mL conc. HCl to a 1-2 g sample (wet weight) or 1 g sample (dry weight) and cover with a watchglass or vapor recovery device. Place the sample on/in the heating source and reflux for 15 minutes.

7.5.1 Filter the digestate through Whatman No. 41 filter paper (or equivalent) and collect filtrate in a 100-mL volumetric flask. Wash the filter paper, while still in the funnel, with no more than 5 mL of hot (~95°C) HCl, then with 20 mL of hot (~95°C) reagent water. Collect washings in the same 100-mL volumetric flask.

7.5.2 Remove the filter and residue from the funnel, and place them back in the vessel. Add 5 mL of conc. HCl, place the vessel back on the heating source, and heat at 95°C ± 5°C until the filter paper dissolves. Remove the vessel from the heating source and wash the cover and sides with reagent water. Filter the residue and collect the filtrate in the same 100-mL volumetric flask. Allow filtrate to cool, then dilute to volume.

NOTE: High concentrations of metal salts with temperature-sensitive solubilities can result in the formation of precipitates upon cooling of primary and/or secondary filtrates. If precipitation occurs in the flask upon cooling, do not dilute to volume.

7.5.3 If a precipitate forms on the bottom of a flask, add up to 10 mL of concentrated HCl to dissolve the precipitate. After precipitate is dissolved, dilute to volume with reagent water. Analyze by FLAA or ICP-AES.

7.6 Calculations

7.6.1 The concentrations determined are to be reported on the basis of the actual weight of the sample. If a dry weight analysis is desired, then the percent solids of the sample must also be provided.

7.6.2 If percent solids is desired, a separate determination of percent solids must be performed on a homogeneous aliquot of the sample.

8.0 QUALITY CONTROL

8.1 All quality control measures described in Chapter One should be followed.

8.2 For each batch of samples processed, a method blank should be carried throughout the entire sample preparation and analytical process according to the frequency described in Chapter One. These blanks will be useful in determining if samples are being contaminated. Refer to Chapter One for the proper protocol when analyzing method blanks.

8.3 Spiked duplicate samples should be processed on a routine basis and whenever a new sample matrix is being analyzed. Spiked duplicate samples will be used to determine precision and bias. The criteria of the determinative method will dictate frequency, but 5% (one per batch) is recommended or whenever a new sample matrix is being analyzed. Refer to Chapter One for the proper protocol when analyzing spiked replicates.

8.4 Limitations for the FLAA and ICP-AES optional digestion procedure. Analysts should be aware that the upper linear range for silver, barium, lead, and antimony may be exceeded with some samples. If there is a reasonable possibility that this range may be exceeded, or if a sample's analytical result exceeds this upper limit, a smaller sample size should be taken through the entire procedure and re-analyzed to determine if the linear range has been exceeded. The approximate linear upper ranges for a 2 gram sample size:

Ag	2,000 mg/kg
As	1,000,000 mg/kg
Ba	2,500 mg/kg
Be	1,000,000 mg/kg
Cd	1,000,000 mg/kg
Co	1,000,000 mg/kg
Cr	1,000,000 mg/kg
Cu	1,000,000 mg/kg
Mo	1,000,000 mg/kg
Ni	1,000,000 mg/kg
Pb	200,000 mg/kg
Sb	200,000 mg/kg
Se	1,000,000 mg/kg
Tl	1,000,000 mg/kg
V	1,000,000 mg/kg
Zn	1,000,000 mg/kg

NOTE: These ranges will vary with sample matrix, molecular form, and size.

9.0 METHOD PERFORMANCE

9.1 In a single laboratory, the recoveries of the three matrices presented in Table 2 were obtained using the digestion procedure outlined for samples prior to analysis by FLAA and ICP-AES. The spiked samples were analyzed in duplicate. Tables 3-5 represents results of analysis of NIST Standard Reference Materials that were obtained using both atmospheric pressure microwave digestion techniques and hot-plate digestion procedures.

10.0 REFERENCES

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7. Kimbrough, David E., and Wakakuwa, Janice R. A Study of the Linear Ranges of Several Acid Digestion Procedures, Sixth Annual Waste Testing and Quality Assurance Symposium, Reprinted in Solid Waste Testing and Quality Assurance: Fourth Volume, ASTM STP 1076, Ed., American Society for Testing and Materials, Philadelphia, 1992.

8. NIST published leachable concentrations. Found in addendum to certificate of analysis for SRMs 2709, 2710, 2711 - August 23, 1993.

9. Kingston, H.M. Haswell, S.J. ed., Microwave Enhanced Chemistry, Professional Reference Book Series, American Chemical Society, Washington, D.C., Chapter 3, 1997.

TABLE 1

STANDARD RECOVERY (%) COMPARISON FOR
METHODS 3050A AND 3050B[a]

Analyte	METHOD 3050A[a]	METHOD 3050B w/option[a]
Ag	9.5	98
As	86	102
Ba	97	103
Be	96	102
Cd	101	99
Co	99	105
Cr	98	94
Cu	87	94
Mo	97	96
Ni	98	92
Pb	97	95
Sb	87	88
Se	94	91
Tl	96	96
V	93	103
Zn	99	95

[a] All values are percent recovery. Samples: 4 mL of 100 mg/mL multistandard; n = 3.

TABLE 2

PERCENT RECOVERY COMPARISON FOR METHODS 3050A AND 3050B

Analyte	Percent Recovery[a,c]							
	Sample 4435		Sample 4766		Sample HJ		Average	
	3050A	3050B	3050A	3050B	3050A	3050B	3050A	3050B
Ag	9.8	103	15	89	56	93	27	95
As	70	102	80	95	83	102	77	100
Ba	85	94	78	95	b	b	81	94
Be	94	102	108	98	99	94	99	97
Cd	92	88	91	95	95	97	93	94
Co	90	94	87	95	89	93	89	94
Cr	90	95	89	94	72	101	83	97
Cu	81	88	85	87	70	106	77	94
Mo	79	92	83	98	87	103	83	98
Ni	88	93	93	100	87	101	92	98
Pb	82	92	80	91	77	91	81	91
Sb	28	84	23	77	46	76	32	79
Se	84	89	81	96	99	96	85	94
Tl	88	87	69	95	66	67	74	83
V	84	97	86	96	90	88	87	93
Zn	96	106	78	75	b	b	87	99

a - Samples: 4 mL of 100 mg/mL multi-standard in 2 g of sample. Each value is percent recovery and is the average of duplicate spikes.

b - Unable to accurately quantitate due to high background values.

c - Method 3050B using optional section.

Table 3
Results of Analysis of Nist Standard Reference Material 2704
"River Sediment" Using Method 3050B (µg/g ± SD)

Element	Atm. Pressure Microwave Assisted Method with Power Control	Atm. Pressure Microwave Assisted Method with Temperature Control (gas-bulb)	Atm. Pressure Microwave Assisted Method with Temperature Control (IR-sensor)	Hot-Plate	NIST Certified Values for Total Digestion (µg/g ±95% CI)
Cu	101 ± 7	89 ± 1	98 ± 1.4	100 ± 2	98.6 ± 5.0
Pb	160 ± 2	145 ± 6	145 ± 7	146 ± 1	161 ± 17
Zn	427 ± 2	411 ± 3	405 ± 14	427 ± 5	438 ± 12
Cd	NA	3.5 ± 0.66	3.7 ± 0.9	NA	3.45 ± 0.22
Cr	82 ± 3	79 ± 2	85 ± 4	89 ± 1	135 ± 5
Ni	42 ± 1	36 ± 1	38 ± 4	44 ± 2	44.1 ± 3.0

NA - Not Available

Table 4
Results of Analysis of NIST Standard Reference Material 2710
"Montana Soil (Highly Elevated Trace Element Concentrations)" Using Method 3050B
(µg/g ± SD)

Element	Atm. Pressure Microwave Assisted Method with Power Control	Atm. Pressure Microwave Assisted Method with Temperature Control (gas-bulb)	Atm. Pressure Microwave Assisted Method with Temperature Control (IR-sensor)	Hot-Plate	NIST Leachable Concentrations Using Method 3050	NIST Certified Values for Total Digestion (µg/g ±95% CI)
Cu	2640 ± 60	2790 ± 41	2480 ± 33	2910 ± 59	2700	2950 ± 130
Pb	5640 ± 117	5430 ± 72	5170 ± 34	5720 ± 280	5100	5532 ± 80
Zn	6410 ± 74	5810 ± 34	6130 ± 27	6230 ± 115	5900	6952 ± 91
Cd	NA	20.3 ± 1.4	20.2 ± 0.4	NA	20	21.8 ± 0.2
Cr	20 ± 1.6	19 ± 2	18 ± 2.4	23 ± 0.5	19	39*
Ni	7.8 ± 0.29	10 ± 1	9.1 ± 1.1	7 ± 0.44	10.1	14.3 ± 1.0

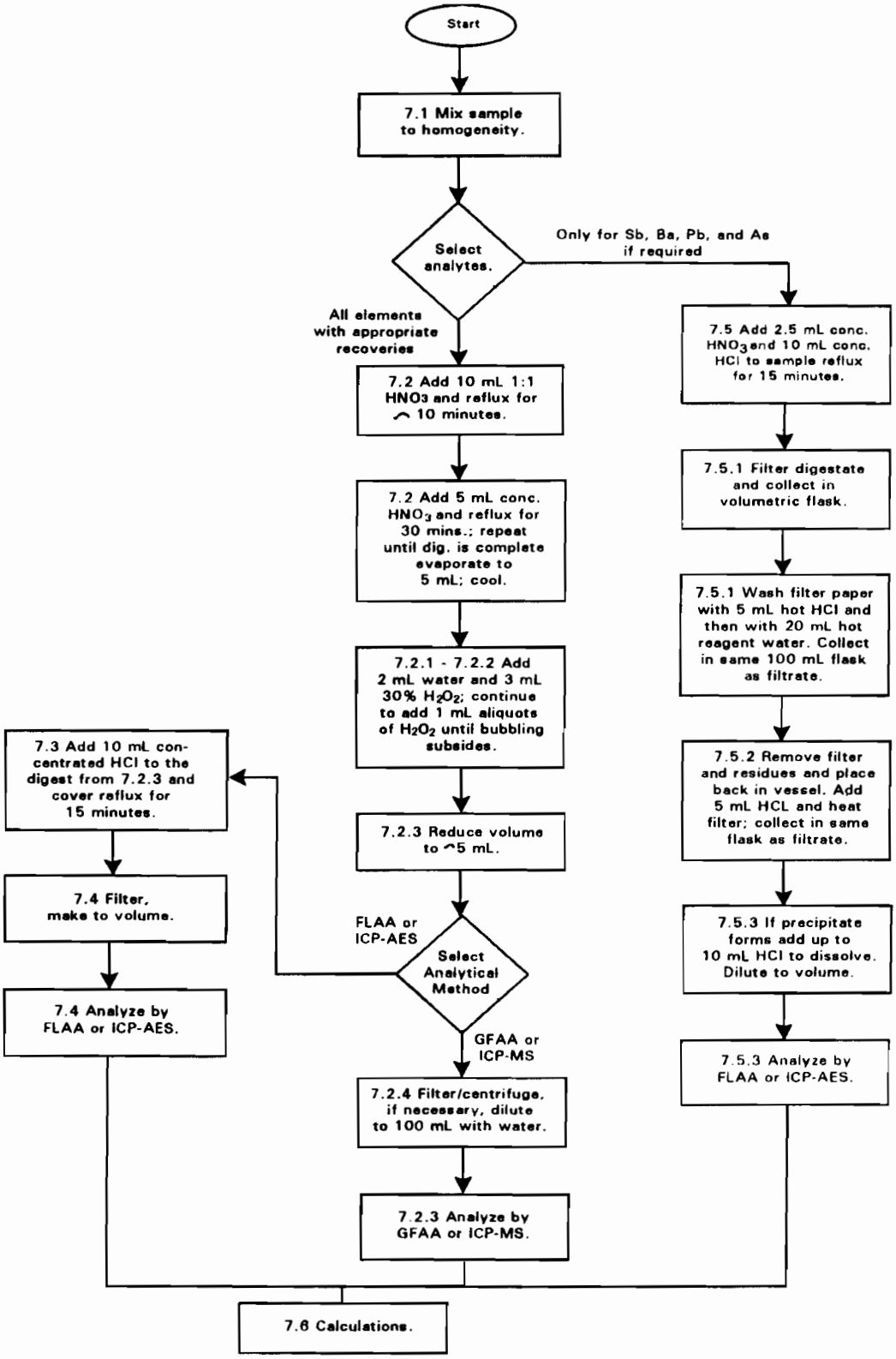
NA - Not Available * Non-certified values, for information only.

Table 5
Results of Analysis of NIST Standard Reference Material 2711
"Montana Soil (Moderately Elevated Trace Element Concentrations)" Using Method 3050B
(µg/g ± SD)

Element	Atm. Pressure Microwave Assisted Method with Power Control	Atm. Pressure Microwave Assisted Method with Temperature Control (gas-bulb)	Atm. Pressure Microwave Assisted Method with Temperature Control (IR-sensor)	Hot-Plate	NIST Leachable Concentrations Using Method 3050	NIST Certified Values for Total Digestion (µg/g ±95% CI)
Cu	107 ± 4.6	98 ± 5	98 ± 3.8	111 ± 6.4	100	114 ± 2
Pb	1240 ± 68	1130 ± 20	1120 ± 29	1240 ± 38	1100	1162 ± 31
Zn	330 ± 17	312 ± 2	307 ± 12	340 ± 13	310	350.4 ± 4.8
Cd	NA	39.6 ± 3.9	40.9 ± 1.9	NA	40	41.7 ± 0.25
Cr	22 ± 0.35	21 ± 1	15 ± 1.1	23 ± 0.9	20	47*
Ni	15 ± 0.2	17 ± 2	15 ± 1.6	16 ± 0.4	16	20.6 ± 1.1

NA - Not Available
* Non-certified values, for information only.

METHOD 3050B
ACID DIGESTION OF SEDIMENTS, SLUDGES, AND SOILS



POWERTECH (USA) INC.

APPENDIX 2.9-E

EPA Method 909

1860

Determination of Lead-210 in Drinking Water

Method 909.0

Richard J. Velten

and

Betty J. Jacobs

Environmental Monitoring and Support Laboratory

U. S. Environmental Protection Agency

Cincinnati, Ohio 45268

March 1982

U.S. Environmental Protection Agency
REGION I LIBRARY
2100-B JFK Federal Building
Boston, MA 02203

Determination of Lead-210 in Drinking Water

Method 909.0

1. Scope and Application

1.1. Lead-210 is not regulated by the National Interim Primary Drinking Water Regulations (NIPDWR). However, based upon its maximum permissible concentration (MPC) published in NBS Handbook 69, the maximum concentration level (MCL) calculated by applying the formula in the NIPDWR would be 1 pCi/L or less, depending upon the choice of critical organ.

1.2 The sensitivity of the method as defined in the NIPDWR is approximately 0.7 pCi/L for a one liter sample size using liquid scintillation counting and 0.2 pCi/L using a low background beta counter.

2. Summary of Method

2.1 Lead carrier is added and concentrated by precipitation as the chromate. It is further purified from its bismuth-210 daughter by selected dissolution of lead sulfide from a 1.5N hydrochloric acid solution. Lead is finally converted to the carbonate and the lead-210 concentration calculated by either counting the lead-210 beta emission by liquid scintillation technique or counting the ingrown bismuth-210 daughter activity by low background end window counting.

3. Sample Handling and Preservation

3.1 If the sample cannot be analyzed within 24 hours, it is recommended

that the sample be preserved using nitric acid to a concentration of 0.01N (pH 2).

4. Interferences

4.1 Lead-214 will not interfere as the time delay from lead separation and counting (10 half lives) allows for its total decay.

4.2 Lead-212 can interfere with the lead-210 determination and cause a positively biased result. However, a 2 to 3 day storage at the end of Step 8.14 will allow for sufficient decay.

5. Apparatus

5.1 Liquid scintillation counter or low background beta counter

5.2 Millipore 300 mL ground glass filtering assembly

5.3 Membrane filter (PVC), e.g., Gelman 64515

5.4 Centrifuge

5.5 40 mL cone bottom centrifuge tubes

5.6 2.8 cm fiber glass filters

5.7 Convection oven.

6. Reagents

6.1 Acetic acid, glacial

6.2 Ammonium carbonate, 1.5M. Dissolve 144 g ammonium carbonate in 300 mL of water and dilute to 500 mL.

6.3 Ammonium hydroxide, 6M. Transfer 400 mL of concentrated ammonium hydroxide (30%) to 500 mL water and dilute to 1000 mL with water.

6.4 Barium carrier, 5 mg Ba^{++}/mL. Dissolve 4.4713 g of $BaCl_2 \cdot 2H_2O$ in water and dilute to 500 mL.

6.5 Bismuth carrier, 5 mg Bi^{+++}/mL. Dissolve 5.8026 g of $Bi(NO_3)_3 \cdot 5H_2O$ in 1 M HNO_3 and dilute to 500 mL with 1 M HNO_3.

6.6 Hexanoic acid, practical.

6.7 Hydrochloric acid, 12 M.

6 M - Transfer 500 mL of concentrated acid to 400 mL of water and dilute to 1000 mL with water.

1.5 M - Transfer 125 mL of concentrated acid to 700 mL of water and dilute to 1000 mL with water.

6.8 Hydrogen sulfide gas, lecture bottle.

6.9 Lead carrier, 10 mg Pb^{++}/mL. Dissolve 4 grams $Pb(NO_3)_2$ in 250 ml of 0.1 M HNO_3.

6.10 Scintillation solution. Commercially prepared universal liquid scintillation cocktail for aqueous and non-aqueous samples.

6.11 Sodium chromate, 1.5M. Dissolve 175 g of sodium chromate tetrahydrate in 350 mL water and dilute to 500 mL with water.

6.12 Sodium nitrite, 1 M. Dissolve 6.9 g of sodium nitrite in 70 mL water and dilute to 100 mL with water.

6.13 Toluene, reagent grade.

6.14 Water/ethanol wash solution, 1:1. Mix 200 mL of ethanol with 200 mL of water.

7. Calibration and standardization

7.1 Lead carrier solution

7.1.1 Transfer 10 mL of the lead carrier solution to a 150 mL beaker and dilute to 75 mL.

7.1.2 Add 1-2 drops of methyl orange indicator and neutralize by the dropwise addition of 6M NH_4OH.

7.1.3 Reacidify with 2 mL of glacial acetic acid and heat to near boiling.

7.1.4 Slowly bubble H_2S gas into the solution for 3-4 minutes.

7.1.5 Remove H_2S source and heat the solution to just boiling. Cool.

7.1.6 Filter through a tared fritted glass filtering funnel of fine porosity.

7.1.7 Wash several times with 10 mL portion of water.

7.1.8 Dry at 105-110°C. Cool and weigh.

7.2 Counter Efficiency

7.2.1 Transfer 1 mL each of the lead and bismuth carrier to a 40 mL cone bottom centrifuge tube.

7.2.2 Add an aliquot of the lead-210 standard tracer solution approximating 1000 dpm.

7.2.3 Dilute to 20 mL and add 1-2 drops of methyl orange.

7.2.4 Neutralize by the dropwise addition of 6M NH_4OH.

7.2.5 Reacidify with 2 mL of glacial acetic acid.

7.2.6 Heat to near boiling in a hot water bath and slowly bubble H_2S gas into the solution for 2-3 minutes.

7.2.7 Remove H_2S source and continue boiling for 2-3 minutes. Remove from bath and cool.

7.2.8 Centrifuge and discard supernate.

7.2.9 Add 20 mL 1.5M HCl and heat to boiling in a water bath with intermittent stirring, breaking up all large sulfide lumps.

7.2.10 Cool and filter through a 2.8 cm glass fiber filter, saving the filtrate and noting the time of filtration.

7.2.11 Neutralize filtrate by adding 5-6 mL of 6 M NH_4OH using pH paper to verify.

7.2.12 Reacidify by adding 2 mL of glacial acetic acid.

7.2.13 Heat to near boiling in a water bath and slowly bubble H_2S gas into the solution for 2-3 minutes.

7.2.14 Remove H_2S source and continue heating for 2-3 minutes. Cool.

7.2.15 Centrifuge and discard the supernate.

7.2.16 Add 3 mL 6M HCl and heat in a water bath to dissolve the sulfides.

7.2.17 Add 0.5 mL of 1M $NaNO_2$ to oxidize excess sulfide ions. Heat until effervescence ceases and dilute to 20 mL with water.

7.2.18 Filter through a 2.8 cm glass fiber filter, saving the filtrate.

7.2.19 Dropwise add 6M NH_4OH until a pearlescent precipitate persists. Then add 5 mL 1.5M ammonium carbonate solution.

7.2.20 Heat in a hot water bath with stirring until the excess ammonium carbonate begins to decompose (60^oC).

7.2.21 Cool and centrifuge, discarding the supernate.

7.2.22 Add 20 mL 1:1 water/ethanol wash solution breaking up the precipitate with a glass rod.

7.2.23 Filter through a tared 2.8 cm glass fiber filter, washing the tube and precipitate several times with 10 mL volume of the wash solution.

7.2.24 Dry filter at 105-110^oC. Cool and weigh.

7.3 Liquid Scintillation Counting

7.3.1 Place the weighed filter at the bottom of a glass scintillation vial with the precipitate facing upwards.

7.3.2 Add 0.5 mL each of glacial acetic acid and water. Evaporate to dryness in an oven at 120°C.

7.3.3 Cool and add 0.25 mL hexanoic acid wetting the filter completely. Add 3 mL of toluene and swirl occasionally over a period of 30 minutes to solubilize the lead hexanoate.

7.3.4 Add 10 mL of the scintillation solution, mix thoroughly and place in a liquid scintillation counter.

7.3.5 After 30 minutes, determine the beta spectrum of the lead-210 emissions.

7.3.6 Set the beta window to include about 95% of the beta emissions.

7.3.7 Count the standard over a period of two weeks at this window setting, noting the time of each count.

7.4 Low Background Beta Counter

7.4.1 Transfer the filter from step 7.2.24 to a planchet conforming to your standard counting geometry. (It would be desirable to cover the filter to prevent loss of precipitate).

7.4.2 Count the standard over a period of two weeks noting the time of each count.

8. Procedure

8.1 Acidify a 1-liter volume of a tap water sample with 25 mLs of glacial acetic acid.

8.2 Add 10 mgs of lead carrier and 5 mgs of the holdback carriers Bi and Ba. (Five mgs of these additional holdback carriers, Fe, Co, Ni, Ce, Mn, Sr, Zn, and Cu may be added when needed.)

8.3 With constant stirring, add 20 mLs of 0.5M sodium chromate.

8.4 Heat to 70° C on a hot plate with stirring until the precipitate is fully developed.

8.5 Remove from hot plate and cool in a cold water bath.

8.6 Filter with vacuum through a 47 mm 0.45 micron membrane filter.

8.7 Wash precipitate thoroughly with small quantities of distilled water.

8.8 Transfer the filter to a 40 mL cone bottom centrifuge tube and dropwise add 1 mL of conc. HCl contacting the precipitate and heat in a boiling water bath to reduce the chromate and dissolve the precipitate. Dilute to 20 mL with water.

8.9 Remove filter and wash with 10 mL water, adding the wash to the centrifuge tube.

8.10 Add sufficient 6M ammonium hydroxide to neutralize the acid.

8.11 Add 2 mL glacial acetic acid and place centrifuge tube in a boiling water bath for 2-3 minutes.

8.12 Carefully bubble a slight stream of hydrogen sulfide gas into the solution for 2-3 minutes to completely precipitate the lead.

8.13 Remove the hydrogen sulfide source and continue boiling for 5 minutes.

8.14 Remove from the water bath, cool, and centrifuge, discarding the supernate.

8.15 Add 20 mL 1.5N HCl to selectively dissolve PbS, heating in a boiling water bath. (Precipitate is nearly completely solubilized).

8.16 Filter through a 2.8 cm glass fiber filter to remove the Bi_2S_3 precipitate, collecting the filtrate in a clean 40 mL centrifuge tube. (Note time as initial Pb-210 separation.)

8.17 Neutralize by the addition of 5-6 mL 6M NH_4OH. Add 2 mL glacial

acetic acid and reprecipitate the PbS using H_2S gas, heating in a boiling water bath.

8.18 Cool, centrifuge and discard supernate.

8.19 Add 3 mL 6M HCl to dissolve the sulfides and heat in a boiling water bath. Add 0.5 mL 1M sodium nitrite and heat in a hot water bath until effervescence ceases. Remove from water bath and dilute to 20 mL with water.

8.20 Filter through a fiber glass filter to remove any precipitated sulfur or other insolubles into a clean 40 mL cone bottom centrifuge tube. Wash with 10 mL water.

8.21 Add sufficient 6M ammonium hydroxide to neutralize the acid.

8.22 Add 5 mL of 1.5M ammonium carbonate.

8.23 Heat in a boiling water bath for 3 minutes, remove and cool.

8.24 Centrifuge and discard the supernate.

8.25 Wash precipitate with 15 mL of 1:1 water:ethanol solution.

8.26 Filter through a tared 2.8 cm fiber glass filter and rinse with 10 mL 1:1 water/ethanol solution.

8.27 Dry at 105°C, cool and weigh to determine lead carrier recovery. (If liquid scintillation counting is to be used, continue at step 8.28. If Low Background Beta counting is to be used, continue at step 8.33).

8.28 Place filter at the bottom of scintillation vial with the precipitate facing upwards.

8.29 Add 0.5 mL glacial acetic acid and 0.5 mL water and take to dryness in a 120°C oven.

8.30 Cool and add 0.25 mL of hexanoic acid and 3 mL toluene. Mix and let stand for 20 minutes with occasional mixing.

8.31 Add 10 mL of scintillation solution. Mix throughly and place sample into the liquid scintillation counter.

8.32 Using the predetermined window setting for counting only the lead-210 beta emissions, count for sufficient time to meet the method detection limit.

8.33 Place the filter on a planchet conforming to your standard geometry. (It would be desirable to cover the filter to prevent loss of precipitate during storage.)

8.34 Store for about 2 weeks to allow sufficient Bi-210 ingrowth.

8.35 Place in the counter and count for sufficient time to meet the method detection limit and note time of count.

9. Calculation

9.1 Lead standardization

$$\text{Lead, mg/mL} = \frac{\text{mg PbS} \times 0.86599}{10}$$

9.2 Liquid scintillation counter

9.2.1 Bismuth-210 crosstalk (Z)

9.2.1.1 Determine the bismuth ingrowth factors, $(1-e^{-\lambda t})$ where t equals the time difference from time of separation (step 7.2.10) to time of counting for the various count times.

9.2.1.2 Plot the observed count rates as the ordinate against the ingrowth factors.

9.2.1.3 By linear least squares analysis, solve for the intercept, A, and slope, B. (The intercept is the count rate due to the lead-210 emission and the slope is the count rate due to the amount of the

for the various count times where t is the time difference between time of separation and time of count.

9.3.1.2 Plot the observed count rates as the ordinate against the ingrowth factors.

9.3.1.3 By linear least square analysis solve for the intercept A and slope B. (The intercept A represents the count rate due to lead-210 and the slope B represents the count rate of bismuth-210 at equilibrium.)

9.3.1.4 Efficiency determination

Lead-210 efficiency, E_1 = A/dpm recovered

Bismuth-210 efficiency, E_2 = B/dpm recovered

Total efficiency = $E_1 + E_2 (1 - e^{-\lambda t})$

9.3.2 Concentration

$$\text{Lead-210 concentration pCi/L} = \frac{G - B}{V \times (E_1 + E_2(1 - e^{-\lambda t})) \times R \times 2.22}$$

where:

G = gross count rate in lead-210 window

B = background count rate

V = volume of sample, liter

E_1 = Lead-210 efficiency

E_2 = Bismuth-210 efficiency

$(1 - e^{-\lambda t})$ = Bismuth-210 ingrowth factor

R = chemical recovery

2.22 = constant (dpm/pCi)

10. Precision and Accuracy

10.1 Liquid scintillation counting

10.1.1 Accuracy

10.1.1.1 Four samples at lead-210 concentrations ranging from 0 to 41 pCi/L were analyzed. A plot and linear least square solution of pCi/L found versus pCi/L added showed that the intercept was not different from zero and that the slope showed a +1% bias.

10.1.1.2 Seven samples were also analyzed at a single concentration level (7.72 pCi/L). The average of the seven determinations was 7.96 pCi/L. This showed a +3% bias.

10.1.2 Precision

10.1.2.1 Based upon the seven replicate values at 7.72 pCi/L, the relative standard deviation was found to be ± 8%.

10.2 Low background beta counting

10.2.1 Accuracy

10.2.1.1 Eight samples were analyzed at a single concentration level of 7.72 pCi/l. The average concentration found was 7.85 pCi/l. This shows as +2% bias.

10.2. Precision

10.2.2.1 Based upon the eight replicate values at 7.72 pCi/l, the relative standard deviation was calculated to be ± 5%.

POWERTECH (USA) INC.

APPENDIX 2.9-F

Performance Evaluation for Analyzing Uranium in Soil Using EPA Method 6020A

PERFORMANCE EVALUATION

First Choice for Quality | RTC

Quarterly Study
LPTP08-S3

30-Jul-2008 through 12-Sep-2008

RT1014
RTC Labcode

WY00002
US EPA Labcode

Energy Labs
Jim Yocum
PO Box 3258
Casper WY 82602

Thank you for participating in study LPTP08-S3. Additional information about this study may be found online at www.rt-corp.co
If you have any questions or comments about this study please contact me.

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Sincerely,

Christopher Rucinski
Quality Director

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Laramie, WY 82070
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Trace Metals (continued)

Analysis
EPA 6020 (1994)
Mass Spectrometry - Inductively Coupled Plasma

(continued)
Method Number 10156000
Technology Code: ICP-MS

	Result	Units	Accept / Warn	Z	Evaluation
Aluminum, Al [1, 4] 1000 / 001 - Lot 013545	12600	mg/Kg	1370 to 29600	0.15	**Acceptable**
Antimony, Sb [1, 4] 1005 / 001 - Lot 013545	41.8	mg/Kg	0.00 to 170 0.00 to 134	-0.59	**Acceptable**
Arsenic, As [1, 4] 1010 / 001 - Lot 013545	136	mg/Kg	92.4 to 171 105 to 158	0.31	**Acceptable**
Barium, Ba [1, 4] 1015 / 001 - Lot 013545	562	mg/Kg	366 to 617 408 to 575	1.67	**Acceptable**
Beryllium, Be [1, 4] 1020 / 001 - Lot 013545	203	mg/Kg	163 to 267 180 to 250	-0.69	**Acceptable**
Boron, B [4, 5] 1025 / 001 - Lot 013545	157	mg/Kg	90.3 to 188	1.10	**Acceptable**
Cadmium, Cd [1, 4] 1030 / 001 - Lot 013545	61.2	mg/Kg	41.4 to 71.9 46.5 to 66.8	0.91	**Acceptable**
Chromium, Cr (total) [1, 4] 1040 / 001 - Lot 013545	334	mg/Kg	214 to 388 243 to 359	1.14	**Acceptable**
Cobalt, Co [1, 4] 1050 / 001 - Lot 013545	124	mg/Kg	80.5 to 136 89.7 to 127	1.73	**Acceptable**
Copper, Cu [1, 4] 1055 / 001 - Lot 013545	65.7	mg/Kg	44.4 to 77.7 50.0 to 72.1	0.83	**Acceptable**
Lead, Pb [1, 4] 1075 / 001 - Lot 013545	355	mg/Kg	238 to 389 263 to 364	1.63	**Acceptable**
Manganese, Mn [1, 4] 1090 / 001 - Lot 013545	727	mg/Kg	324 to 984	0.66	**Acceptable**
Molybdenum, Mo [1, 4] 1100 / 001 - Lot 013545	75.5	mg/Kg	45.8 to 89.2 52.9 to 89.2	1.17	**Acceptable**
Nickel, Ni [1, 4] 1105 / 001 - Lot 013545	220	mg/Kg	147 to 252 165 to 234	1.21	**Acceptable**
Selenium, Se [1, 4] 1140 / 001 - Lot 013545	312	mg/Kg	212 to 397 243 to 366	0.26	**Acceptable**
Silver, Ag [1, 4] 1150 / 001 - Lot 013545	100	mg/Kg	54.7 to 108 63.5 to 98.9	2.13	**Acceptable**
Strontium, Sr [4] 1160 / 001 - Lot 013545	139	mg/Kg	14.1 to 234	0.41	**Acceptable**
Thallium, Tl [1, 4] 1165 / 001 - Lot 013545	88.5	mg/Kg	46.6 to 96.3 54.9 to 88.0	2.07	**Acceptable**
Tin, Sn [1, 4] 1175 / 001 - Lot 013545	123	mg/Kg	52.4 to 162	0.87	**Acceptable**
Titanium, Ti [4] 1180 / 001 - Lot 013545	262	mg/Kg	100 to 466	-0.27	**Acceptable**
Vanadium, V [1, 4] 1185 / 001 - Lot 013545	348	mg/Kg	239 to 388 264 to 363	1.37	**Acceptable**

Trace Metals (continued)

(continued)
Method Number 10156000
Technology Code: ICP-MS

Analysis
EPA 6020 (1994)
Mass Spectrometry - Inductively Coupled Plasma

	Result Units	Accept /Warn	Z	Evaluation
Zinc, Zn [1,4] 1190 / 001 - Lot 013545	257 mg/Kg	179 to 326 203 to 301	0.20	**Acceptable**
Uranium, U[4] 3035 / 071 - Lot 013547	204 mg/Kg	138 to 256 158 to 236	0.36	**Acceptable**

POWERTECH (USA) INC.

APPENDIX 2.9-G

Testing Method used for Ra-226
Soil Sample Analysis

RESPONSE TO TR_RAIS FROM ERG

From: Dave Blaida [dblaida@energylab.com] **Sent:** Monday, July 26, 2010 8:59 AM **To:** Mike Schierman **Subject:** RE:

Mike,

My responses below.

Gross gamma is placed in our reports as a "placeholder", in short a way to show all the gammas when summed together. Since no other gammas were analyzed except bismuth 214/radium 226 the gross gamma radium 226 and the gross gamma would be identical on the report. Hopefully this will explain your concerns. If any further questions feel free to contact me.

Regards,

Dave Blaida

307.995.3207 direct

-----Original Message----- **From:** Mike Schierman [mailto:MikeSchierman@ergoffice.com] **Sent:** Sunday, July 25, 2010 16:46 **To:** dblaida@energylab.com **Subject:** FW:

David,

Please see the email I sent to Linda Larson of the Rapid City office. I received an out of office message stating she will be gone until August 6th. I was hoping you could help me prior to that.

Thanks

Mike Schierman, CHP

Senior Health Physicist

ERG

Environmental Restoration Group, Inc.
8809 Washington St. NE
Suite 150
Albuquerque, NM 87113
phone: (505) 298-4224
fax: (505) 797-1404
check us out at: http://www.ERGoffice.com

-----Original Message----- **From:** Mike Schierman **Sent:** Sunday, July 25, 2010 4:42 PM **To:** 'llarson@energylab.com' **Subject:**

Hi Linda,

We have received comments from the NRC regarding data collected at the Dewey-Burdock. Some of these involved chemical methods used by ELI and I have been able to respond to most of them. One I cannot respond is below. Could you please have the folks in Casper address this comment. We want to get all responses completed by the end of the month. Attached is the data specific to the question.

"Laboratory analytical reports for Ra-226 soil sample analyses are located in Appendix 2.9-A of the TR. It is not clear what type of gamma analysis was performed on the soil samples to determine the Ra-226 concentration.[Dave Blaida] EPA 901.1 is reference method. Closed can gamma analysis per a three(3) inch can filled with about 150-200 grams of soil. Soil is dried, ground, split. canned and taped. For example, the testing method for sample R07100004-003 (SMA-B03) is annotated as "Gross Gamma" on the Analytical Summary Report, but the results are listed as "Ra-226 Gamma" on the Laboratory Analytical Report.[Dave Blaida] The results are listed as radium 226 gamma which is ascertained by measuring the 609 kev peak of bismuth 214. Far and away the best photo peak to use since it's branching ratio(relative strength) is higher than any other pertinent energies. The radium 226 photo peak cannot be used due to it's overlap with the uranium 235 photo peak. Lead 214 has two(2) quantifiable energies at 295 and 352 kev that are used by some but bismuth 214 is cleaner with less background issues relating to Compton scatter. Consistent with Regulatory Guide 4.14, please provide laboratory documentation that specifies the photopeak energies used to determine the Ra-226 activity of the soil samples as reported in the Laboratory Analytical Report."

Thanks for your help.

Mike Schierman, CHP

Senior Health Physicist

ERG

Environmental Restoration Group, Inc.
8809 Washington St. NE
Suite 150
Albuquerque, NM 87113
phone: (505) 298-4224
fax: (505) 797-1404
check us out at: http://www.ERGoffice.com

APPENDIX 2.9-H

Sediment Sampling Analytical Results

SampleID	Sample Date	LabID	Page
BEN01S	06/08	R08060402-008	30
	08/08	R08080356-001	35
BVC01S	06/08	R08060341-002	5
	08/08	R08080356-012	46
BVC04S	06/08	R08060341-004	7
	08/08	R08080356-014	48
CHR01S	06/08	R08060341-003	6
	08/08	R08080356-013	47
CHR05S	06/08	R08060341-001	4
	08/08	R08080356-011	45
PSC01S	06/08	R08060341-005	8
	08/08	R08080356-010	44
PSC02S	06/08	R08060341-007	10
	08/08	R08080356-019	53
SUB01S	06/08	R08060358-001	15
	08/08	R08080356-018	52
SUB02S	06/08	R08060358-002	16
	08/08	R08080356-017	51
SUB03S	06/08	R08060358-003	17
	08/08	R08080356-008	42
SUB04S	06/08	R08060341-006	9
	08/08	R08080356-009	43
SUB05S	06/08	R08060358-004	18
	08/08	R08080356-007	41
SUB06S	06/08	R08060402-003	25
	08/08	R08080356-006	40
SUB07S	06/08	R08060402-004	26
	08/08	R08080356-005	39
SUB08S	06/08	R08060402-001	23
	08/08	R08080356-016	50
SUB09S	06/08	R08060402-002	24
	08/08	R08080356-015	49
SUB10S	06/08	R08060402-007	29
	08/08	R08080356-003	37
SUB11S	06/08	R08060402-005	27
	08/08	R08080356-004	38
UNT01S	06/08	R08060402-006	28
	08/08	R08080356-002	36

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ANALYTICAL SUMMARY REPORT

August 28, 2008

Cory Foreman
RESPEC Inc
3824 Jet Dr
Rapid City, SD 57701-

Workorder No.: R08060341 Quote ID: R279

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc. received the following 7 samples from RESPEC Inc on 6/18/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08060341-001	DewBurd CHR05S	06/17/08 10:40	06/18/08	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08060341-002	Dew Burd BVC01S	06/17/08 11:00	06/18/08	Sediment	Same As Above
R08060341-003	DewBurd CHR01S	06/17/08 11:35	06/18/08	Sediment	Same As Above
R08060341-004	DewBurd BVC04S	06/17/08 12:17	06/18/08	Sediment	Same As Above
R08060341-005	DewBurd PSC01S	06/17/08 12:50	06/18/08	Sediment	Same As Above
R08060341-006	DewBurd SUB04S	06/17/08 14:10	06/18/08	Sediment	Same As Above
R08060341-007	DewBurd PSC02S	06/17/08 15:30	06/18/08	Sediment	Same As Above

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

Linda Larson
Rapid City - Project Manager

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-001
Client Sample ID: DewBurd CHR05S

Report Date: 08/28/08
Collection Date: 06/17/08 10:40
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.7	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	2.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	1.9	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.4	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	6.2	mg/kg-dry		0.50		10	SW6020	07/07/08 22:23/eli-c
Uranium, Activity	4.2	pCi/g-dry		0.34		10	SW6020	07/07/08 22:23/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-002
Client Sample ID: Dew Burd BVC01S

Report Date: 08/28/08
Collection Date: 06/17/08 11:00
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.5	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	1.3	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	0.8	pCi/g-dry		0.1		1	E907.0	07/16/08 09:00/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/16/08 09:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.0	mg/kg-dry		0.50		10	SW6020	07/07/08 22:37/eli-c
Uranium, Activity	1.4	pCi/g-dry		0.34		10	SW6020	07/07/08 22:37/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-003
Client Sample ID: DewBurd CHR01S

Report Date: 08/28/08
Collection Date: 06/17/08 11:35
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.2	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	1.0	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	1.7	mg/kg-dry		0.50		10	SW6020	07/07/08 22:43/eli-c
Uranium, Activity	1.2	pCi/g-dry		0.34		10	SW6020	07/07/08 22:43/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-004
Client Sample ID: DewBurd BVC04S

Report Date: 08/28/08
Collection Date: 06/17/08 12:17
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.9	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	1.5	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	2.0	mg/kg-dry		0.50		10	SW6020	07/07/08 22:50/eli-c
Uranium, Activity	1.3	pCi/g-dry		0.34		10	SW6020	07/07/08 22:50/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-005
Client Sample ID: DewBurd PSC01S

Report Date: 08/28/08
Collection Date: 06/17/08 12:50
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	4.7	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	2.9	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	2.0	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	3.9	mg/kg-dry		0.50		10	SW6020	07/07/08 22:57/eli-c
Uranium, Activity	2.6	pCi/g-dry		0.34		10	SW6020	07/07/08 22:57/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-006
Client Sample ID: DewBurd SUB04S

Report Date: 08/28/08
Collection Date: 06/17/08 14:10
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	2.5	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	0.9	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	6.5	mg/kg-dry		0.50		10	SW6020	07/07/08 23:03/eli-c
Uranium, Activity	4.4	pCi/g-dry		0.34		10	SW6020	07/07/08 23:03/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060341-007
Client Sample ID: DewBurd PSC02S

Report Date: 08/28/08
Collection Date: 06/17/08 15:30
Date Received: 06/18/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.2	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	0.4	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.1	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	1.1	mg/kg-dry		0.50		10	SW6020	07/07/08 23:31/eli-c
Uranium, Activity	0.76	pCi/g-dry		0.34		10	SW6020	07/07/08 23:31/eli-c

Report Definitions:
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 08/28/08
Work Order: R08060341

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: C_18954
Sample ID: C08061146-004AMS	Sample Matrix Spike				Run: SUB-C104563				07/16/08 15:36
Radium 226	7.7	pCi/g-dry		100	70	130			
Sample ID: C08061146-004AMSD	Sample Matrix Spike Duplicate				Run: SUB-C104563				07/16/08 15:36
Radium 226	8.7	pCi/g-dry		125	70	130	12	20.9	
Sample ID: LCS-18954	Laboratory Control Sample				Run: SUB-C104563				07/16/08 15:36
Radium 226	0.017	pCi/g-dry		117	70	130			
Sample ID: MB-18954	Method Blank				Run: SUB-C104563				07/16/08 15:36
Radium 226	-0.002	pCi/g-dry							U
Method: E907.0									Batch: C_R104773
Sample ID: C08061133-004AMS	Sample Matrix Spike				Run: SUB-C104773				07/14/08 21:06
Thorium 230	7.06	pCi/g-dry	0.10	101	70	130			
Sample ID: C08061133-004AMSD	Sample Matrix Spike Duplicate				Run: SUB-C104773				07/14/08 21:06
Thorium 230	8.02	pCi/g-dry	0.10	124	70	130	13	30	
Sample ID: LCS-18954	Laboratory Control Sample				Run: SUB-C104773				07/15/08 12:58
Thorium 230	0.0531	pCi/g-dry	0.10	119	70	130			
Sample ID: MB-18954	Method Blank				Run: SUB-C104773				07/15/08 12:58
Thorium 230	0.0003	pCi/g-dry							U
Method: E909.0M									Batch: C_18954
Sample ID: R08060341-006A	Sample Matrix Spike				Run: SUB-C105490				07/15/08 08:30
Lead 210	47.2	pCi/g-dry		81	70	130			
Sample ID: R08060341-006A	Sample Matrix Spike Duplicate				Run: SUB-C105490				07/15/08 08:30
Lead 210	40.6	pCi/g-dry		70	70	130	15	30	
Sample ID: MB-R105490	Method Blank				Run: SUB-C105490				07/15/08 08:30
Lead 210	0.002	pCi/g-dry							U
Sample ID: LCS-R105490	Laboratory Control Sample				Run: SUB-C105490				07/15/08 08:30
Lead 210	0.111	pCi/g-dry		93	70	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 08/28/08
Work Order: R08060341

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Batch: C_18973
Sample ID: MB-18973	Method Blank				Run: SUB-C103823				07/07/08 22:10
Uranium	2E-05	mg/kg-dry	1E-06						
Sample ID: LCS3-18973	Laboratory Control Sample				Run: SUB-C103823				07/07/08 22:16
Uranium	1.8	mg/kg-dry	1.5	105	87.9	127			
Sample ID: C08061115-013AMS3	Sample Matrix Spike				Run: SUB-C103823				07/08/08 01:25
Uranium	26	mg/kg-dry	0.50	104	75	125			
Sample ID: C08061115-013AMSD3	Sample Matrix Spike Duplicate				Run: SUB-C103823				07/08/08 01:32
Uranium	27	mg/kg-dry	0.50	110	75	125	5.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name: RESPEC	Project Name, PWS, Permit, Etc.: Tower Tech Dewey Burdock	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax: Cory-foreman@respec.com	Email:	Sampler: (Please Print) Eric Kuntz
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

As per Quote

SEE ATTACHED

Normal Turnaround (TAT)

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: all sediment samples

Shipped by:

Cooler ID(s):

Receipt Temp 4.2 °C

On Ice: (Yes) No

Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX		LABORATORY USE ONLY
1	DewBurd CHR05s	6/17/08	10:40	S	Chey R. @ Marietta sediment	L0806341-001A
2	DewBurd BVC01s	6/17/08	11:00	S	Beaver Cr @ Anderson sediment	002A
3	DewBurd CHR01s	6/17/08	11:35	S	Chey @ Anderson sediment	003A
4	DewBurd BVC04s	6/17/08	12:17	S	Beaver Cr @ US 85 sediment	004A
5	DewBurd PSC01s	6/17/08	12:50	S	Pass Cr. spencer sediment	005A
6	DewBurd Sub04s	6/17/08	14:10	S	Cotton wood pond sediment	006A
7	DewBurd PSC02s	6/17/08	15:50	S	Pass Cr US 85 sediment	007A
8						
9						
10						

Custody Record MUST be Signed

Relinquished by (print): Eric Kuntz	Date/Time: 6/12/08 0620	Signature:	Received by (print): Matt Stallenberg	Date/Time: 6/13-0806:30	Signature:
Relinquished by (print): Matt Stallenberg	Date/Time: 6/12/08 8:50	Signature:	Received by (print): Steve Troiano	Date/Time: 6-13-08 8:50	Signature:
Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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ANALYTICAL SUMMARY REPORT

August 28, 2008

Cory Foreman
RESPEC Inc
3824 Jet Dr
Rapid City, SD 57701-

Workorder No.: R08060358 Quote ID: R279

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc. received the following 4 samples from RESPEC Inc on 6/19/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08060358-001	DewBurd SUB01S	06/18/08 12:05	06/19/08	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08060358-002	DewBurd SUB02S	06/18/08 13:15	06/19/08	Sediment	Same As Above
R08060358-003	DewBurd SUB03S	06/18/08 14:10	06/19/08	Sediment	Same As Above
R08060358-004	DewBurd SUB05S	06/18/08 15:15	06/19/08	Sediment	Same As Above

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By: Linda Larson

Linda Larson
Rapid City - Project Manager

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060358-001
Client Sample ID: DewBurd SUB01S

Report Date: 08/28/08
Collection Date: 06/18/08 12:05
Date Received: 06/19/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.5	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	1.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	2.2	mg/kg-dry		0.50		10	SW6020	07/19/08 08:23/eli-c
Uranium, Activity	1.5	pCi/g-dry		0.34		10	SW6020	07/19/08 08:23/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060358-002
Client Sample ID: DewBurd SUB02S

Report Date: 08/28/08
Collection Date: 06/18/08 13:15
Date Received: 06/19/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.8	pCi/g-dry	U			1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	3.9	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 13:33/eli-c
Thorium 230	2.9	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.7	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	18	mg/kg-dry		0.50		10	SW6020	07/19/08 08:36/eli-c
Uranium, Activity	12	pCi/g-dry		0.34		10	SW6020	07/19/08 08:36/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060358-003
Client Sample ID: DewBurd SUB03S

Report Date: 08/28/08
Collection Date: 06/18/08 14:10
Date Received: 06/19/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	3.9	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	4.1	pCi/g-dry				1	E903.0	07/16/08 15:36/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	07/16/08 15:36/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 15:36/eli-c
Thorium 230	2.1	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.6	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	7.2	mg/kg-dry		0.50		10	SW6020	07/19/08 08:43/eli-c
Uranium, Activity	4.8	pCi/g-dry		0.34		10	SW6020	07/19/08 08:43/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060358-004
Client Sample ID: DewBurd SUB05S

Report Date: 08/28/08
Collection Date: 06/18/08 15:15
Date Received: 06/19/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	4.2	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/15/08 08:30/eli-c
Radium 226	4.2	pCi/g-dry				1	E903.0	07/16/08 15:36/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	07/16/08 15:36/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/16/08 15:36/eli-c
Thorium 230	2.4	pCi/g-dry		0.1		1	E907.0	07/14/08 21:06/eli-c
Thorium 230 precision (±)	0.5	pCi/g-dry				1	E907.0	07/14/08 21:06/eli-c
TOTAL METALS ANALYSES								
Uranium	8.5	mg/kg-dry		0.50		10	SW6020	07/19/08 09:17/eli-c
Uranium, Activity	5.7	pCi/g-dry		0.34		10	SW6020	07/19/08 09:17/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 08/28/08
Work Order: R08060358

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: C_18954
Sample ID: C08061146-004AMS	Sample Matrix Spike				Run: SUB-C104563				07/16/08 15:36
Radium 226	7.7	pCi/g-dry		100	70	130			
Sample ID: C08061146-004AMSD	Sample Matrix Spike Duplicate				Run: SUB-C104563				07/16/08 15:36
Radium 226	8.7	pCi/g-dry		125	70	130	12	20.9	
Sample ID: LCS-18954	Laboratory Control Sample				Run: SUB-C104563				07/16/08 15:36
Radium 226	0.017	pCi/g-dry		117	70	130			
Sample ID: MB-18954	Method Blank				Run: SUB-C104563				07/16/08 15:36
Radium 226	-0.002	pCi/g-dry							U
Method: E907.0									Batch: C_R104773
Sample ID: C08061133-004AMS	Sample Matrix Spike				Run: SUB-C104773				07/14/08 21:06
Thorium 230	7.06	pCi/g-dry	0.10	101	70	130			
Sample ID: C08061133-004AMSD	Sample Matrix Spike Duplicate				Run: SUB-C104773				07/14/08 21:06
Thorium 230	8.02	pCi/g-dry	0.10	124	70	130	13	30	
Sample ID: LCS-18954	Laboratory Control Sample				Run: SUB-C104773				07/15/08 12:58
Thorium 230	0.0531	pCi/g-dry	0.10	119	70	130			
Sample ID: MB-18954	Method Blank				Run: SUB-C104773				07/15/08 12:58
Thorium 230	0.0003	pCi/g-dry							U
Method: E909.0M									Batch: C_18954
Sample ID: R08060341-006A	Sample Matrix Spike				Run: SUB-C105490				07/15/08 08:30
Lead 210	47.2	pCi/g-dry		81	70	130			
Sample ID: R08060341-006A	Sample Matrix Spike Duplicate				Run: SUB-C105490				07/15/08 08:30
Lead 210	40.6	pCi/g-dry		70	70	130	15	30	
Sample ID: MB-R105490	Method Blank				Run: SUB-C105490				07/15/08 08:30
Lead 210	0.002	pCi/g-dry							U
Sample ID: LCS-R105490	Laboratory Control Sample				Run: SUB-C105490				07/15/08 08:30
Lead 210	0.111	pCi/g-dry		93	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 08/28/08
Work Order: R08060358

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **SW6020**									Batch: C_18974
Sample ID: **MB-18974**	Method Blank				Run: SUB-C103886				07/08/08 15:05
Uranium	5E-06	mg/kg-dry	1E-06						
Sample ID: **LCS3-18974**	Laboratory Control Sample				Run: SUB-C103886				07/08/08 15:11
Uranium	1.7	mg/kg-dry	0.50	99	87.9	127			
Sample ID: **C08061115-022A MS3**	Sample Matrix Spike				Run: SUB-C104503				07/19/08 09:58
Uranium	31	mg/kg-dry	0.50	119	75	125			
Sample ID: **C08061115-022A MSD3**	Sample Matrix Spike Duplicate				Run: SUB-C104503				07/19/08 10:04
Uranium	26	mg/kg-dry	0.50	118	75	125	17	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name: RESPEC	Project Name, PWS, Permit, Etc. Powertech Dewey Burdock	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax: cory.foreman@respec.com	Email:	Sampler: (Please Print) Eric Krantz
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ A2LA
☐ GSA ☐ EDD/EDT (Electronic Data)
☐ POTW/WWTP Format: _____
☐ State: _____ ☐ LEVEL IV
☐ Other: _____ ☐ NELAC

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids
Vegetation Bioassay Other

ANALYSIS REQUESTED: As per Quote

SEE ATTACHED

Normal Turnaround (TAT)

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: All sediment

Shipped by:

Cooler ID(s):

Receipt Temp 3.9 °C

On Ice: Yes No

Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	As per Quote	SEE ATTACHED	Normal Turnaround (TAT)	RUSH	Comments	LABORATORY USE ONLY
1	Dew Burd Sub 01s	6/18/08	12:05	S					Doran Ranch	R08060358-001A
2	Dew Burd Sub 02s	6/18/08	13:15	S					Triangle Pit	002A
3	Dew Burd Sub 03s	6/18/08	14:10	S					N-cluster Pond	003A
4	Dew Burd Sub 05s	6/18/08	15:15	S					weather station upstream	004A
5										
6										
7										
8										
9										
10										

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Eric Krantz	6/19/08 11:00	[signature]	Steve Froiland	6-19-08 1100	[signature]
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory:	Date/Time:	Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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ANALYTICAL SUMMARY REPORT

August 28, 2008

Cory Foreman
RESPEC Inc
3824 Jet Dr
Rapid City, SD 57701-

Workorder No.: R08060402 Quote ID: R279

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc. received the following 8 samples from RESPEC Inc on 6/24/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08060402-001	DewBurd SUB08S	06/23/08 12:25	06/24/08	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08060402-002	DewBurd SUB09S	06/23/08 12:55	06/24/08	Sediment	Same As Above
R08060402-003	DewBurd SUB06S	06/23/08 13:50	06/24/08	Sediment	Same As Above
R08060402-004	DewBurd SUB07S	06/23/08 14:35	06/24/08	Sediment	Same As Above
R08060402-005	DewBurd SUB11S	06/23/08 15:15	06/24/08	Sediment	Same As Above
R08060402-006	DewBurd UNT01S	06/23/08 16:00	06/24/08	Sediment	Same As Above
R08060402-007	DewBurd SUB10S	06/23/08 16:30	06/24/08	Sediment	Same As Above
R08060402-008	DewBurd BEN01S	06/23/08 17:30	06/24/08	Sediment	Same As Above

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

Linda Larson
Rapid City - Project Manager

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-001
Client Sample ID: DewBurd SUB08S

Report Date: 08/28/08
Collection Date: 06/23/08 12:25
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.4	pCi/g-dry		0.1		1	E907.0	07/15/08 13:01/eli-c
Thorium 230 precision (±)	0.1	pCi/g-dry				1	E907.0	07/15/08 13:01/eli-c
TOTAL METALS ANALYSES								
Uranium	1.2	mg/kg-dry		0.50		10	SW6020	07/14/08 09:43/eli-c
Uranium, Activity	0.80	pCi/g-dry		0.34		10	SW6020	07/14/08 09:43/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-002
Client Sample ID: DewBurd SUB09S

Report Date: 08/28/08
Collection Date: 06/23/08 12:55
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.5	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	1.0	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	07/15/08 13:01/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/15/08 13:01/eli-c
TOTAL METALS ANALYSES								
Uranium	2.4	mg/kg-dry		0.50		10	SW6020	07/14/08 09:51/eli-c
Uranium, Activity	1.6	pCi/g-dry		0.34		10	SW6020	07/14/08 09:51/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-003
Client Sample ID: DewBurd SUB06S

Report Date: 08/28/08
Collection Date: 06/23/08 13:50
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	9.6	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.2	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	8.6	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.4	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	7.8	pCi/g-dry		0.1		1	E907.0	07/15/08 13:01/eli-c
Thorium 230 precision (±)	1.6	pCi/g-dry				1	E907.0	07/15/08 13:01/eli-c
TOTAL METALS ANALYSES								
Uranium	37	mg/kg-dry		0.50		10	SW6020	07/14/08 09:55/eli-c
Uranium, Activity	25	pCi/g-dry		0.34		10	SW6020	07/14/08 09:55/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-004
Client Sample ID: DewBurd SUB07S

Report Date: 08/28/08
Collection Date: 06/23/08 14:35
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.6	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.0	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.3	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	07/21/08 21:23/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/21/08 21:23/eli-c
TOTAL METALS ANALYSES								
Uranium	1.7	mg/kg-dry		0.50		10	SW6020	07/14/08 09:59/eli-c
Uranium, Activity	1.1	pCi/g-dry		0.34		10	SW6020	07/14/08 09:59/eli-c

Report Definitions:
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QCL - Quality control limit.
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MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-005
Client Sample ID: DewBurd SUB11S

Report Date: 08/28/08
Collection Date: 06/23/08 15:15
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.1	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	07/15/08 13:01/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/15/08 13:01/eli-c
TOTAL METALS ANALYSES								
Uranium	2.7	mg/kg-dry		0.50		10	SW6020	07/14/08 10:04/eli-c
Uranium, Activity	1.8	pCi/g-dry		0.34		10	SW6020	07/14/08 10:04/eli-c

Report Definitions:
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MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-006
Client Sample ID: DewBurd UNT01S

Report Date: 08/28/08
Collection Date: 06/23/08 16:00
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.2	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	07/16/08 11:48/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/16/08 11:48/eli-c
TOTAL METALS ANALYSES								
Uranium	2.0	mg/kg-dry		0.50		10	SW6020	07/14/08 10:08/eli-c
Uranium, Activity	1.4	pCi/g-dry		0.34		10	SW6020	07/14/08 10:08/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-007
Client Sample ID: DewBurd SUB10S

Report Date: 08/28/08
Collection Date: 06/23/08 16:30
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.5	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	0.8	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	07/15/08 13:01/eli-c
Thorium 230 precision (±)	0.3	pCi/g-dry				1	E907.0	07/15/08 13:01/eli-c
TOTAL METALS ANALYSES								
Uranium	1.5	mg/kg-dry		0.50		10	SW6020	07/14/08 10:12/eli-c
Uranium, Activity	1.0	pCi/g-dry		0.34		10	SW6020	07/14/08 10:12/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08060402-008
Client Sample ID: DewBurd BEN01S

Report Date: 08/28/08
Collection Date: 06/23/08 17:30
Date Received: 06/24/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.3	pCi/g-dry	U			1	E909.0M	07/16/08 09:30/eli-c
Lead 210 precision (±)	2.1	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Lead 210 MDC	3.4	pCi/g-dry				1	E909.0M	07/16/08 09:30/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	07/21/08 14:30/eli-c
Thorium 230	0.6	pCi/g-dry		0.1		1	E907.0	07/15/08 13:01/eli-c
Thorium 230 precision (±)	0.2	pCi/g-dry				1	E907.0	07/15/08 13:01/eli-c
TOTAL METALS ANALYSES								
Uranium	1.8	mg/kg-dry		0.50		10	SW6020	07/14/08 10:28/eli-c
Uranium, Activity	1.2	pCi/g-dry		0.34		10	SW6020	07/14/08 10:28/eli-c

Report Definitions:
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QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 08/28/08
Work Order: R08060402

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: C_R104615
Sample ID: LCS-18998	Laboratory Control Sample				Run: SUB-C104615				07/21/08 14:30
Radium 226	0.016	pCi/g-dry		111	70	130			
Sample ID: MB-18998	Method Blank				Run: SUB-C104615				07/21/08 16:28
Radium 226	-0.002	pCi/g-dry							U
Sample ID: C08061348-003AMS	Sample Matrix Spike				Run: SUB-C104615				07/21/08 16:28
Radium 226	10	pCi/g-dry		99	70	130			
Sample ID: C08061348-003AMSD	Sample Matrix Spike Duplicate				Run: SUB-C104615				07/21/08 16:28
Radium 226	10	pCi/g-dry		101	70	130	1.6	22	
Method: E907.0									Batch: C_18998
Sample ID: C08061293-016CMS	Sample Matrix Spike				Run: SUB-C104873				07/15/08 19:31
Thorium 230	6.15	pCi/g-dry	0.10	89	70	130			
Sample ID: C08061293-016CMSD	Sample Matrix Spike Duplicate				Run: SUB-C104873				07/15/08 19:31
Thorium 230	6.71	pCi/g-dry	0.10	113	70	130	8.8	30	
Sample ID: LCS-18998	Laboratory Control Sample				Run: SUB-C104873				07/15/08 19:31
Thorium 230	0.0576	pCi/g-dry	0.10	118	70	130			
Sample ID: MB-18998	Method Blank				Run: SUB-C104873				07/15/08 19:31
Thorium 230	0.0007	pCi/g-dry							U
Method: E907.0									Batch: C_R104911
Sample ID: C08061293-042CMS	Sample Matrix Spike				Run: SUB-C104911				07/21/08 21:23
Thorium 230	4.10	pCi/g-dry	0.10	106	70	130			
Sample ID: C08061293-042CMSD	Sample Matrix Spike Duplicate				Run: SUB-C104911				07/21/08 21:23
Thorium 230	3.62	pCi/g-dry	0.10	88	70	130	13	30	
Sample ID: LCS-19053	Laboratory Control Sample				Run: SUB-C104911				07/21/08 21:23
Thorium 230	0.0546	pCi/g-dry	0.10	114	70	130			
Sample ID: MB-19053	Method Blank				Run: SUB-C104911				07/21/08 21:23
Thorium 230	0.0006	pCi/g-dry							U

Qualifiers:

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ND - Not detected at the reporting limit.
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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 08/28/08
Work Order: R08060402

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0M									Batch: C_R105493
Sample ID: C08061062-003AMS	Sample Matrix Spike				Run: SUB-C105493				07/16/08 09:30
Lead 210	0.0010	uCi/kg		82	70	130			
Sample ID: C08061062-003AMSD	Sample Matrix Spike Duplicate				Run: SUB-C105493				07/16/08 09:30
Lead 210	0.0012	uCi/kg		96	70	130	14	30	
Sample ID: MB-R105493	Method Blank				Run: SUB-C105493				07/16/08 09:30
Lead 210	0.002	pCi/g-dry							U
Sample ID: LCS-R105493	Laboratory Control Sample				Run: SUB-C105493				07/16/08 09:30
Lead 210	0.113	pCi/g-dry		94	70	130			
Method: SW6020									Batch: C_18986
Sample ID: MB-18986	Method Blank				Run: SUB-C104200				07/14/08 09:22
Uranium	2E-05	mg/kg-dry	1E-06						
Sample ID: LCS3-18986	Laboratory Control Sample				Run: SUB-C104200				07/14/08 09:39
Uranium	1.7	mg/kg-dry	0.50	99	87.9	127			
Sample ID: C08061293-016BMS3	Sample Matrix Spike				Run: SUB-C104200				07/14/08 11:37
Uranium	30	mg/kg-dry	0.50	101	75	125			
Sample ID: C08061293-016BMSD3	Sample Matrix Spike Duplicate				Run: SUB-C104200				07/14/08 11:41
Uranium	33	mg/kg-dry	0.50	111	75	125	6.7	20	

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT- Provide as much information as possible.

Company Name: RESPEC	Project Name, PWS, Permit, Etc.: Powerfech Dewey Burdock	Sample Origin State: SD	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax: Cory.foreman@respec.com	Email:	Sampler: (Please Print) Eric Krantz
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

As per Rush

SEE ATTACHED

Normal Turnaround (TAT)

R U S H

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments: All Sediment

Shipped by:

Cooler ID(s):

Receipt Temp 6 °C

On Ice: Yes No

Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX		
1	DewBurd Sub08s	6/23/08	12:25	S	Sundance Pond W	B8060402-001
2	DewBurd Sub09s	6/23/08	12:55	S	Sundance Pond E.	002
3	DewBurd Sub06s	6/23/08	13:50	S	Dozzaw Pit	003
4	DewBurd Sub07s	6/23/08	14:35	S	Daniel Ranch N.	004
5	DewBurd Sub11s	6/23/08	15:15	S	Daniel Ranch S.	005
6	DewBurd UNT01s	6/23/08	16:00	S	Unknown Trib	006
7	DewBurd Sub10s	6/23/08	16:30	S	Narrow dam road dam	007
8	DewBurd BEN05	6/23/08	17:30	S	Beaver Canyon Trib	008
9						
10						

LABORATORY USE ONLY

Custody Record MUST be Signed

	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Eric Krantz	6/24/08 0545		J. Hartman	6/24/08 800	
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
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ANALYTICAL SUMMARY REPORT

October 23, 2008

Cory Foreman
RESPEC Inc
3824 Jet Dr
Rapid City, SD 57701-

Workorder No.: R08080356 Quote ID: R279

Project Name: Edgemont (Soils/Air filters)

Energy Laboratories Inc. received the following 19 samples from RESPEC Inc on 8/21/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
R08080356-001	DewBurd BEN01S	08/21/08 9:02	08/21/08	Sediment	Metals by ICP/ICPMS, Total Digestion, Total Metals For Radio Chemistry Lead 210 Radium 226 Thorium, Isotopic
R08080356-002	DewBurd UNT01S	08/21/08 9:23	08/21/08	Sediment	Same As Above
R08080356-003	DewBurd SUB10S	08/21/08 9:38	08/21/08	Sediment	Same As Above
R08080356-004	DewBurd SUB11S	08/21/08 9:56	08/21/08	Sediment	Same As Above
R08080356-005	DewBurd SUB07S	08/21/08 10:09	08/21/08	Sediment	Same As Above
R08080356-006	DewBurd SUB06S	08/21/08 10:36	08/21/08	Sediment	Same As Above
R08080356-007	DewBurd SUB05S	08/21/08 10:46	08/21/08	Sediment	Same As Above
R08080356-008	DewBurd SUB03S	08/21/08 10:56	08/21/08	Sediment	Same As Above
R08080356-009	DewBurd SUB04S	08/21/08 11:09	08/21/08	Sediment	Same As Above
R08080356-010	DewBurd PSC01S	08/21/08 11:24	08/21/08	Sediment	Same As Above
R08080356-011	DewBurd CHR05S	08/21/08 13:13	08/21/08	Sediment	Same As Above
R08080356-012	DewBurd BVC01S	08/21/08 13:36	08/21/08	Sediment	Same As Above
R08080356-013	DewBurd CHR01S	08/21/08 13:52	08/21/08	Sediment	Same As Above
R08080356-014	DewBurd BVC04S	08/21/08 14:23	08/21/08	Sediment	Same As Above
R08080356-015	DewBurd SUB09S	08/21/08 15:01	08/21/08	Sediment	Same As Above
R08080356-016	DewBurd SUB08S	08/21/08 15:12	08/21/08	Sediment	Same As Above
R08080356-017	DewBurd SUB02S	08/21/08 15:31	08/21/08	Sediment	Same As Above
R08080356-018	DewBurd SUB01S	08/21/08 15:55	08/21/08	Sediment	Same As Above
R08080356-019	DewBurd PSC02S	08/21/08 16:16	08/21/08	Sediment	Same As Above

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

Linda Larson
Rapid City - Project Manager

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-001
Client Sample ID: DewBurd BEN01S

Report Date: 10/23/08
Collection Date: 08/21/08 09:02
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.0	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.02	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.4	mg/kg-dry		0.50		10	SW6020	09/07/08 02:16/eli-c
Uranium, Activity	1.6	pCi/g-dry		0.34		10	SW6020	09/07/08 02:16/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-002
Client Sample ID: DewBurd UNT01S

Report Date: 10/23/08
Collection Date: 08/21/08 09:23
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	1.0	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.5	mg/kg-dry		0.50		10	SW6020	09/07/08 02:27/eli-c
Uranium, Activity	1.7	pCi/g-dry		0.34		10	SW6020	09/07/08 02:27/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-003
Client Sample ID: DewBurd SUB10S

Report Date: 10/23/08
Collection Date: 08/21/08 09:38
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.9	pCi/g-dry	U			1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	0.7	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.1	mg/kg-dry		0.50		10	SW6020	09/07/08 02:32/eli-c
Uranium, Activity	1.4	pCi/g-dry		0.34		10	SW6020	09/07/08 02:32/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-004
Client Sample ID: DewBurd SUB11S

Report Date: 10/23/08
Collection Date: 08/21/08 09:56
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.5	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	0.8	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.8	mg/kg-dry		0.50		10	SW6020	09/07/08 02:37/eli-c
Uranium, Activity	1.2	pCi/g-dry		0.34		10	SW6020	09/07/08 02:37/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-005
Client Sample ID: DewBurd SUB07S

Report Date: 10/23/08
Collection Date: 08/21/08 10:09
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.9	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.4	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	0.9	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.2	mg/kg-dry		0.50		10	SW6020	09/07/08 02:43/eli-c
Uranium, Activity	1.5	pCi/g-dry		0.34		10	SW6020	09/07/08 02:43/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-006
Client Sample ID: DewBurd SUB06S

Report Date: 10/23/08
Collection Date: 08/21/08 10:36
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	4.0	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	5.2	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.3	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	5.9	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.07	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	32	mg/kg-dry		0.50		10	SW6020	09/07/08 02:48/eli-c
Uranium, Activity	22	pCi/g-dry		0.34		10	SW6020	09/07/08 02:48/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-007
Client Sample ID: DewBurd SUB05S

Report Date: 10/23/08
Collection Date: 08/21/08 10:46
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.8	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	3.0	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	2.3	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.04	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	6.0	mg/kg-dry		0.50		10	SW6020	09/07/08 03:15/eli-c
Uranium, Activity	4.0	pCi/g-dry		0.34		10	SW6020	09/07/08 03:15/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-008
Client Sample ID: DewBurd SUB03S

Report Date: 10/23/08
Collection Date: 08/21/08 10:56
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	3.2	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	1.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	1.9	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.04	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	4.2	mg/kg-dry		0.50		10	SW6020	09/07/08 03:20/eli-c
Uranium, Activity	2.8	pCi/g-dry		0.34		10	SW6020	09/07/08 03:20/eli-c

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level.
QCL - Quality control limit. ND - Not detected at the reporting limit.
MDC - Minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-009
Client Sample ID: DewBurd SUB04S

Report Date: 10/23/08
Collection Date: 08/21/08 11:09
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.7	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 16:06/eli-c
Thorium 230	1.8	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.04	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	5.1	mg/kg-dry		0.50		10	SW6020	09/07/08 03:25/eli-c
Uranium, Activity	3.4	pCi/g-dry		0.34		10	SW6020	09/07/08 03:25/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-010
Client Sample ID: DewBurd PSC01S

Report Date: 10/23/08
Collection Date: 08/21/08 11:24
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	4.0	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	1.8	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.08	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	4.1	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.06	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	6.5	mg/kg-dry		0.50		10	SW6020	09/07/08 03:30/eli-c
Uranium, Activity	4.4	pCi/g-dry		0.34		10	SW6020	09/07/08 03:30/eli-c

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MDC - Minimum detectable concentration. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-011
Client Sample ID: DewBurd CHR05S

Report Date: 10/23/08
Collection Date: 08/21/08 13:13
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.3	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	0.5	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.02	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.2	mg/kg-dry		0.50		10	SW6020	09/07/08 03:36/eli-c
Uranium, Activity	0.85	pCi/g-dry		0.34		10	SW6020	09/07/08 03:36/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-012
Client Sample ID: DewBurd BVC01S

Report Date: 10/23/08
Collection Date: 08/21/08 13:36
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	2.6	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	1.2	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.0	mg/kg-dry		0.50		10	SW6020	09/07/08 03:41/eli-c
Uranium, Activity	1.3	pCi/g-dry		0.34		10	SW6020	09/07/08 03:41/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-013
Client Sample ID: DewBurd CHR01S

Report Date: 10/23/08
Collection Date: 08/21/08 13:52
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.6	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.9	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	1.4	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.7	mg/kg-dry		0.50		10	SW6020	09/07/08 03:46/eli-c
Uranium, Activity	1.8	pCi/g-dry		0.34		10	SW6020	09/07/08 03:46/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-014
Client Sample ID: DewBurd BVC04S

Report Date: 10/23/08
Collection Date: 08/21/08 14:23
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.8	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	1	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.0	mg/kg-dry		0.50		10	SW6020	09/07/08 03:51/eli-c
Uranium, Activity	1.3	pCi/g-dry		0.34		10	SW6020	09/07/08 03:51/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-015
Client Sample ID: DewBurd SUB09S

Report Date: 10/23/08
Collection Date: 08/21/08 15:01
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.6	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	0.9	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	2.3	mg/kg-dry		0.50		10	SW6020	09/07/08 03:57/eli-c
Uranium, Activity	1.6	pCi/g-dry		0.34		10	SW6020	09/07/08 03:57/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-016
Client Sample ID: DewBurd SUB08S

Report Date: 10/23/08
Collection Date: 08/21/08 15:12
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.4	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	0.8	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.02	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.9	mg/kg-dry		0.50		10	SW6020	09/07/08 04:23/eli-c
Uranium, Activity	1.3	pCi/g-dry		0.34		10	SW6020	09/07/08 04:23/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-017
Client Sample ID: DewBurd SUB02S

Report Date: 10/23/08
Collection Date: 08/21/08 15:31
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	3.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	1.3	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.2	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	6.8	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.07	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	19	mg/kg-dry		0.50		10	SW6020	09/07/08 04:29/eli-c
Uranium, Activity	13	pCi/g-dry		0.34		10	SW6020	09/07/08 04:29/eli-c

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-018
Client Sample ID: DewBurd SUB01S

Report Date: 10/23/08
Collection Date: 08/21/08 15:55
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	1	pCi/g-dry	U			1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.7	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	1.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	1	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.03	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	3.3	mg/kg-dry		0.50		10	SW6020	09/07/08 04:34/eli-c
Uranium, Activity	2.2	pCi/g-dry		0.34		10	SW6020	09/07/08 04:34/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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LABORATORY ANALYTICAL REPORT

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)
Lab ID: R08080356-019
Client Sample ID: DewBurd PSC02S

Report Date: 10/23/08
Collection Date: 08/21/08 16:16
Date Received: 08/21/08
Matrix: SEDIMENT

Analyses	Result	Units	Qual	RL	MCL/ QCL	DF	Method	Analysis Date / By
RADIONUCLIDES - TOTAL								
Lead 210	0.4	pCi/g-dry	U			1	E909.0M	10/10/08 09:17/eli-c
Lead 210 precision (±)	0.6	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Lead 210 MDC	1.1	pCi/g-dry				1	E909.0M	10/10/08 09:17/eli-c
Radium 226	0.4	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 precision (±)	0.1	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Radium 226 MDC	0.09	pCi/g-dry				1	E903.0	09/22/08 17:42/eli-c
Thorium 230	0.4	pCi/g-dry		0.1		1	E907.0	09/26/08 14:00/eli-c
Thorium 230 precision (±)	0.02	pCi/g-dry				1	E907.0	09/26/08 14:00/eli-c
TOTAL METALS ANALYSES								
Uranium	1.0	mg/kg-dry		0.50		10	SW6020	09/07/08 04:39/eli-c
Uranium, Activity	0.71	pCi/g-dry		0.34		10	SW6020	09/07/08 04:39/eli-c

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 10/23/08
Work Order: R08080356

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: C_19745
Sample ID: R08080356-019A	Sample Matrix Spike				Run: SUB-C108008				09/22/08 19:17
Radium 226	4.3	pCi/g-dry		103	70	130			
Sample ID: R08080356-019A	Sample Matrix Spike Duplicate				Run: SUB-C108008				09/22/08 19:17
Radium 226	4.6	pCi/g-dry		111	70	130	8.1	23.1	
Sample ID: LCS-19745	Laboratory Control Sample				Run: SUB-C108008				09/22/08 19:17
Radium 226	0.016	pCi/g-dry		112	70	130			
Sample ID: MB-19745	Method Blank				Run: SUB-C108008				09/22/08 19:17
Radium 226	-0.001	pCi/g-dry							U
Method: E907.0									Batch: C_19745
Sample ID: R08080356-019A	Sample Matrix Spike				Run: SUB-C109045				09/26/08 14:00
Thorium 230	2.14	pCi/g-dry	0.10	153	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD for the MS MSD pair are acceptable, the response is considered to be matrix related. The batch is approved.									
Sample ID: R08080356-019A	Sample Matrix Spike Duplicate				Run: SUB-C109045				09/26/08 14:00
Thorium 230	1.85	pCi/g-dry	0.10	128	70	130	15	30	
Sample ID: LCS-19745	Laboratory Control Sample				Run: SUB-C109045				09/26/08 14:00
Thorium 230	0.0285	pCi/g-dry	0.10	123	70	130			
Sample ID: MB-19745	Method Blank				Run: SUB-C109045				09/26/08 14:00
Thorium 230	-0.001	pCi/g-dry							U
Method: E909.0M									Batch: C_19745
Sample ID: R08080356-019A	Sample Matrix Spike				Run: SUB-C109410				10/10/08 09:17
Lead 210	27.8	pCi/g-dry		102	70	130			
Sample ID: R08080356-019A	Sample Matrix Spike Duplicate				Run: SUB-C109410				10/10/08 09:17
Lead 210	21.8	pCi/g-dry		74	70	130	24	30	
Sample ID: MB-19745	Method Blank				Run: SUB-C109410				10/10/08 09:17
Lead 210	ND	pCi/g-dry							U
Sample ID: LCS-19745	Laboratory Control Sample				Run: SUB-C109410				10/10/08 09:17
Lead 210	0.116	pCi/g-dry		100	70	130			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.
U - Not detected at minimum detectable concentration

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QA/QC Summary Report

Client: RESPEC Inc
Project: Edgemont (Soils/Air filters)

Report Date: 10/23/08
Work Order: R08080356

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Batch: C_19668
Sample ID: MB-19668	Method Blank				Run: SUB-C107115				09/07/08 02:06
Uranium	0.004	mg/kg-dry	4E-05						
Sample ID: LCS1-19668	Laboratory Control Sample				Run: SUB-C107115				09/07/08 02:11
Uranium	110	mg/kg-dry	0.50	111	91	133			
Sample ID: R08080356-019A	Sample Matrix Spike				Run: SUB-C107115				09/07/08 04:44
Uranium	20	mg/kg-dry	0.50	124	75	125			
Sample ID: R08080356-019A	Sample Matrix Spike Duplicate				Run: SUB-C107115				09/07/08 04:50
Uranium	18	mg/kg-dry	0.50	129	75	125	11	20	S

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

Page 1 of 2

PLEASE PRINT- Provide as much information as possible.

Company Name: RESPEC	Project Name, PWS, Permit, Etc. Powertech Dewey Burdock	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax: cory.foreman@respec.com	Email:	Sampler: (Please Print) Eric Krantz
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____

☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC 2008

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids
Vegetation Bioassay Other

ANALYSIS REQUESTED: As Per Quote

SEE ATTACHED

Normal Turnaround (TAT)

RUSH

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments: All sediment

Shipped by:

Cooler ID(s):

Receipt Temp 19.6 °C

On Ice: Yes No

Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX		LABORATORY USE ONLY
1	DewBurd BEN01s	8/21	0902	S	Bennett Canyon	R0808 0356-001A
2	DewBurd ~~BEN~~ UNT01s	8/21	0923	S	Unnamed Trib	002A
3	DewBurd Sub10s	8/21	0938	S	sub 10	003A
4	DewBurd Sub11s	8/21	0956	S	sub 11	004A
5	DewBurd Sub07s	8/21	1009	S	sub07	005A
6	DewBurd Sub06s	8/21	1036	S	Darrow PIT	006A
7	DewBurd Sub05s	8/21	1046	S	below Darrow	007A
8	DewBurd Sub03s	8/21	1056	S		008A
9	DewBurd Sub04s	8/21	1109	S	met station	009A
10	DewBurd PSC01s	8/21	1124	S	Pasi Cr. d/s	010A

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Eric Krantz	8/21/08 18:45	[signature]	Steve Froiland	8-21-08 1845	[signature]

Received by Laboratory: Date/Time: Signature:

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

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Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name: RESPEC	Project Name, PWS, Permit, Etc.: Powertech Dewey Burdock	Sample Origin State:	EPA/State Compliance: Yes ☐ No ☐
Report Mail Address:	Contact Name: Phone/Fax: Cory.foreman@respec.com	Email:	Sampler: (Please Print) Eric Klantz
Invoice Address:	Invoice Contact & Phone:	Purchase Order:	Quote/Bottle Order:

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

☐ DW ☐ GSA ☐ POTW/WWTP ☐ State: _____ ☐ Other: _____
☐ A2LA ☐ EDD/EDT (Electronic Data) Format: _____ ☐ LEVEL IV ☐ NELAC 2008

Number of Containers
Sample Type: A W S V B O
Air Water Soils/Solids Vegetation Bioassay Other

ANALYSIS REQUESTED

SEE ATTACHED

Normal Turnaround (TAT)

RUSH

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by:

Cooler ID(s):

Receipt Temp 19.6 °C

On Ice: (Yes) No

Custody Seal Y N
Intact Y N
Signature Match Y N

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX		
1	DewBurdCHR05s	8/21	13:13	S		1080356-01A
2	DewBurdBVC01s	8/21	13:36	S	Beaver Cr @ Burdock	02A
3	DewBurdCHR01s	8/21	13:52	S	Chey @ Montgomery	03A
4	Dew Burd BVC04s	8/21	14:23	S	Beaver Cr @ USGS sty	04A
5	Dew Burd Sub09s	8/21	15:01	S		05A
6	Dew Burd Sub08s	8/21	15:12	S		06A
7	Dew Burd Sub02s	8/21	15:31	S	Triangle Pits	07A
8	Dew Burd Sub01s	8/21	15:55	S	Doran Ranch	08A
9	Dew Burd PSC02s	8/21	16:16	S	Pass Cr. 4/1	09A
10						

LABORATORY USE ONLY

Custody Record MUST be Signed

	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Eric Klantz	8/21/08 1845		Steve Troiland	8-21-08 1845	
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal: Return to Client: _____ Lab Disposal: _____			Received by Laboratory:	Date/Time:	Signature:

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.
This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.
Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

APPENDIX 2.9-I

Radionuclide Concentrations in Surface Water

Analyte			Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)			15 pCi/L			none		
Measurement		Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Site Date & Time Collected	ELI Lab ID	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Sub01 - stock pond, quarterly sampling interval								
9/27/2007 0:00	no sample collected	dry						
11/12/2007 0:00	no sample collected	dry						
3/24/2008 12:45	R08030252-003	grab, ice	2.4	0.9	1.1	NM		
6/18/2008 12:00	R08060347-001	grab, ice	16.2	2	1.7	0.7	5	8.4
Sub02 - Triangle Mine Pit, quarterly sampling interval								
9/27/2007 18:45	R07090389-002	grab, ice	82.8	4.5	1	<1		1
11/12/2007 12:50	R07110147-001	grab, ice	132	5	1	<1		1
2/10/2008 17:00	R08020083-003	grab, ice	131	5.3	1	NM		
6/18/2008 13:10	R08060347-002	grab, ice	201	18.2	12.5	-0.9	5	8.4
Sub03 - mine dam, quarterly sampling interval								
9/27/2007 0:00	no sample collected	dry						
11/12/2007 14:50	R07110147-003	grab, ice	16.6	1.1	1	<1		1
2/10/2008 and 3/24/2008	no sample collected	dry						
6/18/2008 14:15	R08060347-004	grab, ice	19.9	2.8	2.6	-3	4.9	8.4
Sub04 - stock pond, quarterly sampling interval								
9/27/2007 0:00	no sample collected	dry						
11/12/2007 13:50	R07110147-002	grab, ice	13.6	1.7	1	<1		1
2/10/2008 and 3/24/2008	no sample collected	dry						
6/17/2008 14:00	R08060316-001	grab, ice	3	1.3	1.8	-2.1	5	8.4
Sub05 - mine dam, quarterly sampling interval								
9/27/2007 0:00	no sample collected	dry						
11/12/2007 0:00	no sample collected	dry						
2/10/2008 and 3/24/2008	no sample collected	dry						
6/18/2008 0:00	no sample collected	dry						
Sub06 - Darrow Mine Pit Northwest, quarterly sampling interval								
9/27/2007 18:10	R07090389-003	grab, ice	3070	33.5	1	<1		1
11/27/2007 9:36	R07110302-002	grab, ice	6780	47	1	<1		1
2/10/2008 16:10	R08020083-002	grab, ice	8750	43.6	1	NM		
6/23/2008 13:45	R08060403-003	grab, ice	3570	82.4	16.6	-0.6	5.3	9
Sub07 - stock dam, quarterly sampling interval								
9/27/2007 18:45	R07090389-001	grab, ice	5.3	0.7	1	<1		1
11/12/2007 16:45	R07110147-004	grab, ice	5.1	0.7	1	<1		1
3/24/2008 11:55	R08030252-002	grab, ice	1.9	0.9	1.2	NM		
6/23/2008 14:30	R08060403-004	grab, ice	5.8	1.1	1.2	-1.4	5.3	9
Sub08 - stock pond, quarterly sampling interval								
9/26/2007 18:40	R07090368-003	grab, ice	<1		1	<1		1
11/27/2007 8:35	R07110302-001	grab, ice	4.8	2.5	1	4.6		1
2/10/2008 15:10	R08020083-001	grab, ice	12.2	3.3	1	NM		
6/23/2008 12:20	R08060403-001	grab, ice	14.1	4.1	5.1	1.9	5.4	9
Sub09 - stock pond, quarterly sampling interval								
9/27/2007 0:00	no sample collected	dry						
11/12/2007 0:00	no sample collected	dry						
3/24/2008 16:25	R08030252-004	grab, ice	1.2	0.8	1.1	NM		
6/23/2008 12:50	R08060403-002	grab, ice	15.9	2	1.7	-0.9	5.1	8.6
Sub10 - stock pond, quarterly sampling interval								
9/27/2007 0:00	no sample collected	? dry ?						
11/12/2007 0:00	no sample collected	dry						
3/24/2008 17:10	R08030252-004	grab, ice	9	4.8	6.7	NM		
6/23/2008 16:25	R08060403-002	grab, ice	16.3	2	1.6	0.1	5.5	9.1
Sub11 - stock pond, quarterly sampling interval								
9/27/2007 17:15	R07090389-004	grab, ice	2.9	0.7	1	<1		1
11/27/2007 10:08	R07110302-003	grab, ice	2.0	0.6	1	<1		1
3/24/2008 11:10	R08030252-001	grab, ice	1.4	0.7	0.9	NM		
6/23/2008 15:10	R08060403-005	grab, ice	9.4	1.3	1.2	3.2	5.5	9.2
Sub24 - stock pond, sampled once								
2/12/2008 9:45	R08020131-002	grab, ice	10.2	4.3	1	NM		
BVC01 - Beaver Creek downstream, monthly sampling interval								
7/24/2007 14:20	R07070382-001	grab, ice	5.9	0.9	1	NM		
8/20/2007 17:07	R07080273-001	grab, ice	7.1	1.2	1	NM		
9/26/2007 12:16	R07090368-002	grab, ice	6.6	1.2	1	<1		1
10/17/2007 14:45	R07100295-003	grab, ice	12	2.5	1	<1		1
11/19/2007 11:30	R07110229-002	grab, ice	65.8	6.6	1	4.6	1.7	1
12/11/2007 12:20	R07120148-002	grab, ice	27.9	2.8	1	11	1.7	1
1/11/2008 11:15	R08010124-002	grab, ice	12.6	1.9	1	<1		1
2/12/2008 0:00	no sample collected	frozen solid						
3/9/2008 15:15	R08030091-005	grab, ice	17.4	11.6	17.2	NM		
4/14/2008 18:43	R08040178-004	grab, ice	15.1	9.6	13.9	NM		
5/26/2008 14:00	R08050356-002	grab, ice	18.2	4	4.5	-1	5.7	9.6
6/17/2008 11:05	R08060315-002	grab, ice	8.9	10.9	17.1	NM		

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Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Site Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Sub01 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 12:45	R08030252-003	NM			NM			NM		
6/18/2008 12:00	R08060347-001	-2.1	8.6	14.6	0.1	0.4	1	1.3	0.78	1
Sub02 - Triangle Mine Pit, quarterly sampling interval										
9/27/2007 18:45	R07090389-002	<1		1	<1		1	<1		1
11/12/2007 12:50	R07110147-001	<1		1	1.8	1.4	1	<1		1
2/10/2008 17:00	R08020083-003	NM			NM			NM		
6/18/2008 13:10	R08060347-002	-0.5	8.7	14.6	-0.2	0.4	1	0.3	0.31	1
Sub03 - mine dam, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 14:50	R07110147-003	<1		1	<1		1	<1		1
2/10/2008 and 3/24/2008	no sample collected									
6/18/2008 14:15	R08060347-004	-0.8	8.7	14.6	0	0.3	1	0.5	0.4	1
Sub04 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 13:50	R07110147-002	<1		1	2.2	1.5	1	<1		1
2/10/2008 and 3/24/2008	no sample collected									
6/17/2008 14:00	R08060316-001	6.7	11.9	19.8	0.2	0.5	1	0.2	0.37	1
Sub05 - mine dam, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
2/10/2008 and 3/24/2008	no sample collected									
6/18/2008 0:00	no sample collected									
Sub06 - Darrow Mine Pit Northwest, quarterly sampling inter										
9/27/2007 18:10	R07090389-003	<1		1	<1		1	4.5	3.9	1
11/27/2007 9:36	R07110302-002	<1		1	1.7	1.6	1	1.4	1.3	1
2/10/2008 16:10	R08020083-002	NM			NM			NM		
6/23/2008 13:45	R08060403-003	3.7	4.4	7.4	0.3	0.6	1	0.4	0.4	1
Sub07 - stock dam, quarterly sampling interval										
9/27/2007 18:45	R07090389-001	<1.3		1.3	<1		1	<1.3		1.3
11/12/2007 16:45	R07110147-004	<1		1	1.8	1.5	1	<1		1
3/24/2008 11:55	R08030252-002	NM			NM			NM		
6/23/2008 14:30	R08060403-004	0.6	4.4	7.4	0.4	0.5	1	0.9	0.55	1
Sub08 - stock pond, quarterly sampling interval										
9/26/2007 18:40	R07090368-003	<1		1	<1		1	<1		1
11/27/2007 8:35	R07110302-001	<1		1	<1		1	2.3	1.5	1
2/10/2008 15:10	R08020083-001	NM			NM			NM		
6/23/2008 12:20	R08060403-001	3.4	4.4	7.4	0	0.3	1	0.2	0.31	1
Sub09 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 16:25	R08030252-004	NM			NM			NM		
6/23/2008 12:50	R08060403-002	4.5	4.5	7.4	0	0.4	1	0.9	0.59	1
Sub10 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 17:10	R08030252-004	NM			NM			NM		
6/23/2008 16:25	R08060403-002	5.2	4.5	7.4	0	0.7	1	1.1	0.71	1
Sub11 - stock pond, quarterly sampling interval										
9/27/2007 17:15	R07090389-004	8.2	4.4	2	<1		1	<2		2
11/27/2007 10:08	R07110302-003	<1		1	<1		1	1.8	1.3	1
3/24/2008 11:10	R08030252-001	NM			NM			NM		
6/23/2008 15:10	R08060403-005	5	4.5	7.4	-0.2	0.5	1	1.1	0.67	1
Sub24 - stock pond, sampled once										
2/12/2008 9:45	R08020131-002	NM			NM			NM		
BVC01 - Beaver Creek downstream, monthly sampling interva										
7/24/2007 14:20	R07070382-001	NM			NM			NM		
8/20/2007 17:07	R07080273-001	NM			NM			NM		
9/26/2007 12:16	R07090368-002	<1		1	<1		1	<1		1
10/17/2007 14:45	R07100295-003	<1		1	2.6	1.6	1	<1		1
11/19/2007 11:30	R07110229-002	<1		1	1.9	1.4	1	2.5	1.5	1
12/11/2007 12:20	R07120148-002	3	0.86	1	1	1	1	1.6	1.3	1
1/11/2008 11:15	R08010124-002	<1		1	<1		1	1.4	1.1	1
2/12/2008 0:00	no sample collected									
3/9/2008 15:15	R08030091-005	NM			NM			NM		
4/14/2008 18:43	R08040178-004	NM			NM			NM		
5/26/2008 14:00	R08050356-002	15.3	42.4	70.7	0.3	0.9	1	3	3.3	1
6/17/2008 11:05	R08060315-002	NM			NM			NM		

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Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Thorium 230 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Site Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Sub01 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 12:45	R08030252-003	0.2	0.2	0.2	1	0.5	0.6	0.2	0.2	0.2
6/18/2008 12:00	R08060347-001	0.5	0.2	0.2	-0.2	0.2	0.4	0	0.1	0.2
Sub02 - Triangle Mine Pit, quarterly sampling interval										
9/27/2007 18:45	R07090389-002	0.6	0.6	0.2	<0.2		0.2	<0.2		0.2
11/12/2007 12:50	R07110147-001	0.6	0.3	0.2	<0.2		0.2	<0.2		0.2
2/10/2008 17:00	R08020083-003	0.4	0.1	0.2	<0.2		0.2	0.4	0.03	0.2
6/18/2008 13:10	R08060347-002	0.6	0.1	0.1	-0.5	0.2	0.5	0.1	0.3	0.2
Sub03 - mine dam, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 14:50	R07110147-003	4.5	0.7	0.2	<0.2		0.2	<0.2		0.2
2/10/2008 and 3/24/2008	no sample collected									
6/18/2008 14:15	R08060347-004	2.6	0.3	0.1	-0.09	0.3	0.6	0	0.1	0.2
Sub04 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 13:50	R07110147-002	3.4	0.6	0.2	<0.2		0.2	0.9	0.5	0.2
2/10/2008 and 3/24/2008	no sample collected									
6/17/2008 14:00	R08060316-001	3.1	0.3	0.1	-0.4	0.2	0.5	0	0.1	0.2
Sub05 - mine dam, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
2/10/2008 and 3/24/2008	no sample collected									
6/18/2008 0:00	no sample collected									
Sub06 - Darrow Mine Pit Northwest, quarterly sampling inter										
9/27/2007 18:10	R07090389-003	4.3	1.5	0.2	<0.2		0.2	23.8	4.6	0.2
11/27/2007 9:36	R07110302-002	2.0	0.5	0.2	<0.2		0.2	27.8	9.7	0.2
2/10/2008 16:10	R08020083-002	2.2	0.3	0.2	1	0.6	0.2	25.2	0.3	0.2
6/23/2008 13:45	R08060403-003	2.2	0.3	0.2	-0.2	0.2	0.4	6.3	2	0.2
Sub07 - stock dam, quarterly sampling interval										
9/27/2007 18:45	R07090389-001	0.8	0.6	0.2	<0.3		0.3	0.8	0.7	0.2
11/12/2007 16:45	R07110147-004	0.7	0.3	0.2	<0.2		0.2	<0.2		0.2
3/24/2008 11:55	R08030252-002	0.4	0.2	0.2	0.5	0.5	0.7	0.1	0.1	0.2
6/23/2008 14:30	R08060403-004	-0.02	0.1	0.2	-0.4	0.2	0.4	0	0.05	0.2
Sub08 - stock pond, quarterly sampling interval										
9/26/2007 18:40	R07090368-003	<0.2		0.2	<0.2		0.2	<0.2		0.2
11/27/2007 8:35	R07110302-001	0.5	0.3	0.2	<0.2		0.2	<0.2		0.2
2/10/2008 15:10	R08020083-001	<0.2		0.2	1.2	0.7	0.2	<0.2		0.2
6/23/2008 12:20	R08060403-001	-0.1	0.1	0.2	-0.4	0.2	0.5	0	0.1	0.2
Sub09 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 16:25	R08030252-004	0.03	0.1	0.2	0.5	0.5	0.7	0	0.1	0.2
6/23/2008 12:50	R08060403-002	0.1	0.1	0.2	-0.06	0.2	0.4	0	0.09	0.2
Sub10 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 17:10	R08030252-004	0.1	0.1	0.2	1.1	0.6	0.6	0.1	0.1	0.2
6/23/2008 16:25	R08060403-002	0.2	0.2	0.2	0.6	0.3	0.4	0.1	0.1	0.2
Sub11 - stock pond, quarterly sampling interval										
9/27/2007 17:15	R07090389-004	0.7	0.6	0.2	<0.4		0.4	1.6	1.1	0.2
11/27/2007 10:08	R07110302-003	<0.2		0.2	<0.2		0.2	<0.2		0.2
3/24/2008 11:10	R08030252-001	0.1	0.1	0.2	0.8	0.5	0.7	0.2	0.2	0.2
6/23/2008 15:10	R08060403-005	-0.1	0.1	0.2	-0.4	0.2	0.5	0	0.08	0.2
Sub24 - stock pond, sampled once										
2/12/2008 9:45	R08020131-002	0.8	0.2	0.2	<0.2		0.2	<0.2		0.2
BVC01 - Beaver Creek downstream, monthly sampling interva										
7/24/2007 14:20	R07070382-001	NM			NM			NM		
8/20/2007 17:07	R07080273-001	NM			NM			NM		
9/26/2007 12:16	R07090368-002	<0.2		0.2	<0.2		0.2	<0.2		0.2
10/17/2007 14:45	R07100295-003	0.3	0.2	0.2	<0.2		0.2	<0.2		0.2
11/19/2007 11:30	R07110229-002	<0.2		0.2	<0.2		0.2	<0.2		0.2
12/11/2007 12:20	R07120148-002	<0.2		0.2	0.4	0.4	0.2	<0.2		0.2
1/11/2008 11:15	R08010124-002	<0.2		0.2	<0.2		0.2	<0.2		0.2
2/12/2008 0:00	no sample collected									
3/9/2008 15:15	R08030091-005	-0.02	0.1	0.2	-0.7	0.5	1.2	0	0.2	0.2
4/14/2008 18:43	R08040178-004	0.1	0.1	0.2	0	0.5	0.8	0.3	0.3	0.2
5/26/2008 14:00	R08050356-002	2	0.4	0.3	3.1	1.6	2	0	0.1	0.2
6/17/2008 11:05	R08060315-002	-0.02	0.06	0.1	-0.9	0.5	1.1	0.1	0.2	0.2

Analyte		Thorium 230 - Suspended			Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		none			0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	Precision +/-	RL/MDC	Result	RL	Result	RL	Result	RL
Site Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sub01 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 12:45	R08030252-003	0.2	0.3	0.2	<0.0003	0.0003	0.0006	0.0003	0.0011	0.0003
6/18/2008 12:00	R08060347-001	0.4	0.3	0.2	0.0003	0.0003	0.0007	0.0003	0.002	0.0003
Sub02 - Triangle Mine Pit, quarterly sampling interval										
9/27/2007 18:45	R07090389-002	<0.2		0.2	0.164	0.0003	<0.0003	0.0003	0.168	0.0003
11/12/2007 12:50	R07110147-001	0.7	0.4	0.2	0.171	0.0003	<0.0003	0.0003	0.162	0.0003
2/10/2008 17:00	R08020083-003	0.4	0.3	0.2	0.177	0.0003	<0.0003	0.0003	0.168	0.0005
6/18/2008 13:10	R08060347-002	0.3	0.2	0.2	0.174	0.0003	<0.0003	0.0003	0.19	0.0003
Sub03 - mine dam, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 14:50	R07110147-003	1.3	0.7	0.2	0.0014	0.0003	0.0008	0.0003	0.0014	0.0003
2/10/2008 and 3/24/2008	no sample collected									
6/18/2008 14:15	R08060347-004	0.4	0.3	0.2	0.0023	0.0003	0.0004	0.0003	0.0031	0.0003
Sub04 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 13:50	R07110147-002	0.5	0.4	0.2	0.0021	0.0003	0.0014	0.0003	0.0024	0.0003
2/10/2008 and 3/24/2008	no sample collected									
6/17/2008 14:00	R08060316-001	0.2	0.2	0.2	0.0006	0.0003	<0.0003	0.0003	0.0007	0.0003
Sub05 - mine dam, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
2/10/2008 and 3/24/2008	no sample collected									
6/18/2008 0:00	no sample collected									
Sub06 - Darrow Mine Pit Northwest, quarterly sampling inter										
9/27/2007 18:10	R07090389-003	<0.2		0.2	5.29	0.0003	0.0013	0.0003	7.38	0.001
11/27/2007 9:36	R07110302-002	1	0.6	0.2	5.84	0.0003	0.0013	0.0003	5.83	0.0003
2/10/2008 16:10	R08020083-002	<0.2		0.2	7.84	0.0003	0.0019	0.0003	6.73	0.0005
6/23/2008 13:45	R08060403-003	0.2	0.2	0.2	3.22	0.0003	0.0015	0.0003	3.61	0.0003
Sub07 - stock dam, quarterly sampling interval										
9/27/2007 18:45	R07090389-001	<0.3		0.3	0.0011	0.0003	<0.0003	0.0003	0.0013	0.0003
11/12/2007 16:45	R07110147-004	0.9	0.5	0.2	0.0004	0.0003	<0.0003	0.0003	0.0004	0.0003
3/24/2008 11:55	R08030252-002	0	0.2	0.2	<0.0003	0.0003	<0.0003	0.0003	0.0003	0.0003
6/23/2008 14:30	R08060403-004	0.2	0.1	0.2	0.0024	0.0003	<0.0003	0.0003	0.0006	0.0003
Sub08 - stock pond, quarterly sampling interval										
9/26/2007 18:40	R07090368-003	<0.2		0.2	0.0017	0.0003	<0.0003	0.0003	0.0017	0.0003
11/27/2007 8:35	R07110302-001	<0.2		0.2	0.0028	0.0003	0.001	0.0003	0.002	0.0003
2/10/2008 15:10	R08020083-001	<0.2		0.2	0.0025	0.0003	<0.0003	0.0003	0.0023	0.0005
6/23/2008 12:20	R08060403-001	0	0.2	0.2	0.0026	0.0003	<0.0003	0.0003	0.0016	0.0003
Sub09 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 16:25	R08030252-004	0.5	0.4	0.2	0.0005	0.0003	0.0003	0.0003	0.0008	0.0003
6/23/2008 12:50	R08060403-002	0.4	0.2	0.2	0.0056	0.0003	0.001	0.0003	0.0023	0.0003
Sub10 - stock pond, quarterly sampling interval										
9/27/2007 0:00	no sample collected									
11/12/2007 0:00	no sample collected									
3/24/2008 17:10	R08030252-004	0.5	0.4	0.2	0.0027	0.0003	0.0007	0.0003	0.0033	0.0003
6/23/2008 16:25	R08060403-002	0.3	0.2	0.2	0.0005	0.0003	0.0008	0.0003	0.0022	0.0003
Sub11 - stock pond, quarterly sampling interval										
9/27/2007 17:15	R07090389-004	<0.4		0.4	0.0336	0.0004	0.0004	0.0003	0.0004	0.0003
11/27/2007 10:08	R07110302-003	3.0	0.8	0.2	0.0009	0.0003	0.0017	0.0003	0.0016	0.0003
3/24/2008 11:10	R08030252-001	0	0.3	0.2	<0.0003	0.0003	0.0003	0.0003	<0.0003	0.0003
6/23/2008 15:10	R08060403-005	0.1	0.2	0.2	<0.0003	0.0003	<0.0003	0.0003	0.0008	0.0003
Sub24 - stock pond, sampled once										
2/12/2008 9:45	R08020131-002	1.4	0.05	0.2	0.0004	0.0003	<0.0003	0.0003	<0.0003	0.0004
BVC01 - Beaver Creek downstream, monthly sampling interva										
7/24/2007 14:20	R07070382-001	NM			NM	NM	<0.0003	0.0003	0.004	0.0003
8/20/2007 17:07	R07080273-001	NM			NM	NM	<0.0003	0.0003	0.0046	0.0003
9/26/2007 12:16	R07090368-002	<0.2		0.2	0.0075	0.0003	<0.0003	0.0003	0.0076	0.0003
10/17/2007 14:45	R07100295-003	0.7	0.4	0.2	0.0097	0.0003	<0.0003	0.0003	0.0097	0.0003
11/19/2007 11:30	R07110229-002	<0.2		0.2	0.0182	0.0003	<0.0003	0.0003	0.018	0.0003
12/11/2007 12:20	R07120148-002	<0.2		0.2	0.0124	0.0003	<0.0003	0.0003	0.0142	0.0003
1/11/2008 11:15	R08010124-002	<0.2		0.2	0.0134	0.0003	<0.0003	0.0003	0.0139	0.0003
2/12/2008 0:00	no sample collected									
3/9/2008 15:15	R08030091-005	0.4	0.3	0.2	0.0269	0.0003	0.0009	0.0003	0.0262	0.0003
4/14/2008 18:43	R08040178-004	0.8	0.4	-5	0.0125	0.0003	<0.0003	0.0003	0.0127	0.0003
5/26/2008 14:00	R08050356-002	3.4	1.1	0.2	0.002	0.0003	0.0031	0.0003	0.0109	0.0003
6/17/2008 11:05	R08060315-002	0.2	0.3	0.2	0.0092	0.0003	<0.0003	0.0003	0.0113	0.0003

Analyte			Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)			15 pCi/L			none		
Measurement		Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Site Date & Time Collected	ELI Lab ID	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
BVC04 - Beaver Creek upstream, monthly sampling interval								
7/24/2007 15:30	R07070382-002	grab, ice	11.4	2.1	1	NM		
8/20/2007 16:08	R07080273-002	grab, ice	7	1.3	1	NM		
9/28/2007 8:16	R07100001-001	grab, ice	2.3	4.9	1	<1		1
10/17/2007 12:15	R07100295-001	grab, ice	26.6	5.4	1	<1		1
11/19/2007 12:30	R07110229-003	grab, ice	34.7	11	1	<1		1
12/11/2007 10:00	R07120148-001	grab, ice	17.1	2.4	1	26	2.6	1
1/11/2008 13:00	R08010124-003	grab, ice	13.9	2.6	1	2.2	1	1
2/12/2008 0:00	no sample collected	frozen solid						
3/9/2008 11:05	R08030091-002	grab, ice	6.7	5.4	8.2	NM		
4/14/2008 14:55	R08040178-003	grab, ice	23.4	14.2	20.4	NM		
5/26/2008 16:30	R08050356-004	grab, ice	12.5	2.7	3.1	0.9	5.8	9.6
6/17/2008 12:20	R08060315-004	grab, ice	3.9	9.1	14.8	NM		
CHR01 - Cheyenne River upstream, monthly sampling interval								
7/31/2007 14:35	R07080019-001	grab, ice	16.9	4.6	1	NM		
9/5/2007 17:25	R07090098-001	grab, ice	15.9	5	1	NM		
9/26/2007 12:01	R07090368-001	grab, ice	33.8	6.1	1	<1		1
10/17/2007 14:00	R07100295-002	grab, ice	34.2	5.7	1	3.2	0.8	1
11/19/2007 9:45	R07110229-001	grab, ice	27	5.3	1	<1		1
12/11/2007 0:00	no sample collected	frozen solid						
1/11/2008 0:00	no sample collected	frozen solid						
2/12/2008 0:00	no sample collected	dry						
3/9/2008 14:15	R08030091-004	grab, ice	5.1	4	6	NM		
4/16/2008 15:30	R08040220-001	grab, ice	5.7	14.8	24.4	NM		
5/26/2008 14:45	R08050356-003	grab, ice	29.1	3	2.3	0.5	5.7	9.6
6/17/2008 11:38	R08060315-003	grab, ice	35.3	8.5	9.5	NM		
CHR05 - Cheyenne River downstream, monthly sampling interval								
7/31/2007 15:10	R07080019-002	grab, ice	16.7	4.8	1	NM		
9/5/2007 18:20	R07090098-003	grab, ice	9.7	4.6	1	NM		
9/26/2007 15:30	R07090368-004	grab, ice	25.6	5.8	1	<1		1
10/17/2007 16:00	R07100295-004	grab, ice	23.2	5.3	1	6.6	1.1	1
11/19/2007 15:00	R07110229-004	grab, ice	16.8	5	1	<1		1
12/11/2007 13:50	R07120148-004	grab, ice	24.9	2.8	1	5.9	1.3	1
1/11/2008 8:30	R08010124-001	grab, ice	19.3	2.8	1	<1		1
2/12/2008 9:20	R08020131-001	grab, ice	15.7	3.4	1	NM		
3/9/2008 9:00	R08030091-001	grab, ice	4	3.7	5.7	NM		
4/14/2008 11:00	R08040178-001	grab, ice	19.8	10	13.8	NM		
5/26/2008 13:00	R08050356-001	grab, ice	29.8	3.6	3	0.7	5.8	9.6
6/17/2008 10:20	R08060315-001	grab, ice	29.9	9.6	11.9	NM		
PSC01 - Pass Creek downstream, monthly sampling interval								
7/19/2007 10:45	R07070315-001	passive sampler, ice	8.8	1.2	1	NM		
August 2007 through June 2008	no samples collected	dry						
7/18/2008 12:40	R08070340-001	passive sampler, ice	6.5	6.9	10.7	2.2	4.5	7.4
PSC02 - Pass Creek upstream, monthly sampling interval								
7/19/2007 11:30	R07070315-002	passive sampler, ice	1.9	0.7	1	NM		
August 2007 through June 2008	no samples collected	dry						
7/18/2008 14:25	R08070340-002	passive sampler, ice	4.2	5.7	9	1.7	4.5	7.4
UNT01 - Unnamed Tributary, monthly sampling interval								
July 2007 through June 2008	no samples collected	dry						
7/18/2008 0:00	R08070342-001	passive sampler, ice	6.1	1.4	1.6	NM		
BEN01 - Bennett Canyon, monthly sampling interval								
July 2007 though June 2008	no samples collected	dry						

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Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Site Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
BVC04 - Beaver Creek upstream, monthly sampling interval										
7/24/2007 15:30	R07070382-002	NM			NM			NM		
8/20/2007 16:08	R07080273-002	NM			NM			NM		
9/28/2007 8:16	R07100001-001	<2		2	<1		1	<2		2
10/17/2007 12:15	R07100295-001	<1		1	3	1.7	1	<1		1
11/19/2007 12:30	R07110229-003	<1		1	1.3	1.2	1	1.7	1.2	1
12/11/2007 10:00	R07120148-001	8.6	1.3	1	<1		1	2.9	1.6	1
1/11/2008 13:00	R08010124-003	<1		1	1.8	1.2	1	<1		1
2/12/2008 0:00	no sample collected									
3/9/2008 11:05	R08030091-002	NM			NM			NM		
4/14/2008 14:55	R08040178-003	NM			NM			NM		
5/26/2008 16:30	R08050356-004	-30	41.5	70.7	0.1	1	1	3.7	2.9	1
6/17/2008 12:20	R08060315-004	NM			NM			NM		
CHR01 - Cheyenne River upstream, monthly sampling interva										
7/31/2007 14:35	R07080019-001	NM			NM			NM		
9/5/2007 17:25	R07090098-001	NM			NM			NM		
9/26/2007 12:01	R07090368-001	<1		1	<1		1	<1		1
10/17/2007 14:00	R07100295-002	<1		1	1.6	1.2	1	<1		1
11/19/2007 9:45	R07110229-001	<1		1	1.7	1.4	1	2.3	1.3	1
12/11/2007 0:00	no sample collected									
1/11/2008 0:00	no sample collected									
2/12/2008 0:00	no sample collected									
3/9/2008 14:15	R08030091-004	NM			NM			NM		
4/16/2008 15:30	R08040220-001	NM			NM			NM		
5/26/2008 14:45	R08050356-003	4.4	42.2	70.7	0.5	1.3	1	4.1	3.2	1
6/17/2008 11:38	R08060315-003	NM			NM			NM		
CHR05 - Cheyenne River downstream, monthly sampling inte										
7/31/2007 15:10	R07080019-002	NM			NM			NM		
9/5/2007 18:20	R07090098-003	NM			NM			NM		
9/26/2007 15:30	R07090368-004	<1		1	<1		1	<1		1
10/17/2007 16:00	R07100295-004	3	1.2	1	<1		1	<1		1
11/19/2007 15:00	R07110229-004	<1		1	1.5	1.2	1	1.3	1.1	1
12/11/2007 13:50	R07120148-004	<1		1	2.4	1.4	1	<1		1
1/11/2008 8:30	R08010124-001	22	3.6	1	<1		1	<1		1
2/12/2008 9:20	R08020131-001	NM			NM			NM		
3/9/2008 9:00	R08030091-001	NM			NM			NM		
4/14/2008 11:00	R08040178-001	NM			NM			NM		
5/26/2008 13:00	R08050356-001	11.2	10.7	17.7	-0.3	0.5	1	3.8	1.7	1
6/17/2008 10:20	R08060315-001	NM			NM			NM		
PSC01 - Pass Creek downstream, monthly sampling interval										
7/19/2007 10:45	R07070315-001	NM			NM			NM		
August 2007 through June 2008	no samples collected									
7/18/2008 12:40	R08070340-001	0.9	7	11.8	0.7	0.7	1	0.3	0.33	1
PSC02 - Pass Creek upstream, monthly sampling interval										
7/19/2007 11:30	R07070315-002	NM			NM			NM		
August 2007 through June 2008	no samples collected									
7/18/2008 14:25	R08070340-002	-0.8	7	11.8	0.2	0.5	1	0.3	0.31	1
UNT01 - Unnamed Tributary, monthly sampling interval										
July 2007 through June 2008	no samples collected									
7/18/2008 0:00	R08070342-001	NM			NM			NM		
BEN01 - Bennett Canyon, monthly sampling interval										
July 2007 though June 2008	no samples collected									

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Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Thorium 230 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Site Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
BVC04 - Beaver Creek upstream, monthly sampling interval										
7/24/2007 15:30	R07070382-002	NM			NM			NM		
8/20/2007 16:08	R07080273-002	NM			NM			NM		
9/28/2007 8:16	R07100001-001	<0.2		0.2	<0.9		0.9	1.7	1.5	0.2
10/17/2007 12:15	R07100295-001	0.5	0.2	0.2	<0.2		0.2	<0.2		0.2
11/19/2007 12:30	R07110229-003	<0.2		0.2	0.8	0.4	0.2	<0.2		0.2
12/11/2007 10:00	R07120148-001	<0.2		0.2	0.3	0.3	0.2	<0.2		0.2
1/11/2008 13:00	R08010124-003	<0.2		0.2	<0.2		0.2	<0.2		0.2
2/12/2008 0:00	no sample collected									
3/9/2008 11:05	R08030091-002	0.08	0.1	0.2	2.5	2	2.8	0.2	0.2	0.2
4/14/2008 14:55	R08040178-003	0.1	0.1	0.2	0.2	0.5	0.8	0.1	0.2	0.2
5/26/2008 16:30	R08050356-004	-0.06	0.2	0.3	2.2	1.6	2.2	0	0.2	0.2
6/17/2008 12:20	R08060315-004	0.1	0.1	0.1	-0.7	0.4	0.9	0	0.1	0.2
CHR01 - Cheyenne River upstream, monthly sampling interval										
7/31/2007 14:35	R07080019-001	NM			NM			NM		
9/5/2007 17:25	R07090098-001	NM			NM			NM		
9/26/2007 12:01	R07090368-001	<0.2		0.2	<0.2		0.2	<0.2		0.2
10/17/2007 14:00	R07100295-002	0.5	0.3	0.2	<0.2		0.2	<0.2		0.2
11/19/2007 9:45	R07110229-001	<0.2		0.2	0.6	0.4	0.2	<0.2		0.2
12/11/2007 0:00	no sample collected									
1/11/2008 0:00	no sample collected									
2/12/2008 0:00	no sample collected									
3/9/2008 14:15	R08030091-004	0.2	0.1	0.2	1.2	0.9	1.3	0.1	0.1	0.2
4/16/2008 15:30	R08040220-001	0.3	0.1	0.1	-0.1	0.5	0.9	0.3	0.3	0.2
5/26/2008 14:45	R08050356-003	0.06	0.2	0.3	4	1.8	2.2	0.1	0.1	0.2
6/17/2008 11:38	R08060315-003	0.2	0.1	0.2	-0.9	0.4	1.1	0	0.1	0.2
CHR05 - Cheyenne River downstream, monthly sampling inter										
7/31/2007 15:10	R07080019-002	NM			NM			NM		
9/5/2007 18:20	R07090098-003	NM			NM			NM		
9/26/2007 15:30	R07090368-004	<0.2		0.2	<0.2		0.2	<0.2		0.2
10/17/2007 16:00	R07100295-004	<0.2		0.2	<0.2		0.2	<0.2		0.2
11/19/2007 15:00	R07110229-004	<0.2		0.2	<0.2		0.2	<0.2		0.2
12/11/2007 13:50	R07120148-004	<0.2		0.2	<0.2		0.2	<0.2		0.2
1/11/2008 8:30	R08010124-001	<0.2		0.2	<0.2		0.2	<0.2		0.2
2/12/2008 9:20	R08020131-001	<0.2		0.2	<0.2		0.2	0.2	0.03	0.2
3/9/2008 9:00	R08030091-001	0.07	0.1	0.2	1.8	1	1.3	0.1	0.1	0.2
4/14/2008 11:00	R08040178-001	0.1	0.1	0.2	0.3	0.5	0.8	0	0.2	0.2
5/26/2008 13:00	R08050356-001	1.4	0.4	0.3	3.8	0.6	0.4	0.1	0.1	0.2
6/17/2008 10:20	R08060315-001	0.2	0.1	0.1	-0.7	0.5	1.1	0	0.2	0.2
PSC01 - Pass Creek downstream, monthly sampling interval										
7/19/2007 10:45	R07070315-001	NM			NM			NM		
August 2007 through June 2008	no samples collected									
7/18/2008 12:40	R08070340-001	0.1	0.1	0.2	0.1	0.3	0.5	0	0.04	0.2
PSC02 - Pass Creek upstream, monthly sampling interval										
7/19/2007 11:30	R07070315-002	NM			NM			NM		
August 2007 through June 2008	no samples collected									
7/18/2008 14:25	R08070340-002	-0.04	0.1	0.2	-0.2	0.3	0.6	0	0.05	0.2
UNT01 - Unnamed Tributary, monthly sampling interval										
July 2007 through June 2008	no samples collected									
7/18/2008 0:00	R08070342-001	0.2	0.3	0.4	0.03	0.3	0.5	0	0.1	0.2
BEN01 - Bennett Canyon, monthly sampling interval										
July 2007 though June 2008	no samples collected									

Analyte		Thorium 230 - Suspended			Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		none			0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	Precision +/-	RL/MDC	Result	RL	Result	RL	Result	RL
Site Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BVC04 - Beaver Creek upstream, monthly sampling interval										
7/24/2007 15:30	R07070382-002	NM			NM	NM	0.0006	0.0003	0.0073	0.0003
8/20/2007 16:08	R07080273-002	NM			NM	NM	<0.0003	0.0003	0.003	0.0003
9/28/2007 8:16	R07100001-001	<2		2	0.014	0.0003	<0.0003	0.0003	0.0137	0.0003
10/17/2007 12:15	R07100295-001	<0.2		0.2	0.023	0.0003	<0.0003	0.0003	0.0239	0.0003
11/19/2007 12:30	R07110229-003	<0.2		0.2	0.0189	0.0003	<0.0003	0.0003	0.0177	0.0003
12/11/2007 10:00	R07120148-001	<0.2		0.2	0.0114	0.0003	<0.0003	0.0003	0.0135	0.0003
1/11/2008 13:00	R08010124-003	<0.2		0.2	0.0141	0.0003	<0.0003	0.0003	0.0144	0.0003
2/12/2008 0:00	no sample collected									
3/9/2008 11:05	R08030091-002	0.3	0.4	0.2	0.0056	0.0003	0.0014	0.0003	0.0061	0.0003
4/14/2008 14:55	R08040178-003	0.1	0.3	-5	0.0165	0.0003	<0.0003	0.0003	0.0169	0.0003
5/26/2008 16:30	R08050356-004	2.1	1.1	0.2	0.0017	0.0003	0.0021	0.0003	0.0069	0.0003
6/17/2008 12:20	R08060315-004	0.3	0.3	0.2	0.0078	0.0003	<0.0003	0.0003	0.0097	0.0003
CHR01 - Cheyenne River upstream, monthly sampling interva										
7/31/2007 14:35	R07080019-001	NM			NM	NM	<0.0003	0.0003	0.0223	0.0003
9/5/2007 17:25	R07090098-001	NM			NM	NM	0.0012	0.0003	0.0142	0.0003
9/26/2007 12:01	R07090368-001	<0.2		0.2	0.0149	0.0003	<0.0003	0.0003	0.015	0.0003
10/17/2007 14:00	R07100295-002	0.9	0.5	0.2	0.0308	0.0003	<0.0003	0.0003	0.032	0.0003
11/19/2007 9:45	R07110229-001	3.8	1	0.2	0.031	0.0003	0.0006	0.0003	0.0316	0.0003
12/11/2007 0:00	no sample collected									
1/11/2008 0:00	no sample collected									
2/12/2008 0:00	no sample collected									
3/9/2008 14:15	R08030091-004	0.8	0.5	0.2	0.0034	0.0003	0.002	0.0003	0.0043	0.0003
4/16/2008 15:30	R08040220-001	0.2	0.3	-5	0.0324	0.0003	0.0006	0.0003	0.0365	0.0003
5/26/2008 14:45	R08050356-003	2	1.2	0.2	0.0024	0.0003	0.0038	0.0003	0.0119	0.0003
6/17/2008 11:38	R08060315-003	0	0.3	0.2	0.0177	0.0003	<0.0003	0.0003	0.0214	0.0003
CHR05 - Cheyenne River downstream, monthly sampling inte										
7/31/2007 15:10	R07080019-002	NM			NM	NM	<0.0003	0.0003	0.011	0.0003
9/5/2007 18:20	R07090098-003	NM			NM	NM	0.0003	0.0003	0.0136	0.0003
9/26/2007 15:30	R07090368-004	<0.2		0.2	0.0346	0.0003	<0.0003	0.0003	0.0348	0.0003
10/17/2007 16:00	R07100295-004	0.6	0.4	0.2	0.0368	0.0003	<0.0003	0.0003	0.0378	0.0003
11/19/2007 15:00	R07110229-004	<0.2		0.2	0.0151	0.0003	<0.0003	0.0003	0.0143	0.0003
12/11/2007 13:50	R07120148-004	<0.2		0.2	0.0125	0.0003	0.0004	0.0003	0.0152	0.0003
1/11/2008 8:30	R08010124-001	<0.2		0.2	0.015	0.0003	<0.0003	0.0003	0.0158	0.0003
2/12/2008 9:20	R08020131-001	0.3	0.3	0.2	0.0143	0.0003	<0.0003	0.0003	0.0136	0.0003
3/9/2008 9:00	R08030091-001	1.4	0.6	0.2	0.0039	0.0003	0.0036	0.0003	0.0043	0.0003
4/14/2008 11:00	R08040178-001	0.1	0.2	-5	0.0134	0.0003	0.0005	0.0003	0.0141	0.0003
5/26/2008 13:00	R08050356-001	2.2	0.4	0.2	0.0028	0.0003	0.0067	0.0003	0.0122	0.0003
6/17/2008 10:20	R08060315-001	-0.1	0.2	0.2	0.0139	0.0003	<0.0003	0.0003	0.0173	0.0003
PSC01 - Pass Creek downstream, monthly sampling interval										
7/19/2007 10:45	R07070315-001	NM			NM	NM	0.0004	0.0003	0.01	0.0003
August 2007 through June 2008	no samples collected									
7/18/2008 12:40	R08070340-001	0.5	0.2	0.2	0.005	0.0003	0.0005	0.0003	0.0252	0.0003
PSC02 - Pass Creek upstream, monthly sampling interval										
7/19/2007 11:30	R07070315-002	NM			NM	NM	0.0005	0.0003	0.0012	0.0003
August 2007 through June 2008	no samples collected									
7/18/2008 14:25	R08070340-002	0.2	0.2	0.2	0.0007	0.0003	0.0009	0.0003	0.0057	0.0007
UNT01 - Unnamed Tributary, monthly sampling interval										
July 2007 through June 2008	no samples collected									
7/18/2008 0:00	R08070342-001	0	0.1	0.2	<0.0003	0.0003	<0.0003	0.0003	0.0009	0.0003
BEN01 - Bennett Canyon, monthly sampling interval										
July 2007 though June 2008	no samples collected									

ELI - Energy Laboratories, Inc.
NM - not measured
Exceeds Primary Drinking Water Regs 40 CFR 141.66 Maximum Contaminant Level

POWERTECH (USA) INC.

APPENDIX 2.9-J

Radionuclide Concentrations in Groundwater

POWERTECH (USA) INC.

Analyte				Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)				15 pCi/L			none		
Measurement		Water Level	Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	ft AMSL	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Alluvium Upgradient									
676 - Monitor Well, Screened Interval 3642.4 to 3652.4 ft AMSL									
9/28/2007 13:46	R07100002-005	3644.26	peristaltic pump, ice	37.1	2.5	1	<1		1
11/27/2007 12:20	R07110303-002	3644.03	peristaltic pump, ice	31.9	2.3	1	<1		1
2/5/2008 16:57	R08020052-007	3643.9	peristaltic pump, ice	95.5	4.5	1	4.1	1	1
4/29/2008 12:27	R08040364-001	3643.8	peristaltic pump, ice	51.6	9.1	8.5	-0.9	14.3	1
679 - Monitor Well, Screened Interval 3680.3 to 3690.3 ft AMSL									
9/28/2007 15:04	R07100002-006	3685.52	disposable bailer, ice	19.9	2.2	1	<1		1
11/14/2007 13:45	R07110184-003	3685.45	disposable bailer, ice	13.3	1.9	1	9.1	1.7	1
2/3/2008 16:25	R08020006-001	3685.42	disposable bailer, ice	18.4	2.3	1	<1		1
5/18/2008 18:00	R08050229-002	3685.28	disposable bailer, ice	22.4	6.3	7.5	4.5	10.7	17.8
Alluvium Downgradient									
675 - Monitor Well, Screened Interval 3479.3 to 3489.3 ft AMSL									
9/28/2007 10:49	R07100002-002	3482.12	peristaltic pump, ice	18.8	5.5	1	<1		1
11/27/2007 17:34	R07110303-007	3482.31	peristaltic pump, ice	18.3	5.3	1	6	1.5	1
2/5/2008 12:05	R08020052-002	3482.93	peristaltic pump, ice	29.3	9.2	1	<1		1
4/29/2008 17:47	R08040364-004	3482.88	peristaltic pump, ice	55.2	15.9	18.4	0	14.5	1
677 - Monitor Well, Screened Interval 3558.3 to 3568.3 ft AMSL									
9/28/2007 12:26	R07100002-004	3560.78	peristaltic pump, ice	41	9.5	1	<1		1
11/27/2007 15:20	R07110303-004	3561.18	peristaltic pump, ice	38.7	5.4	1	1.1	0.5	1
2/5/2008 13:39	R08020052-003	3562.2	peristaltic pump, ice	129	26.8	27.6	2.1	0.7	1
4/29/2008 15:14	R08040364-003	3562.67	peristaltic pump, ice	43.1	23.4	32.5	0	14.5	1
678 - Monitor Well, Screened Interval 3579.3 to 3589.3 ft AMSL									
9/28/2007 16:22	R07100002-007	3581.2	peristaltic pump, ice	23.2	5.7	1	<1		1
11/27/2007 13:40	R07110303-003	3582.08	peristaltic pump, ice	18.9	5.3	1	4	0.9	1
2/5/2008 15:39	R08020052-005	3582.49	peristaltic pump, ice	41.5	9.6	1	3.3	0.9	1
4/29/2008 13:41	R08040364-002	3582.92	peristaltic pump, ice	54.7	15.8	18.4	-1.2	23.9	1

POWERTECH (USA) INC.

Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Alluvium Upgradient										
676 - Monitor Well, Screened Interval 3642.4 to 3652.4 ft AMSL										
9/28/2007 13:46	R07100002-005	<1		1	<1		1	<1		1
11/27/2007 12:20	R07110303-002	<1		1	1.2	1.1	1	<1		1
2/5/2008 16:57	R08020052-007	3.8	1.1	1	2.9	1.6	1	2.2	0.96	1
4/29/2008 12:27	R08040364-001	-6.7	12.9	1	1.1	1	1	0.1	0.31	1
679 - Monitor Well, Screened Interval 3680.3 to 3690.3 ft AMSL										
9/28/2007 15:04	R07100002-006	<1		1	1.1	1	1	<1		1
11/14/2007 13:45	R07110184-003	<1		1	2.3	1.5	1	<1		1
2/3/2008 16:25	R08020006-001	<1		1	<1		1	<1		1
5/18/2008 18:00	R08050229-002	-9.8	20.8	35.2	-0.1	0.1	1	-0.3	1.7	1
Alluvium Downgradient										
675 - Monitor Well, Screened Interval 3479.3 to 3489.3 ft AMSL										
9/28/2007 10:49	R07100002-002	14	4.4	1	<1		1	<1		1
11/27/2007 17:34	R07110303-007	<1		1	<1		1	2	0.89	1
2/5/2008 12:05	R08020052-002	<1		1	2.1	1.3	1	<1		1
4/29/2008 17:47	R08040364-004	-19.2	12.7	1	0.6	0.8	1	0.3	0.38	1
677 - Monitor Well, Screened Interval 3558.3 to 3568.3 ft AMSL										
9/28/2007 12:26	R07100002-004	<1		1	<1		1	<1		1
11/27/2007 15:20	R07110303-004	<1		1	<1		1	2.5	0.93	1
2/5/2008 13:39	R08020052-003	<1		1	2.2	1.3	1	<1		1
4/29/2008 15:14	R08040364-003	-2.3	13	1	0.4	0.7	1	-0.2	0.024	1
678 - Monitor Well, Screened Interval 3579.3 to 3589.3 ft AMSL										
9/28/2007 16:22	R07100002-007	<1		1	<1		1	<1		1
11/27/2007 13:40	R07110303-003	<1		1	<1		1	1.3	0.69	1
2/5/2008 15:39	R08020052-005	<1		1	2.4	1.5	1	<1		1
4/29/2008 13:41	R08040364-002	-1.5	13	1	1.3	1.1	1	0	0.17	1

POWERTECH (USA) INC.

Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Radon		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Alluvium Upgradient										
676 - Monitor Well, Screened Interval 3642.4 to 3652.4 ft AMSL										
9/28/2007 13:46	R07100002-005	<0.2		0.2	<0.2		0.2	NM		
11/27/2007 12:20	R07110303-002	<0.2		0.2	<0.2		0.2	453	60.5	100
2/5/2008 16:57	R08020052-007	<0.2		0.2	11.4	2.2	0.2	686	104	100
4/29/2008 12:27	R08040364-001	NM			NM			755	96.4	100
679 - Monitor Well, Screened Interval 3680.3 to 3690.3 ft AMSL										
9/28/2007 15:04	R07100002-006	<0.2		0.2	2.5	1.2	0.2	NM		
11/14/2007 13:45	R07110184-003	<0.2		0.2	NM			819	51.2	100
2/3/2008 16:25	R08020006-001	0.9	0.4	0.2	9	2	0.2	2170	137	100
5/18/2008 18:00	R08050229-002	3.7	0.4	-5000	0.2	1.1	1.8	1250	91.2	100
Alluvium Downgradient										
675 - Monitor Well, Screened Interval 3479.3 to 3489.3 ft AMSL										
9/28/2007 10:49	R07100002-002	<0.2		0.2	2.3	1.2	0.2	NM		
11/27/2007 17:34	R07110303-007	0.5	0.3	0.2	1.7	0.6	0.2	712	61.6	100
2/5/2008 12:05	R08020052-002	<0.2		0.2	<0.2		0.2	783	109	100
4/29/2008 17:47	R08040364-004	NM			0.7	0.3	0.3	960	95.5	100
677 - Monitor Well, Screened Interval 3558.3 to 3568.3 ft AMSL										
9/28/2007 12:26	R07100002-004	0.9	0.3	0.2	<0.2		0.2	NM		
11/27/2007 15:20	R07110303-004	<0.2		0.2	2.7	0.6	0.2	892	64.6	100
2/5/2008 13:39	R08020052-003	<0.2		0.2	<0.2		0.2	808	108	100
4/29/2008 15:14	R08040364-003	NM			0.3	0.2	0.3	1250	101	100
678 - Monitor Well, Screened Interval 3579.3 to 3589.3 ft AMSL										
9/28/2007 16:22	R07100002-007	<0.2		0.2	<0.2		0.2	NM		
11/27/2007 13:40	R07110303-003	<0.2		0.2	0.7	0.3	0.2	391	59.2	100
2/5/2008 15:39	R08020052-005	<0.2		0.2	<0.2		0.2	487	103	100
4/29/2008 13:41	R08040364-002	NM			0.7	0.3	0.3	687	94.7	100

POWERTECH (USA) INC.

Analyte		Thorium 230 - Dissolved			Thorium 230 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Alluvium Upgradient							
676 - Monitor Well, Screened Interval 3642.4 to 3652.4 ft AMSL							
9/28/2007 13:46	R07100002-005	<0.2		0.2	<0.2		0.2
11/27/2007 12:20	R07110303-002	<0.2		0.2	<0.2		0.2
2/5/2008 16:57	R08020052-007	<0.2		0.2	4.2	1.1	0.2
4/29/2008 12:27	R08040364-001	0	0.1	0.2	0	0.1	0.2
679 - Monitor Well, Screened Interval 3680.3 to 3690.3 ft AMSL							
9/28/2007 15:04	R07100002-006	<0.2		0.2	1.9	1.3	0.2
11/14/2007 13:45	R07110184-003	<0.2		0.2	0.3	0.1	0.2
2/3/2008 16:25	R08020006-001	<0.2		0.2	0.4	0.1	0.2
5/18/2008 18:00	R08050229-002	0	0.1	0.2	1.4	0.9	0.2
Alluvium Downgradient							
675 - Monitor Well, Screened Interval 3479.3 to 3489.3 ft AMSL							
9/28/2007 10:49	R07100002-002	<0.2		0.2	<0.2		0.2
11/27/2007 17:34	R07110303-007	<0.2		0.2	1.3	0.4	0.2
2/5/2008 12:05	R08020052-002	<0.2		0.2	<0.2		0.2
4/29/2008 17:47	R08040364-004	0	0.3	0.2	0	0.1	0.2
677 - Monitor Well, Screened Interval 3558.3 to 3568.3 ft AMSL							
9/28/2007 12:26	R07100002-004	<0.2		0.2	<0.2		0.2
11/27/2007 15:20	R07110303-004	<0.2		0.2	2.2	0.5	0.2
2/5/2008 13:39	R08020052-003	<0.2		0.2	0.3	0.01	0.2
4/29/2008 15:14	R08040364-003	0	0.2	0.2	0.1	0.2	0.2
678 - Monitor Well, Screened Interval 3579.3 to 3589.3 ft AMSL							
9/28/2007 16:22	R07100002-007	<0.2		0.2	<0.2		0.2
11/27/2007 13:40	R07110303-003	<0.2		0.2	<0.2		0.2
2/5/2008 15:39	R08020052-005	0.3	0.02	0.2	<0.2		0.2
4/29/2008 13:41	R08040364-002	0.2	0.3	0.2	0.1	0.1	0.2

POWERTECH (USA) INC.

Analyte		Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	RL	Result	RL	Result	RL
Hydro ID Date & Time Collected	ELI Lab ID	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Alluvium Upgradient							
676 - Monitor Well, Screened Interval 3642.4 to 3652.4 ft AMSL							
9/28/2007 13:46	R07100002-005	0.0494	0.0003	0.0096	0.0003	NM	NM
11/27/2007 12:20	R07110303-002	0.0548	0.0003	0.0011	0.0003	NM	NM
2/5/2008 16:57	R08020052-007	0.0586	0.0003	0.0702	0.0003	0.0687	0.0003
4/29/2008 12:27	R08040364-001	0.0557	0.0003	<0.0003	0.0003	0.0591	0.0003
679 - Monitor Well, Screened Interval 3680.3 to 3690.3 ft AMSL							
9/28/2007 15:04	R07100002-006	0.0157	0.0003	0.011	0.0003	NM	NM
11/14/2007 13:45	R07110184-003	0.0144	0.0003	0.0008	0.0003	NM	NM
2/3/2008 16:25	R08020006-001	0.0139	0.0003	0.0007	0.0003	0.0154	0.0003
5/18/2008 18:00	R08050229-002	0.0112	0.0003	0.0012	0.0003	0.0164	0.0003
Alluvium Downgradient							
675 - Monitor Well, Screened Interval 3479.3 to 3489.3 ft AMSL							
9/28/2007 10:49	R07100002-002	0.0372	0.0003	0.0013	0.0003	NM	NM
11/27/2007 17:34	R07110303-007	0.0307	0.0003	0.003	0.0003	NM	NM
2/5/2008 12:05	R08020052-002	0.0387	0.0003	0.0005	0.0003	0.0387	0.0003
4/29/2008 17:47	R08040364-004	0.0493	0.0003	<0.0003	0.0003	0.0502	0.0003
677 - Monitor Well, Screened Interval 3558.3 to 3568.3 ft AMSL							
9/28/2007 12:26	R07100002-004	0.0218	0.0003	0.027	0.0003	NM	NM
11/27/2007 15:20	R07110303-004	0.0443	0.0003	0.0049	0.0003	NM	NM
2/5/2008 13:39	R08020052-003	0.0402	0.0003	<0.0003	0.0003	0.0414	0.0003
4/29/2008 15:14	R08040364-003	0.045	0.0003	<0.0003	0.0003	0.0471	0.0003
678 - Monitor Well, Screened Interval 3579.3 to 3589.3 ft AMSL							
9/28/2007 16:22	R07100002-007	0.0352	0.0003	0.0032	0.0003	NM	NM
11/27/2007 13:40	R07110303-003	0.0349	0.0003	0.0008	0.0003	NM	NM
2/5/2008 15:39	R08020052-005	0.0368	0.0003	<0.0003	0.0003	0.0379	0.0003
4/29/2008 13:41	R08040364-002	0.0355	0.0003	<0.0003	0.0003	0.0387	0.0003

ELI - Energy Laboratories, Inc.
NM - not measured
Exceeds National Primary Drinking Water Regulations, 40 CFR 141.66 Maximum Contaminant Level

POWERTECH (USA) INC.

Analyte				Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)				15 pCi/L			none		
Measurement		Water Level	Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	ft AMSL	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Fall River Upgradient									
628 - Stock Well, Screened Interval Pending Confirmation									
9/28/2007 9:23	R07100002-001	3695.16	dedicated pump, ice	29.9	2.1	1	<1		1
11/14/2007 10:59	R07110184-001	3694.3	dedicated pump, ice	83.9	2.8	1	<1		1
2/20/2008 18:30	R08020220-005	3695.51	dedicated pump, ice	64.5	5.8	4	14	2.5	1
5/29/2008 15:02	R08050419-004	3695.31	dedicated pump, ice	39	4.8	4.1	0.1	3.5	5.9
631 - Stock Well, Screened Interval 3665.37 to 3715.37 ft AMSL									
9/26/2007 16:40	R07090384-004	3715.46	dedicated pump, ice	51	3.2	1	<1		1
11/14/2007 15:20	R07110184-004	3715.52	dedicated pump, ice	46.5	2.4	1	<1		1
2/20/2008 13:55	R08020220-003	3715.35	dedicated pump, ice	162	12.2	7	6.1	1.8	1
5/19/2008 11:06	R08050251-001	3713.31	dedicated pump, ice	60.7	7.9	6.5	0.5	9.6	16
698 - Monitor Well, Screened Interval 3509.25 to 3534.25 ft AMSL									
3/30/2008 14:04	R08030315-002	3679.79	dedicated pump, ice	1750	41.2	8.4	-14	3.1	1
4/22/2008 11:30	R08040287-004	3679.75	dedicated pump, ice	2110	46.5	8.3	-3.5	11.8	1
5/28/2008 12:35	R08050406-001	3679.45	dedicated pump, ice	1210	33.2	6.1	5.5	5	8.2
6/24/2008 11:55	R08060427-001	3679.65	dedicated pump, ice	1790	40.7	8	-1.7	6.7	11.4
7/14/2008 18:43	R08070244-010	3679.64	dedicated pump, ice	1790	39.6	7.6	-0.4	5.5	9.2
8/19/2008 17:35	R08080301-003	3679.66	dedicated pump, ice	1560	39.4	8	3.1	6.4	10.7
9/22/2008 13:05	R08090314-003	3679.71	dedicated pump, ice	36.3	4.3	3.1	2.2	5.4	9
10/20/2008 13:52	R08100295-004	3679.5	dedicated pump, ice	1330	34.2	6.5	6.8	3.8	6.1
11/18/2008 12:00	R08110211-008	3679.52	dedicated pump, ice	1680	40.3	8.9	1.4	2.6	4.4
12/17/2008 13:00	R08120255-005	3679.65	dedicated pump, ice	1570	37.7	6.7	4.7	2.5	4
1/20/2009 14:07	R09010301-009	3679.43	dedicated pump, ice	1960	40.9	7.4	0.1	2.5	4.2
2/24/2009 12:10	R09020293-004	3679.57	dedicated pump, ice	1270	35.4	9.5	1.5	1.6	2.7
706 - Monitor Well, Screened Interval 3510.32 to 3540.32 ft AMSL									
1/18/2010 0:00	R10010180-002	NM	dedicated pump, ice	39.7	6.7	7.4	1.1	1.7	2.8
2/22/2010 0:00	R10020266-002	NM	dedicated pump, ice	37.9	5.9	6.1	-0.1	0.8	1.3
3/15/2010 0:00	R10030205-003	NM	dedicated pump, ice	11.2	3.8	5.1	0.7	1.7	2.8
4/21/2010 0:00	R10040303-002	NM	dedicated pump, ice	56.3	7.1	6.2	-2	1.6	2.7
5/17/2010 0:00	R10050253-002	NM	dedicated pump, ice	40.1	6.3	6.7	2.2	1.7	2.9
6/22/2010 0:00	R10060444-002	NM	dedicated pump, ice	34	7.2	8.8	0.7	1.4	2.3
7/27/2010 0:00	R10070459-001	3725.27	dedicated pump, ice	31.6	6.2	7.3	-1	1.4	2.3
8/23/2010 0:00	R10080398-002	3724.82	dedicated pump, ice	21.9	4.9	5.8	-0.7	1	1.7
9/28/2010 0:00	R10090519-002	NM	dedicated pump, ice	20.5	5.2	6.9	1.5	1.2	2
10/25/2010 0:00	R10100355-002	3725.8	dedicated pump, ice	19.3	5.5	7.4	0.1	0.9	1.4
11/15/2010 0:00	R10110179-001	3725.29	dedicated pump, ice	24.5	6	7.7	-0.08	0.8	1.4
12/14/2010 0:00	R10110179-003	3725.19	dedicated pump, ice	18.2	5	6.6	-0.8	0.8	1.4
Fall River Near									
681 - Monitor Well, Screened Interval 3030.31 to 3045.31 ft AMSL									
1/30/2008 15:40	R08010296-002	NM	flowing artesian, ice	656	4.7	1	46	4.1	1
3/30/2008 17:50	R08030315-008	NM	flowing artesian, ice	2170	30.8	3.8	0	3.3	1
4/21/2008 20:06	R08040250-006	NM	flowing artesian, ice	1400	23.2	3.1	49.9	9	1
5/12/2008 12:45	R08050143-001	3644.6	flowing artesian, ice	2220	32.1	4.5	40.5	10.2	16
5/18/2008 11:18	R08050229-001	NM	flowing artesian, ice	1220	21.9	3.2	38.2	12.7	19.9
6/25/2008 17:30	R08060452-003	3642.8	flowing artesian, ice	1390	23.2	3.5	42.2	7.4	11.4
7/1/2008 16:54	R08070035-005	3641.84	flowing artesian, ice	1180	23	4.1	30	5.1	7.9
7/14/2008 17:04	R08070244-009	3639.75	flowing artesian, ice	2170	30.3	3.7	26.3	5.9	9.2
8/19/2008 19:08	R08080301-004	3640.69	flowing artesian, ice	1430	25.9	3.8	32.2	6.8	10.7
9/23/2008 13:55	R08090356-002	3639.68	flowing artesian, ice	1180	24.8	4.8	28.3	5.8	9
10/20/2008 15:00	R08100295-009	3637.37	flowing artesian, ice	1440	24.5	3.1	22.6	4	6.1
11/18/2008 13:55	R08110211-012	3641.29	flowing artesian, ice	1850	29.4	4.3	29	5.6	8.7
12/17/2008 10:48	R08120255-002	3641.75	flowing artesian, ice	1560	26.2	3.3	10.7	2.5	4
1/20/2009 12:50	R09010301-007	3641.29	flowing artesian, ice	1210	21.8	3.4	11.5	2.7	4.2
2/24/2009 16:18	R09020293-011	3654.67	flowing artesian, ice	1460	26.4	4.7	37.6	3.6	5.4
688 - Monitor Well, Screened Interval 3446.36 to 3456.36 ft AMSL									
4/2/2008 18:07	R08040058-001	-196.64	dedicated pump, ice	2.9	1.9	2.8	0	0.6	1
4/22/2008 13:26	R08040287-002	3662.18	dedicated pump, ice	10.1	2.8	3.3	-2.7	11.8	1
6/10/2008 16:37	R08060210-002	3669.37	dedicated pump, ice	17.3	2.7	2.6	-0.5	3.5	5.9
6/30/2008 18:39	R08070005-002	3661.97	dedicated pump, ice	13.2	2.8	3.1	-0.1	4.7	7.9
7/7/2008 18:49	R08070115-006	NM	dedicated pump, ice	29.8	4.1	3.4	-0.4	4.7	7.9
7/28/2008 15:45	R08070471-001	3662.64	dedicated pump, ice	3.9	2	2.8	-6	7.3	12.5
8/20/2008 10:07	R08080332-001	3662.56	dedicated pump, ice	11.8	3	3.4	3.8	6.4	10.7
9/30/2008 8:30	R08100014-001	3662.46	dedicated pump, ice	4.9	2.5	3.5	-0.1	2.5	4.2
10/20/2008 12:15	R08100295-005	3662.52	dedicated pump, ice	10.2	2.5	2.8	1.1	3.7	6.1
11/18/2008 10:00	R08110211-004	3662.5	dedicated pump, ice	15	3.3	3.8	1.1	2.6	4.4
12/22/2008 9:45	R08120281-001	3663.79	dedicated pump, ice	1.9	2.5	3.9	1	2.4	4
1/20/2009 15:35	R09010301-012	3662.66	dedicated pump, ice	25.6	3.6	3.2	1	2.5	4.2
2/24/2009 13:23	R09020293-006	3662.79	dedicated pump, ice	28.7	4.3	4.2	-1	3.2	5.4

POWERTECH (USA) INC.

Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Fall River Upgradient										
628 - Stock Well, Screened Interval Pending Confirmation										
9/28/2007 9:23	R07100002-001	<1		1	<1		1	6.4	4.7	1
11/14/2007 10:59	R07110184-001	<1		1	2.7	1.7	1	<1		1
2/20/2008 18:30	R08020220-005	1.2	0.54	1	1.3	1.1	1	<1		1
5/29/2008 15:02	R08050419-004	0.5	10.5	17.7	-0.5	0.2	1	0.1	0.26	1
631 - Stock Well, Screened Interval 3665.37 to 3715.37 ft AMSL										
9/26/2007 16:40	R07090384-004	<1		1	<1		1	<1		1
11/14/2007 15:20	R07110184-004	<1		1	3.5	2	1	<1		1
2/20/2008 13:55	R08020220-003	7.5	1.4	1	<1		1	<1		1
5/19/2008 11:06	R08050251-001	-1.4	5.2	8.8	0.2	0.5	1	0.1	0.4	1
698 - Monitor Well, Screened Interval 3509.25 to 3534.25 ft AMSL										
3/30/2008 14:04	R08030315-002	0	0.7	1	1	0.8	1	1.2	0.74	1
4/22/2008 11:30	R08040287-004	0	1.5	1	1.4	1	1	-0.2	0.48	1
5/28/2008 12:35	R08050406-001	2.6	10.6	17.7	0.2	0.8	1	1.4	1	1
6/24/2008 11:55	R08060427-001	7.4	4.5	7.4	1.1	1	1	1.2	0.78	1
7/14/2008 18:43	R08070244-010	-0.7	7	11.8	1.6	1.3	1	1.5	0.77	1
8/19/2008 17:35	R08080301-003	1.1	10.6	17.8	0.4	0.6	1	0.5	0.48	1
9/22/2008 13:05	R08090314-003	0.5	4.7	7.8	0	0.55	1	0.059	0.5	
10/20/2008 13:52	R08100295-004	4.7	4.1	6.8	0.3	0.42	1	1	0.68	1
11/18/2008 12:00	R08110211-008	4.4	5.5	9	0.3	0.4	1	1.6	0.98	
12/17/2008 13:00	R08120255-005	3.2	6.3	10.4	0.3	0.35	1	1	0.81	1
1/20/2009 14:07	R09010301-009	0.9	4.8	8	0.42	0.51	0.68	2	0.96	0.59
2/24/2009 12:10	R09020293-004	4.5	3.4	5.7	0.4	0.45	0.51	0.78	0.62	0.61
706 - Monitor Well, Screened Interval 3510.32 to 3540.32 ft AMSL										
1/18/2010 0:00	R10010180-002	2.6	4.3	7.1	0.074	0.6	1.4	0.12	0.94	2.1
2/22/2010 0:00	R10020266-002	0.3	1.6	2.8	0.23	0.39	0.64	-0.096	0.26	0.73
3/15/2010 0:00	R10030205-003	0.7	1.7	2.9	0	0.17	0.42	0.061	0.18	0.34
4/21/2010 0:00	R10040303-002	0.7	3.1	5.2	-0.003	0.24	0.6	0.14	0.29	0.48
5/17/2010 0:00	R10050253-002	-1	3.6	6.1	-0.06	0.39	1.1	0.061	0.37	0.8
6/22/2010 0:00	R10060444-002	0.05	3.4	5.7	-0.042	0.22	0.6	-0.047	0.31	0.85
7/27/2010 0:00	R10070459-001	-2	2.5	4.2	0.062	0.29	0.62	0	0.2	0.48
8/23/2010 0:00	R10080398-002	-0.02	0.8	1.3	-0.04	0.28	0.77	0.068	0.27	0.54
9/28/2010 0:00	R10090519-002	-0.6	0.9	1.5	-0.075	0.5	1.4	-0.005	0.086	0.22
10/25/2010 0:00	R10100355-002	1.5	1.9	3.1	-0.012	0.21	0.54	0.081	0.27	0.51
11/15/2010 0:00	R10110179-001	2.5	2	3.3	-0.011	0.2	0.53	-0.032	0.25	0.66
12/14/2010 0:00	R10110179-003	0.3	1.5	2.5	0.096	0.32	0.62	0	0.27	0.66
Fall River Near										
681 - Monitor Well, Screened Interval 3030.31 to 3045.31 ft AMSL										
1/30/2008 15:40	R08010296-002	1.7	0.69	1	2.6	1.5	1	1.6	0.86	1
3/30/2008 17:50	R08030315-008	16.8	1.8	1	0.6	0.8	1	1.2	0.57	1
4/21/2008 20:06	R08040250-006	16.7	2.2	1	3.5	1.7	1	0	0.31	1
5/12/2008 12:45	R08050143-001	20.8	9.4	15.1	1.6	1.2	1	2.4	1.1	1
5/18/2008 11:18	R08050229-001	20.2	5.6	8.8	1.2	1.1	1	3.2	1.3	1
6/25/2008 17:30	R08060452-003	6.2	4.5	7.4	0.7	1	1	1.4	0.81	1
7/1/2008 16:54	R08070035-005	5.3	6	9.9	0.7	0.8	1	1.5	0.71	1
7/14/2008 17:04	R08070244-009	3.7	12.8	21.4	3.1	1.8	1	0.9	0.56	1
8/19/2008 19:08	R08080301-004	-1	10.6	17.8	3.7	1.9	1	0.6	0.43	1
9/23/2008 13:55	R08090356-002	4.9	4.7	7.8	0.8	1.3	1	0.88	0.63	
10/20/2008 15:00	R08100295-009	18	4.3	6.8	5.1	1.8	1	1.5	0.8	1
11/18/2008 13:55	R08110211-012	10.8	5.6	9	2.9	1.2	1	2.2	0.88	
12/17/2008 10:48	R08120255-002	24.2	6.6	10.4	4.8	1.5	1	9.2	2.4	1
1/20/2009 12:50	R09010301-007	2.2	4.8	8	3.8	1.4	0.75	1.7	0.88	0.65
2/24/2009 16:18	R09020293-011	25.9	3.7	5.7	0.28	0.35	0.46	2.3	1.1	0.62
688 - Monitor Well, Screened Interval 3446.36 to 3456.36 ft AMSL										
4/2/2008 18:07	R08040058-001	-0.4	0.5	1	1	0.8	1	1	0.64	1
4/22/2008 13:26	R08040287-002	-0.1	0.5	1	1.9	1.4	1	0.4	0.43	1
6/10/2008 16:37	R08060210-002	4.8	6.4	10.6	0	0.5	1	0.2	0.31	1
6/30/2008 18:39	R08070005-002	-2.3	6	10.1	0	0.4	1	0.3	0.38	1
7/7/2008 18:49	R08070115-006	-6	12.7	21.4	0.9	0.88	1	0.1	0.29	1
7/28/2008 15:45	R08070471-001	-0.6	7.1	11.9	0.2	0.7	1	0	0.36	1
8/20/2008 10:07	R08080332-001	-6	10.5	17.8	0	0.4	1	-0.1	0.31	1
9/30/2008 8:30	R08100014-001	1.2	5.2	8.6	0.2	0.36	1	0.15	0.36	
10/20/2008 12:15	R08100295-005	-3	4	6.8	0	0.24	1	0	0.14	1
11/18/2008 10:00	R08110211-004	-5	5.3	9	0	0.22	1	-0.061	0.24	
12/22/2008 9:45	R08120281-001	0.1	6.2	10.4	0	0.17	1	0	0.25	1
1/20/2009 15:35	R09010301-012	3.2	4.8	8	-0.009	0.28	0.71	-0.005	0.17	0.43
2/24/2009 13:23	R09020293-006	-0.9	3.4	5.7	0.45	0.41	0.43	-0.054	0.26	0.73

POWERTECH (USA) INC.

Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Radon		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Fall River Upgradient										
628 - Stock Well, Screened Interval Pending Confirmation										
9/28/2007 9:23	R07100002-001	7.4	0.9	0.2	<0.2		0.2	NM		
11/14/2007 10:59	R07110184-001	20.7	1.4	0.2	NM			2740	70.4	100
2/20/2008 18:30	R08020220-005	9	0.6	0.1	1.7	0.8	1	4360	78.4	100
5/29/2008 15:02	R08050419-004	6.1	0.5	-5000	-0.3	0.3	0.5	5040	144	100
631 - Stock Well, Screened Interval 3665.37 to 3715.37 ft AMSL										
9/26/2007 16:40	R07090384-004	12.9	3.7	0.2	2.3	1.6	0.2	NM		
11/14/2007 15:20	R07110184-004	9.5	0.9	0.2	NM			4220	80	100
2/20/2008 13:55	R08020220-003	19.4	0.8	0.1	<0.9		0.9	3920	77	100
5/19/2008 11:06	R08050251-001	22.1	1	-5000	-0.3	0.2	0.4	4430	112	100
698 - Monitor Well, Screened Interval 3509.25 to 3534.25 ft AMSL										
3/30/2008 14:04	R08030315-002	387	13.8	1	15.3	1.2	0.3	32200	266	100
4/22/2008 11:30	R08040287-004	370	3.2	0.1	6.4	0.7	0.3	25800	193	100
5/28/2008 12:35	R08050406-001	413	3.7	-5000	14	1.3	0.6	25600	164	100
6/24/2008 11:55	R08060427-001	429	4.4	-5000	11.6	1.1	0.5	40700	418	100
7/14/2008 18:43	R08070244-010	423	6	-5000	6.3	0.8	0.5	27900	198	100
8/19/2008 17:35	R08080301-003	372	4.1	-5000	1.7	0.5	0.5	38200	342	100
9/22/2008 13:05	R08090314-003	410	4.4	-5000	0.2	0.2	0.4	29500	196	100
10/20/2008 13:52	R08100295-004	347	3.5	-5000	7.4	0.9	0.5	38200	278	100
11/18/2008 12:00	R08110211-008	403	3.6	0.2	9	0.9	0.4	37400	303	100
12/17/2008 13:00	R08120255-005	363	3.1	0.1	4.7	0.7	0.5	37600	230	100
1/20/2009 14:07	R09010301-009	386	3.8	-5000	7.3	0.8	0.5	32100	235	100
2/24/2009 12:10	R09020293-004	355	3.1	-5000	11	0.9	0.3	38400	279	100
706 - Monitor Well, Screened Interval 3510.32 to 3540.32 ft AMSL										
1/18/2010 0:00	R10010180-002	2.7	0.3	0.2	-0.2	0.04	0.08	270		100
2/22/2010 0:00	R10020266-002	2.3	0.3	0.2	0.07	0.07	0.1	313		100
3/15/2010 0:00	R10030205-003	2.9	0.3	0.1	0.2	0.08	0.08	319		100
4/21/2010 0:00	R10040303-002	4.3	0.4	0.2	0.03	0.08	0.1	303		100
5/17/2010 0:00	R10050253-002	1.9	0.3	0.2	0.6	0.3	0.3	303		100
6/22/2010 0:00	R10060444-002	2.5	0.3	0.2	-0.2	0.1	0.3	338		100
7/27/2010 0:00	R10070459-001	2.6	0.3	0.2	-0.1	0.08	0.2	373		100
8/23/2010 0:00	R10080398-002	2.7	0.3	0.09	-0.1	0.2	0.3	342		100
9/28/2010 0:00	R10090519-002	2	0.3	0.1	-0.02	0.03	0.05	300		100
10/25/2010 0:00	R10100355-002	2.2	0.3	0.2	0.2	0.1	0.1	254		100
11/15/2010 0:00	R10110179-001	2.4	0.2	0.06	0.1	0.08	0.1	683		100
12/14/2010 0:00	R10110179-003	2.5	0.3	0.1	-0.1	0.2	0.4	241		100
Fall River Near										
681 - Monitor Well, Screened Interval 3030.31 to 3045.31 ft AMSL										
1/30/2008 15:40	R08010296-002	421	6.8	0.2	9.9	2.4	0.2	462000	1190	100
3/30/2008 17:50	R08030315-008	414	14.8	1.1	3.5	0.6	0.4	254000	711	100
4/21/2008 20:06	R08040250-006	377	3.4	0.1	0.2	0.3	0.5	253000	623	100
5/12/2008 12:45	R08050143-001	407	3.7	-5000	1.8	0.5	0.5	246	107	100
5/18/2008 11:18	R08050229-001	423	15.1	-5000	1.6	0.5	0.4	462000	1020	100
6/25/2008 17:30	R08060452-003	434	5.5	-5000	0.7	0.4	0.5	389000	953	100
7/1/2008 16:54	R08070035-005	357	3.9	-5000	1.3	0.3	0.3	281000	609	100
7/14/2008 17:04	R08070244-009	418	4.3	-5000	0.6	0.4	0.6	244000	575	100
8/19/2008 19:08	R08080301-004	362	4.2	-5000	0.8	0.4	0.6	318000	944	100
9/23/2008 13:55	R08090356-002	445	4.1	-5000	0.9	0.3	0.4	304000	704	100
10/20/2008 15:00	R08100295-009	356	3.5	-5000	1.3	0.4	0.5	344000	809	100
11/18/2008 13:55	R08110211-012	398	3.7	0.2	0.08	0.3	0.4	335000	872	100
12/17/2008 10:48	R08120255-002	291	2.9	0.2	1.5	0.5	0.5	2200	73	100
1/20/2009 12:50	R09010301-007	258	3.6	-5000	1.1	0.4	0.5	133000	469	100
2/24/2009 16:18	R09020293-011	336	3	-5000	1.3	0.4	0.3	389000	851	100
688 - Monitor Well, Screened Interval 3446.36 to 3456.36 ft AMSL										
4/2/2008 18:07	R08040058-001	0.3	0.1	0.2	0.9	0.2	0.1	608	89.1	100
4/22/2008 13:26	R08040287-002	1.2	0.2	0.1	0.02	0.3	0.5	307	51.1	100
6/10/2008 16:37	R08060210-002	2.5	0.5	-5000	-0.3	0.1	0.4	749	105	100
6/30/2008 18:39	R08070005-002	0.6	0.2	-5000	-0.3	0.2	0.4	426	91.9	100
7/7/2008 18:49	R08070115-006	6.7	0.5	-5000	-0.3	0.2	0.5	227	50.3	100
7/28/2008 15:45	R08070471-001	0.6	0.2	0.3	-0.4	0.2	0.6	1160	127	100
8/20/2008 10:07	R08080332-001	1.7	0.4	-5000	-0.3	0.2	0.5	449	90.9	100
9/30/2008 8:30	R08100014-001	0.6	0.2	-5000	0.09	0.3	0.4	535	219	100
10/20/2008 12:15	R08100295-005	1.6	0.3	-5000	-0.3	0.2	0.5	184	69.2	100
11/18/2008 10:00	R08110211-004	2.7	0.3	0.2	0.2	0.3	0.4	162	81.3	100
12/22/2008 9:45	R08120281-001	0.7	0.2	0.2	0.1	0.3	0.5	81.1	41.5	100
1/20/2009 15:35	R09010301-012	3.8	0.4	-5000	0.1	0.3	0.5	152	57.4	100
2/24/2009 13:23	R09020293-006	7.9	0.5	-5000	0.2	0.2	0.3	218	67.9	100

POWERTECH (USA) INC.

Analyte		Thorium 230 - Dissolved			Thorium 230 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Fall River Upgradient							
628 - Stock Well, Screened Interval Pending Confirmation							
9/28/2007 9:23	R07100002-001	<0.2		0.2	<0.2		0.2
11/14/2007 10:59	R07110184-001	<0.2		0.2	0.3	0.1	0.2
2/20/2008 18:30	R08020220-005	<0.2		0.2	<0.2		0.2
5/29/2008 15:02	R08050419-004	0	0.09	0.2	0.1	0.1	0.2
631 - Stock Well, Screened Interval 3665.37 to 3715.37 ft AMSL							
9/26/2007 16:40	R07090384-004	<0.2		0.2	<0.2		0.2
11/14/2007 15:20	R07110184-004	<0.2		0.2	<0.2		0.2
2/20/2008 13:55	R08020220-003	<0.2		0.2	0.6	0.3	0.2
5/19/2008 11:06	R08050251-001	0.1	0.1	0.2	0	0.1	0.2
698 - Monitor Well, Screened Interval 3509.25 to 3534.25 ft AMSL							
3/30/2008 14:04	R08030315-002	0	0.1	0.2	0.4	0.2	0.2
4/22/2008 11:30	R08040287-004	0	0.1	0.2	0.2	0.2	0.2
5/28/2008 12:35	R08050406-001	0	0.1	0.2	0.7	0.3	0.2
6/24/2008 11:55	R08060427-001	0	0.07	0.2	0.7	0.3	0.2
7/14/2008 18:43	R08070244-010	0.1	0.09	0.2	0.9	0.4	0.2
8/19/2008 17:35	R08080301-003	0	0.1	0.2	0.5	0.3	0.2
9/22/2008 13:05	R08090314-003	<0.2	0.3	0.2	0	0.05	0.2
10/20/2008 13:52	R08100295-004	0	0.08	0.2	0.2	0.05	0.2
11/18/2008 12:00	R08110211-008	0.1	0.1	0.2	0.2	0.07	0.2
12/17/2008 13:00	R08120255-005	0.1	0.2	0.2	0.2	0.3	0.2
1/20/2009 14:07	R09010301-009	0.1	0.2	0.2	1.9	0.6	0.2
2/24/2009 12:10	R09020293-004	0.03	0.2	0.3	1	0.5	0.4
706 - Monitor Well, Screened Interval 3510.32 to 3540.32 ft AMSL							
1/18/2010 0:00	R10010180-002	0.01	0.06	0.1	0.06	0.1	-500
2/22/2010 0:00	R10020266-002	-0.01	0.08	0.2	-0.07	0.06	-500
3/15/2010 0:00	R10030205-003	-0.01	0.06	0.1	-0.001	0.05	-500
4/21/2010 0:00	R10040303-002	0.004	0.05	0.1	0.1	0.1	-500
5/17/2010 0:00	R10050253-002	0.006	0.07	0.1	-0.1	0.2	-500
6/22/2010 0:00	R10060444-002	0.8	0.3	0.1	-0.2	0.2	-500
7/27/2010 0:00	R10070459-001	0.04	0.09	0.2	-0.2	0.08	-500
8/23/2010 0:00	R10080398-002	-0.02	0.1	0.2	-0.03	0.1	0.2
9/28/2010 0:00	R10090519-002	0.008	0.06	0.1	0.05	0.07	0.08
10/25/2010 0:00	R10100355-002	0.001	0.06	0.1	-0.1	0.2	0.3
11/15/2010 0:00	R10110179-001	0.03	0.06	0.1	-0.2	0.1	0.2
12/14/2010 0:00	R10110179-003	0.04	0.07	0.1	-0.1	0.1	0.2
Fall River Near							
681 - Monitor Well, Screened Interval 3030.31 to 3045.31 ft AMSL							
1/30/2008 15:40	R08010296-002	<0.2		0.2	<0.2		0.2
3/30/2008 17:50	R08030315-008	0.3	0.2	0.2	0.2	0.2	0.2
4/21/2008 20:06	R08040250-006	0	0.1	0.2	0.2	0.2	0.2
5/12/2008 12:45	R08050143-001	0	0.1	0.2	0.7	0.3	0.2
5/18/2008 11:18	R08050229-001	0.1	0.1	0.2	0.1	0.2	0.2
6/25/2008 17:30	R08060452-003	0	0.05	0.2	0	0.2	0.2
7/1/2008 16:54	R08070035-005	0	0.05	0.2	-0.1	0.2	0.2
7/14/2008 17:04	R08070244-009	0.1	0.07	0.2	0.1	0.2	0.2
8/19/2008 19:08	R08080301-004	0	0.09	0.2	0	0.2	0.2
9/23/2008 13:55	R08090356-002	0	0.09	0.2	0.1	0.05	0.2
10/20/2008 15:00	R08100295-009	0.1	0.08	0.2	-0.2	0.02	0.2
11/18/2008 13:55	R08110211-012	0.1	0.1	0.2	0	0.05	0.2
12/17/2008 10:48	R08120255-002	0.1	0.1	0.2	-0.1	0.1	0.2
1/20/2009 12:50	R09010301-007	0.1	0.1	0.2	0.1	0.2	0.2
2/24/2009 16:18	R09020293-011	-0.001	0.05	0.1	0.1	0.2	0.3
688 - Monitor Well, Screened Interval 3446.36 to 3456.36 ft AMSL							
4/2/2008 18:07	R08040058-001	0	0.1	0.2	0.7	0.3	0.2
4/22/2008 13:26	R08040287-002	0	0.1	0.2	15.9	1.4	0.2
6/10/2008 16:37	R08060210-002	0	0.06	0.2	0.1	0.1	0.2
6/30/2008 18:39	R08070005-002	0	0.05	0.2	0	0.2	0.2
7/7/2008 18:49	R08070115-006	0	0.05	0.2	0.1	0.2	0.2
7/28/2008 15:45	R08070471-001	0.1	0.1	0.2	0.2	0.3	0.2
8/20/2008 10:07	R08080332-001	0	0.1	0.2	0	0.1	0.2
9/30/2008 8:30	R08100014-001	-0.1	0.3	0.2	-0.1	0.05	0.2
10/20/2008 12:15	R08100295-005	0	0.1	0.2	0	0.05	0.2
11/18/2008 10:00	R08110211-004	0	0.2	0.2	-0.2	0.05	0.2
12/22/2008 9:45	R08120281-001	0	0.1	0.2	0.1	0.2	0.2
1/20/2009 15:35	R09010301-012	0.1	0.09	0.2	-0.1	0.2	0.2
2/24/2009 13:23	R09020293-006	0.03	0.08	0.2	0.1	0.3	0.4

POWERTECH (USA) INC.

Analyte		Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	RL	Result	RL	Result	RL
Hydro ID Date & Time Collected	ELI Lab ID	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Fall River Upgradient							
628 - Stock Well, Screened Interval Pending Confirmation							
9/28/2007 9:23	R07100002-001	0.0017	0.0003	<0.0003	0.0003	NM	NM
11/14/2007 10:59	R07110184-001	0.0034	0.0003	<0.0003	0.0003	NM	NM
2/20/2008 18:30	R08020220-005	0.003	0.0003	<0.0003	0.0003	0.0031	0.0003
5/29/2008 15:02	R08050419-004	0.0027	0.0003	<0.0003	0.0003	0.0029	0.0003
631 - Stock Well, Screened Interval 3665.37 to 3715.37 ft AMSL							
9/26/2007 16:40	R07090384-004	0.0027	0.0003	<0.0003	0.0003	0.003	0.0003
11/14/2007 15:20	R07110184-004	0.0029	0.0003	<0.0003	0.0003	NM	NM
2/20/2008 13:55	R08020220-003	0.0027	0.0003	<0.0003	0.0003	0.0026	0.0003
5/19/2008 11:06	R08050251-001	0.0026	0.0003	<0.0003	0.0003	0.0028	0.0003
698 - Monitor Well, Screened Interval 3509.25 to 3534.25 ft AMSL							
3/30/2008 14:04	R08030315-002	0.109	0.0003	0.0024	0.0003	0.123	0.0003
4/22/2008 11:30	R08040287-004	0.11	0.0003	0.0006	0.0003	0.119	0.0003
5/28/2008 12:35	R08050406-001	0.101	0.0003	0.0038	0.0003	0.116	0.0003
6/24/2008 11:55	R08060427-001	0.104	0.0003	0.0043	0.0003	0.113	0.0003
7/14/2008 18:43	R08070244-010	0.119	0.0003	0.0055	0.0003	0.116	0.0003
8/19/2008 17:35	R08080301-003	0.113	0.0003	0.0023	0.0003	0.101	0.0005
9/22/2008 13:05	R08090314-003	0.103	0.0003	0.0006	0.0003	0.102	0.0005
10/20/2008 13:52	R08100295-004	0.103	0.0003	0.0036	0.0003	0.132	0.0003
11/18/2008 12:00	R08110211-008	0.106	0.0003	0.0042	0.0003	0.103	0.0003
12/17/2008 13:00	R08120255-005	0.0998	0.0003	0.0028	0.0009	0.112	0.0003
1/20/2009 14:07	R09010301-009	0.1	0.0003	0.0021	0.0003	0.108	0.0003
2/24/2009 12:10	R09020293-004	0.108	0.0003	0.005	0.0003	0.113	0.0003
706 - Monitor Well, Screened Interval 3510.32 to 3540.32 ft AMSL							
1/18/2010 0:00	R10010180-002	0.0089	0.0003	<0.0003	0.0003	0.0087	0.0003
2/22/2010 0:00	R10020266-002	0.0079	0.0003	0.0011	0.0003	0.008	0.0003
3/15/2010 0:00	R10030205-003	0.0078	0.0003	<0.0003	0.0003	0.0088	0.0003
4/21/2010 0:00	R10040303-002	0.0084	0.0003	<0.0003	0.0003	0.0083	0.0003
5/17/2010 0:00	R10050253-002	0.0086	0.0003	<0.0003	0.0003	0.0088	0.0003
6/22/2010 0:00	R10060444-002	0.0087	0.0003	<0.0003	0.0003	0.0081	0.0003
7/27/2010 0:00	R10070459-001	0.0069	0.0003	<0.0003	0.0003	0.008	0.0003
8/23/2010 0:00	R10080398-002	0.0087	0.0003	<0.0003	0.0003	0.0083	0.0003
9/28/2010 0:00	R10090519-002	0.0081	0.0003	<0.0003	0.0003	0.0085	0.0003
10/25/2010 0:00	R10100355-002	0.0086	0.0003	<0.0003	0.0003	0.0089	0.0003
11/15/2010 0:00	R10110179-001	0.0082	0.0003	<0.0003	0.0003	0.0098	0.0003
12/14/2010 0:00	R10110179-003	0.0083	0.0003	<0.0003	0.0003	0.0084	0.0003
Fall River Near							
681 - Monitor Well, Screened Interval 3030.31 to 3045.31 ft AMSL							
1/30/2008 15:40	R08010296-002	0.0117	0.0003	0.001	0.0003	NM	NM
3/30/2008 17:50	R08030315-008	0.0092	0.0003	<0.0003	0.0003	0.0099	0.0003
4/21/2008 20:06	R08040250-006	0.0098	0.0003	<0.0003	0.0003	0.0102	0.0003
5/12/2008 12:45	R08050143-001	0.0095	0.0003	<0.0003	0.0003	0.0104	0.0003
5/18/2008 11:18	R08050229-001	0.0096	0.0003	<0.0003	0.0003	0.0108	0.0003
6/25/2008 17:30	R08060452-003	0.0097	0.0003	<0.0003	0.0003	0.0102	0.0003
7/1/2008 16:54	R08070035-005	0.0094	0.0003	<0.0003	0.0003	0.0092	0.0003
7/14/2008 17:04	R08070244-009	0.0097	0.0003	<0.0003	0.0003	0.0104	0.0003
8/19/2008 19:08	R08080301-004	0.01	0.0003	<0.0003	0.0003	0.0037	0.0003
9/23/2008 13:55	R08090356-002	0.0093	0.0003	<0.0003	0.0003	0.0098	0.0003
10/20/2008 15:00	R08100295-009	0.0094	0.0003	<0.0003	0.0003	0.0102	0.0003
11/18/2008 13:55	R08110211-012	0.0098	0.0003	<0.0003	0.0003	0.0087	0.0003
12/17/2008 10:48	R08120255-002	0.0083	0.0003	<0.0009	0.0009	0.0077	0.0003
1/20/2009 12:50	R09010301-007	0.0081	0.0003	<0.0003	0.0003	0.0084	0.0003
2/24/2009 16:18	R09020293-011	0.0092	0.0003	<0.0003	0.0003	0.0086	0.0003
688 - Monitor Well, Screened Interval 3446.36 to 3456.36 ft AMSL							
4/2/2008 18:07	R08040058-001	<0.0003	0.0003	<0.0008	0.0008	<0.0003	0.0003
4/22/2008 13:26	R08040287-002	<0.0003	0.0003	0.0147	0.0003	<0.0003	0.0003
6/10/2008 16:37	R08060210-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
6/30/2008 18:39	R08070005-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
7/7/2008 18:49	R08070115-006	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
7/28/2008 15:45	R08070471-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
8/20/2008 10:07	R08080332-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
9/30/2008 8:30	R08100014-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
10/20/2008 12:15	R08100295-005	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
11/18/2008 10:00	R08110211-004	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
12/22/2008 9:45	R08120281-001	<0.0003	0.0003	<0.0009	0.0009	<0.0003	0.0003
1/20/2009 15:35	R09010301-012	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
2/24/2009 13:23	R09020293-006	<0.0003	0.0003	<0.0003	0.0003	0.0005	0.0003

POWERTECH (USA) INC.

Analyte				Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)				15 pCi/L			none		
Measurement		Water Level	Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	ft AMSL	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
695 - Monitor Well, Screened Interval 3091.12 to 3106.12 ft AMSL									
3/31/2008 16:31	R08040002-003	3630.99	flowing artesian, ice	52.2	5.4	4	-12.4	2	1
4/22/2008 12:46	R08040287-001	3627.55	flowing artesian, ice	29.4	4.2	3.7	-1.8	11.9	1
5/21/2008 14:45	R08050321-003	3627.15	flowing artesian, ice	25.6	3.6	3	3.1	18	30
6/24/2008 17:30	R08060427-004	3627.93	flowing artesian, ice	39.7	4.8	4	0.7	6.8	11.4
7/14/2008 13:42	R08070244-003	3628.83	flowing artesian, ice	28.2	4.2	3.9	-2	5.5	9.2
8/20/2008 14:20	R08080332-005	3629.12	flowing artesian, ice	21.6	4	3.9	-1	6.3	10.7
9/23/2008 11:00	R08090356-007	3629.49	flowing artesian, ice	44	9.2	10.2	0.1	5.3	9
10/21/2008 9:10	R08100295-012	3628.48	flowing artesian, ice	27.8	3.9	3.1	-0.4	3.7	6.1
11/18/2008 13:25	R08110211-009	3629.52	flowing artesian, ice	19.2	4	4.4	0.3	2.6	4.4
12/17/2008 15:10	R08120255-010	3626.4	flowing artesian, ice	26.8	4	3.4	3.4	4.8	8
1/20/2009 12:15	R09010301-005	3629.4	flowing artesian, ice	35.8	4.3	3.6	1.5	2.5	4.2
2/24/2009 16:56	R09020293-013	3629.4	flowing artesian, ice	18.7	4.1	4.7	0.9	1.6	2.7
Fall River Downgradient									
7 - Domestic Well, Screened Interval Pending Confirmation									
10/3/2006 11:12	R06100076-004	NM	tap, ice	17	0.8	1	NM		
9/28/2007 17:28	R07100002-009	NM	tap, ice	4.4	1.2	1	<1		1
11/12/2007 8:20	R07110146-002	NM	tap, ice	7.2	1.1	1	<1		1
2/20/2008 8:45	R08020220-002	NM	tap, ice	15.5	3.6	4	24	3.2	1
5/29/2008 11:10	R08050419-002	NM	tap, ice	3.3	2.8	4.2	0.5	3.5	5.9
8 - Domestic Well, Screened Interval 3312 to 3384 ft AMSL									
9/26/2007 14:33	R07090384-003	3558.6	spigot, ice	5	1	1	<1		1
11/27/2007 16:30	R07110303-005	NM	spigot, ice	8.7	1.1	1	4	0.9	1
2/5/2008 10:20	R08020052-001	NM	spigot, ice	5.4	1.6	1	3	0.8	1
5/29/2008 11:41	R08050419-003	NM	spigot, ice	3.2	2.6	4	0.8	3.5	5.9
18 - Domestic Well, Screened Interval Pending Confirmation									
10/3/2006 10:07	R06100076-001	NM	flowing artesian, ice	37	1	1	NM		
9/26/2007 10:39	R07090384-001	NM	flowing artesian, ice	15.7	1.3	1	<1		1
11/12/2007 10:15	R07110146-004	NM	flowing artesian, ice	18.9	1.3	1	4.6	1.1	1
2/12/2008 11:08	R08020130-003	NM	flowing artesian, ice	31.7	1.4	1	<1		1
5/30/2008 11:12	R08050427-001	NM	flowing artesian, ice	27.5	4.2	4	-1	4.9	8.2
694 - Monitor Well, Screened Interval 3208.69 to 3223.69 ft AMSL									
3/30/2008 10:11	R08030315-001	3646.77	flowing artesian, ice	8.8	3.2	4.1	-9.8	2.6	1
4/21/2008 12:24	R08040250-001	NM	flowing artesian, ice	19.2	3.4	3.4	0	8.3	1
5/21/2008 15:54	R08050321-004	3646.39	flowing artesian, ice	10.6	2.8	3.2	-2.3	17.2	29
6/24/2008 15:16	R08060427-003	3647.11	flowing artesian, ice	23.7	4	3.9	-0.1	6.8	11.4
7/14/2008 15:30	R08070244-005	3646.93	flowing artesian, ice	15.1	3.3	3.7	1.1	5.5	9.2
8/20/2008 15:45	R08080332-007	3647.37	flowing artesian, ice	12.5	3.4	4	0	6.4	10.7
9/23/2008 10:00	R08090356-005	3646.73	flowing artesian, ice	7.4	3.6	5.1	-2	5.3	9
10/21/2008 8:25	R08100295-013	3646.73	flowing artesian, ice	9.1	2.8	3.3	-1	3.6	6.1
11/18/2008 9:00	R08110211-003	3646.72	flowing artesian, ice	9.2	3.3	4.4	-0.1	2.6	4.4
12/17/2008 15:45	R08120255-011	3647.65	flowing artesian, ice	9.3	2.8	3.3	2.2	2.4	4
1/20/2009 17:00	R09010301-014	3638.19	flowing artesian, ice	25.9	3.9	3.7	-0.9	2.5	4.2
2/24/2009 17:15	R09020293-014	3647.88	flowing artesian, ice	8.3	3.5	4.9	1.3	1.6	2.7

POWERTECH (USA) INC.

Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
695 - Monitor Well, Screened Interval 3091.12 to 3106.12 ft AMSL										
3/31/2008 16:31	R08040002-003	0		1	1.1	1.1	1	0.6	0.5	1
4/22/2008 12:46	R08040287-001	-2.1	0.9	1	1.6	1.2	1	0.4	0.38	1
5/21/2008 14:45	R08050321-003	-0.7	5.2	8.8	-0.3	0.1	1	-0.2	0.24	1
6/24/2008 17:30	R08060427-004	2.9	4.4	7.4	0.1	0.4	1	0	0.17	1
7/14/2008 13:42	R08070244-003	-5	12.7	21.4	-0.1	0.49	1	0.2	0.35	1
8/20/2008 14:20	R08080332-005	-6	10.5	17.8	-0.2	0.4	1	0.1	0.31	1
9/23/2008 11:00	R08090356-007	-2	5.5	9.2	0.2	0.84	1	0.066	0.45	
10/21/2008 9:10	R08100295-012	-1	4	6.8	0	0.25	1	0	0.22	1
11/18/2008 13:25	R08110211-009	-0.9	5.4	9	0	0.19	1	0.058	0.28	
12/17/2008 15:10	R08120255-010	5.9	6.3	10.4	0	0.13	1	0.2	0.38	1
1/20/2009 12:15	R09010301-005	6.6	5.2	8.5	0.051	0.33	0.74	0.13	0.29	0.51
2/24/2009 16:56	R09020293-013	0.1	3.4	5.7	0.16	0.4	0.74	0.25	0.48	0.83
Fall River Downgradient										
7 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 11:12	R06100076-004	NM			NM			NM		
9/28/2007 17:28	R07100002-009	<1		1	<1		1	<1		1
11/12/2007 8:20	R07110146-002	<1		1	2.1	1.7	1	<1		1
2/20/2008 8:45	R08020220-002	<1		1	<1		1	<1		1
5/29/2008 11:10	R08050419-002	-7.4	10.4	17.7	0	0.6	1	-0.1	0.31	1
8 - Domestic Well, Screened Interval 3312 to 3384 ft AMSL										
9/26/2007 14:33	R07090384-003	<1		1	<1		1	<1		1
11/27/2007 16:30	R07110303-005	<1		1	<1		1	<1		1
2/5/2008 10:20	R08020052-001	1.9	0.91	1	1.6	1.2	1	<1		1
5/29/2008 11:41	R08050419-003	4.9	10.6	17.7	-0.2	0.1	1	-0.1	0.33	1
18 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 10:07	R06100076-001	NM			NM			NM		
9/26/2007 10:39	R07090384-001	<1		1	<1		1	6	4.4	1
11/12/2007 10:15	R07110146-004	<1		1	<1		1	<1		1
2/12/2008 11:08	R08020130-003	<1		1	2.2	1.8	1	<1		1
5/30/2008 11:12	R08050427-001	29.6	5.7	8.7	0	0.7	1	1.7	0.93	1
694 - Monitor Well, Screened Interval 3208.69 to 3223.69 ft AMSL										
3/30/2008 10:11	R08030315-001	0	0.9	1	1.8	1.3	1	0.9	0.71	1
4/21/2008 12:24	R08040250-001	0	0.9	1	1.4	1.1	1	0.2	0.38	1
5/21/2008 15:54	R08050321-004	1.4	5.2	8.8	0.6	0.9	1	-0.1	0.24	1
6/24/2008 15:16	R08060427-003	4.8	4.5	7.4	0	0.7	1	0	0.19	1
7/14/2008 15:30	R08070244-005	0.2	12.8	21.4	0.4	0.61	1	0	0.51	1
8/20/2008 15:45	R08080332-007	-7	10.5	17.8	0	0.8	1	0	0.26	1
9/23/2008 10:00	R08090356-005	-1	5.5	9.2	0.2	0.76	1	0.17	0.46	
10/21/2008 8:25	R08100295-013	-2	4	6.8	0.1	0.29	1	0	0.17	1
11/18/2008 9:00	R08110211-003	-4	5.3	9	0	0.28	1	-0.04	0.2	
12/17/2008 15:45	R08120255-011	1.7	6.3	10.4	0	0.2	1	0.4	0.46	1
1/20/2009 17:00	R09010301-014	-1	4.8	8	0.045	0.26	0.58	0.056	0.28	0.59
2/24/2009 17:15	R09020293-014	-0.2	3.4	5.7	-0.031	0.19	0.52	0.31	0.38	0.5

POWERTECH (USA) INC.

Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Radon		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
695 - Monitor Well, Screened Interval 3091.12 to 3106.12 ft AMSL										
3/31/2008 16:31	R08040002-003	6.3	0.4	0.1	0.6	0.2	0.2	1400	76.5	100
4/22/2008 12:46	R08040287-001	5	0.4	0.1	-0.4	0.2	0.5	1400	64	100
5/21/2008 14:45	R08050321-003	3.7	0.4	-5000	-0.2	0.2	0.5	2090	155	100
6/24/2008 17:30	R08060427-004	5.2	0.5	-5000	-0.1	0.2	0.5	2120	154	100
7/14/2008 13:42	R08070244-003	4.7	0.5	-5000	-0.4	0.2	0.6	1490	65	100
8/20/2008 14:20	R08080332-005	3.9	0.5	-5000	-0.005	0.3	0.5	1950	107	100
9/23/2008 11:00	R08090356-007	10.4	0.7	-5000	0.9	0.3	0.4	357	62.3	100
10/21/2008 9:10	R08100295-012	4	0.4	-5000	-0.3	0.3	0.5	1860	79.1	100
11/18/2008 13:25	R08110211-009	4.8	0.4	0.2	-0.2	0.2	0.4	2020	102	100
12/17/2008 15:10	R08120255-010	4.8	0.4	0.2	-0.4	0.2	0.5	1880	68.3	100
1/20/2009 12:15	R09010301-005	4.5	0.5	-5000	-0.1	0.2	0.5	1840	78.9	100
2/24/2009 16:56	R09020293-013	4.7	0.4	-5000	-0.1	0.2	0.3	1600	83.2	100
Fall River Downgradient										
7 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 11:12	R06100076-004	2.6	0.6	0.2	NM			NM		
9/28/2007 17:28	R07100002-009	0.6	0.2	0.2	<0.2		0.2	NM		
11/12/2007 8:20	R07110146-002	1.1	0.4	0.2	<0.2		0.2	206	65	100
2/20/2008 8:45	R08020220-002	0.7	0.2	0.1	<0.9		0.9	242	44.2	100
5/29/2008 11:10	R08050419-002	0.9	0.2	-5000	-0.3	0.2	0.5	451	98.8	100
8 - Domestic Well, Screened Interval 3312 to 3384 ft AMSL										
9/26/2007 14:33	R07090384-003	<0.2		0.2	3.5	0.8	0.2	NM		
11/27/2007 16:30	R07110303-005	2.7	0.5	0.2	<0.2		0.2	123	54.5	100
2/5/2008 10:20	R08020052-001	1.5	0.4	0.2	2.8	1.4	0.2	329	104	100
5/29/2008 11:41	R08050419-003	1.2	0.2	-5000	-0.4	0.2	0.5	514	99.3	100
18 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 10:07	R06100076-001	5.8	1.2	0.2	NM			762	69.3	100
9/26/2007 10:39	R07090384-001	<0.2		0.2	4	0.8	0.2	NM		
11/12/2007 10:15	R07110146-004	3.2	0.6	0.2	<0.2		0.2	945	73.2	100
2/12/2008 11:08	R08020130-003	3.2	0.4	0.2	1.1	0.6	0.2	1220	126	100
5/30/2008 11:12	R08050427-001	2.6	0.3	-5000	1.1	0.4	0.4	1210	92.1	100
694 - Monitor Well, Screened Interval 3208.69 to 3223.69 ft AMSL										
3/30/2008 10:11	R08030315-001	1.6	0.3	0.2	1	0.4	0.3	313	79.4	100
4/21/2008 12:24	R08040250-001	4.2	0.4	0.1	-0.4	0.2	0.5	251	60.4	100
5/21/2008 15:54	R08050321-004	1.9	0.3	-5000	-0.2	0.2	0.5	619	135	100
6/24/2008 15:16	R08060427-003	2.2	0.4	-5000	-0.3	0.2	0.4	611	137	100
7/14/2008 15:30	R08070244-005	2.3	0.5	-5000	-0.4	0.2	0.6	245	49.4	100
8/20/2008 15:45	R08080332-007	1.8	0.4	-5000	-0.1	0.3	0.6	401	86.8	100
9/23/2008 10:00	R08090356-005	1.7	0.3	-5000	-0.04	0.2	0.4	296	61.9	100
10/21/2008 8:25	R08100295-013	1.4	0.2	-5000	-0.4	0.2	0.5	281	60.8	100
11/18/2008 9:00	R08110211-003	1.7	0.3	0.2	-0.4	0.2	0.4	331	82.4	100
12/17/2008 15:45	R08120255-011	1.5	0.2	0.2	-0.3	0.2	0.5	215	49.3	100
1/20/2009 17:00	R09010301-014	1.7	0.3	-5000	-0.2	0.2	0.4	270	58.4	100
2/24/2009 17:15	R09020293-014	2.2	0.2	-5000	-0.1	0.2	0.3	235	66.3	100

POWERTECH (USA) INC.

Analyte		Thorium 230 - Dissolved			Thorium 230 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
695 - Monitor Well, Screened Interval 3091.12 to 3106.12 ft AMSL							
3/31/2008 16:31	R08040002-003	0	0.1	0.2	0.1	0.1	0.2
4/22/2008 12:46	R08040287-001	0	0.1	0.2	0.3	0.2	0.2
5/21/2008 14:45	R08050321-003	0	0.1	0.2	0	0.1	0.2
6/24/2008 17:30	R08060427-004	0	0.1	0.2	0	0.1	0.2
7/14/2008 13:42	R08070244-003	0	0.09	0.2	0	0.2	0.2
8/20/2008 14:20	R08080332-005	0	0.09	0.2	0	0.09	0.2
9/23/2008 11:00	R08090356-007	0.1	0.2	0.2	0.5	0.07	0.2
10/21/2008 9:10	R08100295-012	0.1	0.1	0.2	0	0.05	0.2
11/18/2008 13:25	R08110211-009	0.2	0.1	0.2	0.1	0.07	0.2
12/17/2008 15:10	R08120255-010	0.1	0.2	0.2	-0.1	0.2	0.2
1/20/2009 12:15	R09010301-005	0	0.08	0.2	0	0.2	0.2
2/24/2009 16:56	R09020293-013	-0.02	0.07	0.2	0.02	0.2	0.3
Fall River Downgradient							
7 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 11:12	R06100076-004	NM			NM		
9/28/2007 17:28	R07100002-009	<0.2		0.2	<0.2		0.2
11/12/2007 8:20	R07110146-002	<0.2		0.2	<0.2		0.2
2/20/2008 8:45	R08020220-002	<0.2		0.2	0.2	0.2	0.2
5/29/2008 11:10	R08050419-002	0	0.08	0.2	0.2	0.3	0.2
8 - Domestic Well, Screened Interval 3312 to 3384 ft AMSL							
9/26/2007 14:33	R07090384-003	<0.2		0.2	<0.2		0.2
11/27/2007 16:30	R07110303-005	<0.2		0.2	<0.2		0.2
2/5/2008 10:20	R08020052-001	<0.2		0.2	<0.2		0.2
5/29/2008 11:41	R08050419-003	0.1	0.07	0.2	0	0.1	0.2
18 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 10:07	R06100076-001	NM			NM		
9/26/2007 10:39	R07090384-001	<0.2		0.2	<0.2		0.2
11/12/2007 10:15	R07110146-004	<0.2		0.2	<0.2		0.2
2/12/2008 11:08	R08020130-003	0.2	0.03	0.2	<0.2		0.2
5/30/2008 11:12	R08050427-001	0	0.1	0.2	0.1	0.2	0.2
694 - Monitor Well, Screened Interval 3208.69 to 3223.69 ft AMSL							
3/30/2008 10:11	R08030315-001	0.2	0.1	0.2	0.1	0.2	0.2
4/21/2008 12:24	R08040250-001	0	0.1	0.2	0	0.1	0.2
5/21/2008 15:54	R08050321-004	0	0.1	0.2	0.3	0.3	0.2
6/24/2008 15:16	R08060427-003	0.1	0.1	0.2	0	0.2	0.2
7/14/2008 15:30	R08070244-005	0	0.1	0.2	0	0.2	0.2
8/20/2008 15:45	R08080332-007	0	0.07	0.2	0	0.2	0.2
9/23/2008 10:00	R08090356-005	0.1	0.09	0.2	0	0.05	0.2
10/21/2008 8:25	R08100295-013	0	0.1	0.2	0	0.05	0.2
11/18/2008 9:00	R08110211-003	0.1	0.2	0.2	0	0.05	0.2
12/17/2008 15:45	R08120255-011	0	0.2	0.2	0.1	0.2	0.2
1/20/2009 17:00	R09010301-014	0	0.09	0.2	-0.1	0.2	0.2
2/24/2009 17:15	R09020293-014	0.05	0.07	0.1	-0.09	0.2	0.4

POWERTECH (USA) INC.

Analyte		Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	RL	Result	RL	Result	RL
Hydro ID Date & Time Collected	ELI Lab ID	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
695 - Monitor Well, Screened Interval 3091.12 to 3106.12 ft AMSL							
3/31/2008 16:31	R08040002-003	0.003	0.0003	<0.0003	0.0003	0.0031	0.0003
4/22/2008 12:46	R08040287-001	0.0029	0.0003	<0.0003	0.0003	0.0032	0.0003
5/21/2008 14:45	R08050321-003	0.0029	0.0003	<0.0003	0.0003	0.0029	0.0003
6/24/2008 17:30	R08060427-004	0.0027	0.0003	<0.0003	0.0003	0.0027	0.0003
7/14/2008 13:42	R08070244-003	0.0028	0.0003	<0.0003	0.0003	0.0031	0.0003
8/20/2008 14:20	R08080332-005	0.0026	0.0003	<0.0003	0.0003	0.0026	0.0003
9/23/2008 11:00	R08090356-007	0.0059	0.0003	<0.0003	0.0008	0.0085	0.0003
10/21/2008 9:10	R08100295-012	0.003	0.0003	<0.0003	0.0003	0.003	0.0003
11/18/2008 13:25	R08110211-009	0.0029	0.0003	<0.0003	0.0003	0.0026	0.0003
12/17/2008 15:10	R08120255-010	0.0026	0.0003	<0.0009	0.0009	0.0026	0.0003
1/20/2009 12:15	R09010301-005	0.0031	0.0003	<0.0003	0.0003	0.0031	0.0003
2/24/2009 16:56	R09020293-013	0.0028	0.0003	<0.0003	0.0003	0.0027	0.0003
Fall River Downgradient							
7 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 11:12	R06100076-004	<0.001	0.001	NM	NM	NM	NM
9/28/2007 17:28	R07100002-009	<0.0003	0.0003	<0.0003	0.0003	NM	NM
11/12/2007 8:20	R07110146-002	<0.0003	0.0003	<0.0003	0.0003	NM	NM
2/20/2008 8:45	R08020220-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/29/2008 11:10	R08050419-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
8 - Domestic Well, Screened Interval 3312 to 3384 ft AMSL							
9/26/2007 14:33	R07090384-003	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
11/27/2007 16:30	R07110303-005	0.0003	0.0003	<0.0003	0.0003	NM	NM
2/5/2008 10:20	R08020052-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/29/2008 11:41	R08050419-003	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
18 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 10:07	R06100076-001	0.007	0.001	NM	NM	NM	NM
9/26/2007 10:39	R07090384-001	0.0061	0.0003	0.0017	0.0003	NM	NM
11/12/2007 10:15	R07110146-004	0.0066	0.0003	<0.0003	0.0003	NM	NM
2/12/2008 11:08	R08020130-003	0.0066	0.0003	<0.0003	0.0003	0.0062	0.0005
5/30/2008 11:12	R08050427-001	0.0059	0.0003	<0.0003	0.0003	0.0062	0.0003
694 - Monitor Well, Screened Interval 3208.69 to 3223.69 ft AMSL							
3/30/2008 10:11	R08030315-001	0.0005	0.0003	<0.0003	0.0003	0.0006	0.0003
4/21/2008 12:24	R08040250-001	0.0005	0.0003	<0.0003	0.0003	0.0006	0.0003
5/21/2008 15:54	R08050321-004	0.0006	0.0003	<0.0003	0.0003	0.0006	0.0003
6/24/2008 15:16	R08060427-003	0.0006	0.0003	<0.0003	0.0003	0.0006	0.0003
7/14/2008 15:30	R08070244-005	0.0007	0.0003	<0.0003	0.0003	0.0005	0.0003
8/20/2008 15:45	R08080332-007	0.0005	0.0003	<0.0003	0.0003	0.0005	0.0003
9/23/2008 10:00	R08090356-005	0.0005	0.0003	<0.0003	0.0003	0.0006	0.0003
10/21/2008 8:25	R08100295-013	0.0006	0.0003	<0.0003	0.0003	0.0006	0.0003
11/18/2008 9:00	R08110211-003	0.0006	0.0003	<0.0003	0.0003	0.0005	0.0003
12/17/2008 15:45	R08120255-011	0.0005	0.0003	<0.0009	0.0009	0.0005	0.0003
1/20/2009 17:00	R09010301-014	0.0006	0.0003	<0.0003	0.0003	0.0006	0.0003
2/24/2009 17:15	R09020293-014	0.0005	0.0003	<0.0003	0.0003	0.0005	0.0003

ELI - Energy Laboratories, Inc.
NM - not measured
Exceeds National Primary Drinking Water Regulations, 40 CFR 141.66 Maximum Contaminant Level
Data have been requested from ELI for inclusion in revised TR

POWERTECH (USA) INC.

Analyte				Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)				15 pCi/L			none		
Measurement		Water Level	Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	ft AMSL	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Chilson Upgradient									
16 - Domestic Well, Screened Interval Pending Confirmation									
10/3/2006 12:00	R06100076-006	NM	dedicated pump, ice	110	1.5	1	NM		
9/27/2007 19:18	R07090385-002	NM	dedicated pump, ice	62.7	2.1	1	<1		1
11/12/2007 16:05	R07110146-010	NM	dedicated pump, ice	12.2	1	1	2.2	0.7	1
3/30/2008 15:19	R08030315-004	NM	dedicated pump, ice	85.7	5.9	3.2	-27	4.1	1
6/30/2008 13:45	R08070005-001	NM	dedicated pump, ice	28.3	3.5	2.9	2	4.7	7.9
615 - Monitor Well, Screened Interval 2941 to 3029 ft AMSL									
4/1/2008 14:34	R08040028-001	3690.49	dedicated pump, ice	18.2	3	3	-2.5	0.8	1
4/21/2008 16:16	R08040250-004	3690.45	dedicated pump, ice	15.1	2.6	2.5	0	8.2	1
5/28/2008 19:20	R08050406-005	3689.93	dedicated pump, ice	15.3	2.5	2.1	3.8	4.9	8.2
6/25/2008 13:55	R08060452-002	3689.52	dedicated pump, ice	38.3	3.8	2.8	1.1	6.8	11.4
7/14/2008 11:50	R08070244-002	3689.15	dedicated pump, ice	15.3	2.8	2.8	-0.8	5.5	9.2
8/20/2008 13:26	R08080332-004	3689.2	dedicated pump, ice	17.3	3	2.9	4.6	6.4	10.7
9/22/2008 16:30	R08090314-005	3689.03	dedicated pump, ice	21.5	3.1	2.5	-1	5.3	9
10/20/2008 16:20	R08100295-010	3688.87	dedicated pump, ice	20.9	2.9	2.4	-1	3.6	6.1
11/18/2008 15:00	R08110211-013	3688.98	dedicated pump, ice	13.9	2.9	3.2	-0.2	2.6	4.4
12/17/2008 11:27	R08120255-013	3689.38	dedicated pump, ice	21.7	3	2.4	2.2	2.4	4
1/20/2009 11:10	R09010301-004	3689.48	dedicated pump, ice	21.1	3	2.7	1.2	2.5	4.2
2/24/2009 15:45	R09020293-009	3689.88	dedicated pump, ice	14.8	3.1	3.6	0.9	1.6	2.7
619 - Stock Well, Screened Interval Pending Confirmation									
9/27/2007 17:45	R07090385-001	3679.13	dedicated pump, ice	367	5.7	1	<1		1
11/12/2007 14:25	R07110146-008	3679.19	dedicated pump, ice	341	4.8	1	<1		1
3/24/2008 15:40	R08030253-002	NM	dedicated pump, ice	438	19.4	6.7	19	2.3	1
6/17/2008 18:10	R08060335-001	NM	dedicated pump, ice	398	19.5	8.8	-1.1	5	8.4
622 - Monitor Well, Screened Interval 2974.91 to 3040.91 ft AMSL									
4/1/2008 14:56	R08040028-003	3710.27	dedicated pump, ice	15	3.2	3.5	-3.5	1.1	1
4/21/2008 15:28	R08040250-003	3710.69	dedicated pump, ice	22.6	3.5	3.2	-4.1	8.1	1
5/28/2008 18:26	R08050406-004	3710.49	dedicated pump, ice	32.6	4	2.8	1.2	4.9	8.2
6/25/2008 12:05	R08060452-001	3710.31	dedicated pump, ice	36.4	4.3	3.6	-2	6.7	11.4
7/14/2008 12:35	R08070244-001	3710.46	dedicated pump, ice	31.2	4.2	3.6	2.6	5.5	9.2
8/20/2008 12:59	R08080332-003	3710.18	dedicated pump, ice	27.7	4.2	3.8	0.1	6.4	10.7
9/22/2008 16:00	R08090314-004	3710.13	dedicated pump, ice	1470	37.3	7	-1	5.3	9
10/20/2008 15:42	R08100295-006	3709.91	dedicated pump, ice	29.3	3.9	3.1	3.2	7.4	12.3
11/18/2008 14:30	R08110211-014	3709.78	dedicated pump, ice	32.6	4.6	4.2	-2	5.2	8.7
12/17/2008 14:20	R08120255-008	3709.99	dedicated pump, ice	6.8	2.4	3	2.5	2.4	4
1/20/2009 10:51	R09010301-002	3709.91	dedicated pump, ice	36.4	4.3	3.5	0.3	2.5	4.2
2/24/2009 15:31	R09020293-008	3710.15	dedicated pump, ice	44.3	5.3	4.6	0.7	1.6	2.7
650 - Stock Well, Screened Interval Pending Confirmation									
9/28/2007 19:00	R07100002-010	3682.37	dedicated pump, ice	13.1	1.6	1	<1		1
11/12/2007 15:30	R07110146-009	3682.37	dedicated pump, ice	5.6	1.5	1	1.4	0.6	1
3/24/2008 9:00	R08030253-001	3681.94	dedicated pump, ice	2.9	2.5	3.9	24	2.6	1
5/30/2008 16:30	R08050427-004	3682.02	dedicated pump, ice	2.1	2.9	4.6	1.5	4.9	8.2
705 - Monitor Well, Screened Interval 3368.42 to 3398.42 ft AMSL									
1/18/2010 0:00	R10010180-001	NM	dedicated pump, ice	3	2.9	4.6	0.3	1.7	2.8
2/22/2010 0:00	R10020266-001	NM	dedicated pump, ice	1.1	2.3	3.8	-0.1	0.8	1.3
3/15/2010 0:00	R10030205-001	NM	dedicated pump, ice	8.6	3.8	5.4	2	1.7	2.8
4/21/2010 0:00	R10040303-001	NM	dedicated pump, ice	7.5	3.3	4.6	-2	1.6	2.6
5/17/2010 0:00	R10050253-001	NM	dedicated pump, ice	3.9	3.3	5.2	0.02	1.7	2.9
6/22/2010 0:00	R10060444-001	NM	dedicated pump, ice	6.2	4.7	7.1	0.8	1.4	2.3
7/27/2010 0:00	R10070459-002	3709.57	dedicated pump, ice	6.7	4	6.1	0.4	1.4	2.3
8/23/2010 0:00	R10080398-001	3709.55	dedicated pump, ice	8.9	3.4	4.7	0.01	1	1.7
9/28/2010 0:00	R10090519-001	NM	dedicated pump, ice	-3	3.2	5.6	1.8	1.2	2
10/25/2010 0:00	R10100355-001	3710.03	dedicated pump, ice	-0.6	3.5	6	-0.5	0.9	1.4
11/15/2010 0:00	R10110179-002	3709.71	dedicated pump, ice	0.7	3.6	6	1	1	1.7
12/14/2010 0:00	R10120179-001	3709.77	dedicated pump, ice	-0.3	3.3	5.6	-0.2	0.8	1.4
3026 - Monitor Well, Screened Interval 3624.48 to 3654.48 ft AMSL									
3/30/2008 18:45	R08030315-009	3681.69	dedicated pump, ice	47.6	8.9	9.2	<1	2.1	1
4/22/2008 14:30	R08040287-003	3681.57	dedicated pump, ice	43.8	8.4	8.6	0	11.9	1
5/28/2008 15:15	R08050406-003	3681.53	dedicated pump, ice	92.4	10.5	6.9	-0.7	4.9	8.2
6/24/2008 20:06	R08060427-006	3681.65	dedicated pump, ice	116	12.8	9.9	-5.3	6.7	11.4
7/13/2008 15:28	R08070220-001	3681.58	dedicated pump, ice	80.1	11.8	10.4	3.1	5.6	9.2
8/19/2008 16:25	R08080301-001	3681.43	dedicated pump, ice	77.5	11.6	10.4	2.1	6.4	10.7
9/23/2008 11:25	R08090356-008	3681.58	dedicated pump, ice	15.9	7	9.6	1.5	5.4	9
10/20/2008 13:15	R08100295-007	3681.63	dedicated pump, ice	36	6.8	6.6	-1	3.6	6.1
11/18/2008 11:19	R08110211-007	3681.65	dedicated pump, ice	19.7	6.9	9.1	-2	2.6	4.4
12/17/2008 12:46	R08120255-004	3682.3	dedicated pump, ice	23.9	6.1	6.8	2.3	4.8	8
1/20/2009 14:25	R09010301-010	3682.33	dedicated pump, ice	51.6	7.8	7.3	-0.9	2.5	4.2
2/24/2009 11:35	R09020293-003	3682.3	dedicated pump, ice	15.4	6.6	9.2	0.4	1.6	2.7
Chilson Near									
13 - Domestic Well, Screened Interval 3045 to 3090 ft AMSL									
10/3/2006 11:36	R06100076-005	NM	flowing artesian, ice	12	0.7	1	NM		
9/27/2007 15:45	R07090385-005	> 30 psi	flowing artesian, ice	8.9	1.2	1	<1		1
11/12/2007 12:15	R07110146-007	NM	flowing artesian, ice	7.5	1	1	<1		1
2/20/2008 14:41	R08020220-004	NM	flowing artesian, ice	19.5	3.4	3	4.7	1.6	1
5/19/2008 12:20	R08050251-002	NM	flowing artesian, ice	4.2	2.2	3	4.1	9.6	16

POWERTECH (USA) INC.

Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Chilson Upgradient										
16 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 12:00	R06100076-006	NM			NM			NM		
9/27/2007 19:18	R07090385-002	<1		1	<1		1	<1		1
11/12/2007 16:05	R07110146-010	1.2	0.22	1	<1		1	<1		1
3/30/2008 15:19	R08030315-004	0	1	1	0.2	0.6	1	0.8	0.57	1
6/30/2008 13:45	R08070005-001	-0.4	6.3	10.6	0	0.5	1	0	0.21	1
615 - Monitor Well, Screened Interval 2941 to 3029 ft AMSL										
4/1/2008 14:34	R08040028-001	27.1	2.1	1	0.6	1	1	0.4	0.4	1
4/21/2008 16:16	R08040250-004	-3.2	1	1	0.9	0.9	1	0.4	0.52	1
5/28/2008 19:20	R08050406-005	1.5	10.5	17.7	-0.1	0.6	1	0	0.43	1
6/25/2008 13:55	R08060452-002	3.5	4.4	7.4	0.5	0.7	1	0	0.21	1
7/14/2008 11:50	R08070244-002	-2	12.7	21.4	0	0.45	1	0	0.26	1
8/20/2008 13:26	R08080332-004	-6	10.5	17.8	0	0.1	1	0	0.31	1
9/22/2008 16:30	R08090314-005	-0.2	4.7	7.8	0.9	1.2	1	-0.04	0.2	
10/20/2008 16:20	R08100295-010	-3	4	6.8	0.1	0.25	1	0	0.22	1
11/18/2008 15:00	R08110211-013	0.5	5.4	9	0.1	0.24	1	0.097	0.28	
12/17/2008 11:27	R08120255-013	1.1	6.2	10.4	0	0.18	1	0.1	0.38	1
1/20/2009 11:10	R09010301-004	5.8	5.2	8.5	-0.027	0.2	0.54	0.14	0.32	0.57
2/24/2009 15:45	R09020293-009	0.5	3.4	5.7	0.14	0.27	0.46	0.15	0.29	0.46
619 - Stock Well, Screened Interval Pending Confirmation										
9/27/2007 17:45	R07090385-001	<1		1	<1		1	<1		1
11/12/2007 14:25	R07110146-008	<1		1	<1		1	<1		1
3/24/2008 15:40	R08030253-002	11	1.5	1	1.9	1.4	1	0.1	0.29	1
6/17/2008 18:10	R08060335-001	2	10.9	18.2	-0.1	0.5	1	0.4	0.4	1
622 - Monitor Well, Screened Interval 2974.91 to 3040.91 ft AMSL										
4/1/2008 14:56	R08040028-003	0	1.1	1	0.8	0.9	1	0	0.1	1
4/21/2008 15:28	R08040250-003	0	0.6	1	1.1	1	1	2.8	1.7	1
5/28/2008 18:26	R08050406-004	-0.9	10.5	17.7	-0.3	0.7	1	2.5	1.3	1
6/25/2008 12:05	R08060452-001	3.5	4.4	7.4	0.2	0.6	1	1	0.74	1
7/14/2008 12:35	R08070244-001	-1	12.7	21.4	0.4	0.56	1	2.8	1.2	1
8/20/2008 12:59	R08080332-003	-4	10.5	17.8	0.3	0.7	1	0.2	0.29	1
9/22/2008 16:00	R08090314-004	0.2	4.7	7.8	-0.1	0.44	1	0.39	0.47	
10/20/2008 15:42	R08100295-006	-1	4	6.8	0	0.22	1	0.3	0.41	1
11/18/2008 14:30	R08110211-014	0	5.4	9	0.1	0.24	1	0.24	0.42	
12/17/2008 14:20	R08120255-008	3.1	6.3	10.4	0	0.13	1	0	0.24	1
1/20/2009 10:51	R09010301-002	8.1	5.2	8.5	0.063	0.32	0.69	0.77	0.56	0.53
2/24/2009 15:31	R09020293-008	0.1	3.4	5.7	0.16	0.29	0.46	0.3	0.36	0.47
650 - Stock Well, Screened Interval Pending Confirmation										
9/28/2007 19:00	R07100002-010	<1		1	<1		1	<1		1
11/12/2007 15:30	R07110146-009	<1		1	<1		1	<1		1
3/24/2008 9:00	R08030253-001	12	1.5	1	0.4	0.7	1	1.2	0.63	1
5/30/2008 16:30	R08050427-004	6.2	5.3	8.7	-0.2	0.5	1	0.2	0.4	1
705 - Monitor Well, Screened Interval 3368.42 to 3398.42 ft AMSL										
1/18/2010 0:00	R10010180-001	1.9	4.3	7.1	0.05	0.22	0.44	-0.056	0.44	1.2
2/22/2010 0:00	R10020266-001	0.2	1.6	2.7	0.05	0.19	0.38	0.069	0.26	0.53
3/15/2010 0:00	R10030205-001	0.06	1.7	2.9	-0.02	0.21	0.56	-0.013	0.099	0.26
4/21/2010 0:00	R10040303-001	-0.1	3.1	5.2	-0.039	0.2	0.56	0.18	0.6	1.2
5/17/2010 0:00	R10050253-001	-0.3	3.6	6.1	-0.06	0.4	1.1	0.077	0.31	0.62
6/22/2010 0:00	R10060444-001	2.7	3.4	5.7	0.11	0.29	0.54	-0.036	0.24	0.64
7/27/2010 0:00	R10070459-002	-1	2.5	4.2	0.076	0.3	0.61	-0.1	0.34	0.95
8/23/2010 0:00	R10080398-001	-0.08	0.8	1.3	0.088	0.29	0.56	0.069	0.27	0.55
9/28/2010 0:00	R10090519-001	-0.07	0.9	1.5	-0.024	0.2	0.53	-0.004	0.075	0.19
10/25/2010 0:00	R10100355-001	0.7	1.9	3.2	-0.035	0.26	0.71	-0.013	0.24	0.62
11/15/2010 0:00	R10110179-002	1.3	2	3.3	-0.012	0.2	0.52	0.078	0.31	0.62
12/14/2010 0:00	R10120179-001	0.6	1.7	2.8	0.1	0.34	0.66	0	0.25	0.61
3026 - Monitor Well, Screened Interval 3624.48 to 3654.48 ft AMSL										
3/30/2008 18:45	R08030315-009	-3	0.8	1	0.4	0.8	1	1.9	0.88	1
4/22/2008 14:30	R08040287-003	-8.2	1.5	1	0.2	0.7	1	0	0.31	1
5/28/2008 15:15	R08050406-003	4	10.6	17.7	0	0.8	1	-0.1	0.29	1
6/24/2008 20:06	R08060427-006	6.9	4.5	7.4	0.2	0.6	1	0.2	0.36	1
7/13/2008 15:28	R08070220-001	-10	12.6	21.4	0.2	0.46	1	0.1	0.28	1
8/19/2008 16:25	R08080301-001	-5	10.5	17.8	0.2	0.6	1	0	0.19	1
9/23/2008 11:25	R08090356-008	4.4	5.6	9.2	0	1	1	0	0.35	
10/20/2008 13:15	R08100295-007	-3	4	6.8	0	0.2	1	0.2	0.33	1
11/18/2008 11:19	R08110211-007	-2	5.3	9	0	0.16	1	-0.031	0.23	
12/17/2008 12:46	R08120255-004	4	6.3	10.4	0.2	0.34	1	0	0.31	1
1/20/2009 14:25	R09010301-010	-0.5	4.8	8	0.053	0.34	0.75	-0.058	0.27	0.75
2/24/2009 11:35	R09020293-003	2.9	3.4	5.7	0.14	0.35	0.65	0.098	0.34	0.68
Chilson Near										
13 - Domestic Well, Screened Interval 3045 to 3090 ft AMSL										
10/3/2006 11:36	R06100076-005	NM			NM			NM		
9/27/2007 15:45	R07090385-005	<1		1	<1		1	5.2	4.6	1
11/12/2007 12:15	R07110146-007	<1		1	2.6	1.8	1	<1		1
2/20/2008 14:41	R08020220-004	<1		1	1.1	0.9	1	<1		1
5/19/2008 12:20	R08050251-002	-0.2	5.2	8.8	-0.6	0.1	1	0	0.26	1

POWERTECH (USA) INC.

Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Radon		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Chilson Upgradient										
16 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 12:00	R06100076-006	33.6	2.5	0.2	NM			39000	252	100
9/27/2007 19:18	R07090385-002	26.2	1.9	0.2	<0.2		0.2	NM		
11/12/2007 16:05	R07110146-010	8.1	0.9	0.2	<0.2		0.2	1090	72.1	100
3/30/2008 15:19	R08030315-004	15.3	0.8	0.2	1.4	0.4	0.3	28200	249	100
6/30/2008 13:45	R08070005-001	6.4	0.5	-5000	-0.3	0.2	0.4	3150	128	100
615 - Monitor Well, Screened Interval 2941 to 3029 ft AMSL										
4/1/2008 14:34	R08040028-001	1.8	0.2	0.1	0.3	0.1	0.1	1490	67.5	100
4/21/2008 16:16	R08040250-004	2	0.3	0.1	-0.2	0.2	0.5	1180	70.1	100
5/28/2008 19:20	R08050406-005	2	0.3	-5000	0.2	0.3	0.6	1070	45.9	100
6/25/2008 13:55	R08060452-002	7.2	0.7	-5000	-0.4	0.2	0.5	1830	105	100
7/14/2008 11:50	R08070244-002	1.2	0.3	-5000	-0.4	0.2	0.6	1420	65	100
8/20/2008 13:26	R08080332-004	1.8	0.4	-5000	-0.4	0.2	0.5	1880	106	100
9/22/2008 16:30	R08090314-005	2	0.3	-5000	-0.06	0.2	0.4	1500	59.7	100
10/20/2008 16:20	R08100295-010	2.7	0.3	-5000	-0.1	0.3	0.5	1890	87.8	100
11/18/2008 15:00	R08110211-013	1.9	0.3	0.2	0.04	0.3	0.4	1800	99.1	100
12/17/2008 11:27	R08120255-013	2.1	0.3	0.2	-0.3	0.2	0.5	1710	68.2	100
1/20/2009 11:10	R09010301-004	1.8	0.3	-5000	-0.2	0.3	0.5	1630	77.2	100
2/24/2009 15:45	R09020293-009	2.3	0.3	-5000	0.06	0.2	0.3	1590	83.6	100
619 - Stock Well, Screened Interval Pending Confirmation										
9/27/2007 17:45	R07090385-001	120	3.9	0.2	<0.2		0.2	NM		
11/12/2007 14:25	R07110146-008	100	3.6	0.2	3.5	0.3	0.2	2990	91.9	100
3/24/2008 15:40	R08030253-002	99.7	1.7	-5000	11.4	1.1	0.3	5580	140	100
6/17/2008 18:10	R08060335-001	110	1.8	-5000	8.8	1	0.6	5770	118	100
622 - Monitor Well, Screened Interval 2974.91 to 3040.91 ft AMSL										
4/1/2008 14:56	R08040028-003	2.3	0.2	0.1	0.7	0.2	0.1	501	56.4	100
4/21/2008 15:28	R08040250-003	2.7	0.3	0.1	0.9	0.4	0.5	1090	69.4	100
5/28/2008 18:26	R08050406-004	3.2	0.3	-5000	1	0.5	0.6	804	43.3	100
6/25/2008 12:05	R08060452-001	4.1	0.5	-5000	-0.2	0.2	0.5	1950	107	100
7/14/2008 12:35	R08070244-001	2.9	0.4	-5000	-0.4	0.3	0.6	824	57.9	100
8/20/2008 12:59	R08080332-003	4.4	0.6	-5000	-0.2	0.2	0.5	1370	101	100
9/22/2008 16:00	R08090314-004	3	0.4	-5000	-0.2	0.2	0.4	992	54.5	100
10/20/2008 15:42	R08100295-006	2.7	0.3	-5000	-0.2	0.3	0.5	1360	82.1	100
11/18/2008 14:30	R08110211-014	2.9	0.3	0.2	-0.1	0.2	0.4	1280	93.3	100
12/17/2008 14:20	R08120255-008	1.3	0.2	0.2	0.8	0.4	0.5	50.2	47.5	100
1/20/2009 10:51	R09010301-002	2.9	0.4	-5000	0.2	0.3	0.5	1180	72.3	100
2/24/2009 15:31	R09020293-008	7.9	0.5	-5000	0.5	0.3	0.3	1360	81.2	100
650 - Stock Well, Screened Interval Pending Confirmation										
9/28/2007 19:00	R07100002-010	2.7	0.5	0.2	0.6	0.8	0.2	NM		
11/12/2007 15:30	R07110146-009	2.4	0.5	0.2	<0.2		0.2	134	60.8	100
3/24/2008 9:00	R08030253-001	1.4	0.2	-5000	0.7	0.3	0.4	202	88.2	100
5/30/2008 16:30	R08050427-004	1.2	0.2	-5000	-0.02	0.2	0.4	254	77	100
705 - Monitor Well, Screened Interval 3368.42 to 3398.42 ft AMSL										
1/18/2010 0:00	R10010180-001	0.6	0.2	0.2	-0.2	0.03	0.08	206		100
2/22/2010 0:00	R10020266-001	0.8	0.2	0.2	0.03	0.07	0.1	<100		100
3/15/2010 0:00	R10030205-001	2.1	0.3	0.1	0.2	0.09	0.08	260		100
4/21/2010 0:00	R10040303-001	1.8	0.3	0.2	-0.01	0.07	0.1	<100		100
5/17/2010 0:00	R10050253-001	1.6	0.3	0.2	0.3	0.2	0.3	157		100
6/22/2010 0:00	R10060444-001	1.8	0.3	0.2	-0.3	0.2	0.4	243		100
7/27/2010 0:00	R10070459-002	1.8	0.3	0.2	-0.1	0.08	0.2	247		100
8/23/2010 0:00	R10080398-001	1.8	0.2	0.09	-0.2	0.1	0.3	238		100
9/28/2010 0:00	R10090519-001	1.8	0.3	0.2	-0.06	0.03	0.07	232		100
10/25/2010 0:00	R10100355-001	2.4	0.4	0.2	0.1	0.09	0.1	202		100
11/15/2010 0:00	R10110179-002	2	0.2	0.06	0.2	0.1	0.1	532		100
12/14/2010 0:00	R10120179-001	1.9	0.3	0.2	-0.2	0.1	0.3	269		100
3026 - Monitor Well, Screened Interval 3624.48 to 3654.48 ft AMSL										
3/30/2008 18:45	R08030315-009	3.6	0.4	0.2	3.3	0.6	0.3	440	76.3	100
4/22/2008 14:30	R08040287-003	2.8	0.3	0.1	0.1	0.3	0.4	304	50.7	100
5/28/2008 15:15	R08050406-003	9.6	0.6	-5000	1.2	0.4	0.5	213	37	100
6/24/2008 20:06	R08060427-006	4.7	0.4	-5000	-0.1	0.2	0.4	950	137	100
7/13/2008 15:28	R08070220-001	10.1	0.7	-5000	-0.2	0.3	0.6	560	63	100
8/19/2008 16:25	R08080301-001	9.5	0.7	-5000	-0.3	0.3	0.5	836	109	100
9/23/2008 11:25	R08090356-008	5.9	0.5	-5000	-0.06	0.2	0.4	1820	79.3	100
10/20/2008 13:15	R08100295-007	3.5	0.4	-5000	-0.8	0.4	1	254	69.7	100
11/18/2008 11:19	R08110211-007	3.9	0.4	0.2	0.8	0.4	0.4	505	85.3	100
12/17/2008 12:46	R08120255-004	2.7	0.3	0.2	0.2	0.3	0.4	355	52.2	100
1/20/2009 14:25	R09010301-010	3.5	0.4	-5000	0.6	0.4	0.5	295	59.9	100
2/24/2009 11:35	R09020293-003	2.9	0.3	-5000	0.1	0.2	0.3	484	72.4	100
Chilson Near										
13 - Domestic Well, Screened Interval 3045 to 3090 ft AMSL										
10/3/2006 11:36	R06100076-005	<20		20	NM			335	63.2	100
9/27/2007 15:45	R07090385-005	1.8	0.5	0.2	<0.2		0.2	NM		
11/12/2007 12:15	R07110146-007	1.6	0.4	0.2	<0.2		0.2	305	64.5	100
2/20/2008 14:41	R08020220-004	1.1	0.2	0.1	1.6	0.8	0.9	258	42.6	100
5/19/2008 12:20	R08050251-002	1.6	0.3	-5000	0.01	0.3	0.4	412	70.5	100

POWERTECH (USA) INC.

Analyte		Thorium 230 - Dissolved			Thorium 230 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Chilson Upgradient							
16 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 12:00	R06100076-006	NM			NM		
9/27/2007 19:18	R07090385-002	0.3	0.2	0.2	<0.2		0.2
11/12/2007 16:05	R07110146-010	<0.2		0.2	<0.2		0.2
3/30/2008 15:19	R08030315-004	0.2	0.2	0.2	0.1	0.1	0.2
6/30/2008 13:45	R08070005-001	0	0.09	0.2	0	0.2	0.2
615 - Monitor Well, Screened Interval 2941 to 3029 ft AMSL							
4/1/2008 14:34	R08040028-001	0.2	0.1	0.2	0.9	0.3	0.2
4/21/2008 16:16	R08040250-004	0	0.1	0.2	0.1	0.1	0.2
5/28/2008 19:20	R08050406-005	0	0.1	0.2	0.1	0.1	0.2
6/25/2008 13:55	R08060452-002	0	0.05	0.2	0.1	0.2	0.2
7/14/2008 11:50	R08070244-002	0	0.1	0.2	0.1	0.1	0.2
8/20/2008 13:26	R08080332-004	0.1	0.1	0.2	0.2	0.2	0.2
9/22/2008 16:30	R08090314-005	<0.2	0.1	0.2	0.7	0.07	0.2
10/20/2008 16:20	R08100295-010	0.1	0.07	0.2	-0.2	0.05	0.2
11/18/2008 15:00	R08110211-013	0.1	0.09	0.2	-0.2	0.05	0.2
12/17/2008 11:27	R08120255-013	0.3	0.3	0.2	-0.1	0.2	0.2
1/20/2009 11:10	R09010301-004	0	0.04	0.2	0.1	0.2	0.2
2/24/2009 15:45	R09020293-009	-0.002	0.06	0.1	0.07	0.2	0.3
619 - Stock Well, Screened Interval Pending Confirmation							
9/27/2007 17:45	R07090385-001	0.5	0.3	0.2	<0.2		0.2
11/12/2007 14:25	R07110146-008	<0.2		0.2	0.2	0.09	0.2
3/24/2008 15:40	R08030253-002	0	0.1	0.2	0.2	0.2	0.2
6/17/2008 18:10	R08060335-001	0	0.1	0.2	0	0.1	0.2
622 - Monitor Well, Screened Interval 2974.91 to 3040.91 ft AMSL							
4/1/2008 14:56	R08040028-003	0.1	0.1	0.2	0.2	0.1	0.2
4/21/2008 15:28	R08040250-003	0	0.1	0.2	0.1	0.1	0.2
5/28/2008 18:26	R08050406-004	0	0.1	0.2	0.1	0.1	0.2
6/25/2008 12:05	R08060452-001	0	0.03	0.2	0	0.2	0.2
7/14/2008 12:35	R08070244-001	0	0.04	0.2	0	0.08	0.2
8/20/2008 12:59	R08080332-003	0	0.1	0.2	-0.1	0.2	0.2
9/22/2008 16:00	R08090314-004	<0.2	0.1	0.2	-0.1	0.05	0.2
10/20/2008 15:42	R08100295-006	0.1	0.1	0.2	0	0.05	0.2
11/18/2008 14:30	R08110211-014	0.1	0.1	0.2	0.1	0.05	0.2
12/17/2008 14:20	R08120255-008	0.1	0.2	0.2	-0.2	0.3	0.2
1/20/2009 10:51	R09010301-002	0	0.1	0.2	0.1	0.3	0.2
2/24/2009 15:31	R09020293-008	-0.01	0.08	0.2	-0.09	0.2	0.3
650 - Stock Well, Screened Interval Pending Confirmation							
9/28/2007 19:00	R07100002-010	<0.2		0.2	<0.2		0.2
11/12/2007 15:30	R07110146-009	<0.2		0.2	<0.2		0.2
3/24/2008 9:00	R08030253-001	0.4	0.2	0.2	0.8	0.3	0.2
5/30/2008 16:30	R08050427-004	0	0.1	0.2	0.2	0.2	0.2
705 - Monitor Well, Screened Interval 3368.42 to 3398.42 ft AMSL							
1/18/2010 0:00	R10010180-001	0.02	0.07	0.1	-0.1	0.09	-500
2/22/2010 0:00	R10020266-001	0.01	0.08	0.2	-0.07	0.05	-500
3/15/2010 0:00	R10030205-001	0.002	0.09	0.2	-0.08	0.04	-500
4/21/2010 0:00	R10040303-001	0.1	0.1	0.2	-0.1	0.1	-500
5/17/2010 0:00	R10050253-001	0.03	0.06	0.1	-0.4	0.2	-500
6/22/2010 0:00	R10060444-001	1.2	0.3	0.2	-0.4	0.3	-500
7/27/2010 0:00	R10070459-002	0.04	0.06	0.09	0.2	0.2	-500
8/23/2010 0:00	R10080398-001	0.09	0.1	0.2	-0.03	0.1	0.1
9/28/2010 0:00	R10090519-001	0.04	0.07	0.1	0.03	0.07	0.09
10/25/2010 0:00	R10100355-001	0.02	0.06	0.1	-0.3	0.2	0.3
11/15/2010 0:00	R10110179-002	-0.03	0.06	0.2	-0.2	0.1	0.2
12/14/2010 0:00	R10120179-001	0.05	0.07	0.1	-0.2	0.08	0.1
3026 - Monitor Well, Screened Interval 3624.48 to 3654.48 ft AMSL							
3/30/2008 18:45	R08030315-009	0	0.1	0.2	1	0.4	0.2
4/22/2008 14:30	R08040287-003	0.1	0.1	0.2	0.3	0.2	0.2
5/28/2008 15:15	R08050406-003	0.1	0.1	0.2	0.2	0.1	0.2
6/24/2008 20:06	R08060427-006	0	0.1	0.2	0	0.2	0.2
7/13/2008 15:28	R08070220-001	0.1	0.2	0.2	0	0.1	0.2
8/19/2008 16:25	R08080301-001	0	0.08	0.2	0	0.2	0.2
9/23/2008 11:25	R08090356-008	0	0.04	0.2	0.3	0.07	0.2
10/20/2008 13:15	R08100295-007	0.1	0.1	0.2	-0.1	0.05	0.2
11/18/2008 11:19	R08110211-007	0	0.1	0.2	-0.1	0.05	0.2
12/17/2008 12:46	R08120255-004	0.1	0.2	0.2	0.1	0.2	0.2
1/20/2009 14:25	R09010301-010	0	0.1	0.2	-0.1	0.3	0.2
2/24/2009 11:35	R09020293-003	-0.03	0.1	0.3	-0.07	0.2	0.4
Chilson Near							
13 - Domestic Well, Screened Interval 3045 to 3090 ft AMSL							
10/3/2006 11:36	R06100076-005	NM			NM		
9/27/2007 15:45	R07090385-005	0.4	0.3	0.2	<0.2		0.2
11/12/2007 12:15	R07110146-007	<0.2		0.2	<0.2		0.2
2/20/2008 14:41	R08020220-004	<0.2		0.2	0.4	0.3	0.2
5/19/2008 12:20	R08050251-002	0	0.1	0.2	0.2	0.3	0.2

POWERTECH (USA) INC.

Analyte		Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	RL	Result	RL	Result	RL
Hydro ID Date & Time Collected	ELI Lab ID	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Chilson Upgradient							
16 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 12:00	R06100076-006	0.002	0.001	NM	NM	NM	NM
9/27/2007 19:18	R07090385-002	0.0021	0.0003	<0.0003	0.0003	NM	NM
11/12/2007 16:05	R07110146-010	0.0007	0.0003	<0.0003	0.0003	NM	NM
3/30/2008 15:19	R08030315-004	0.0007	0.0003	<0.0003	0.0003	0.0007	0.0003
6/30/2008 13:45	R08070005-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
615 - Monitor Well, Screened Interval 2941 to 3029 ft AMSL							
4/1/2008 14:34	R08040028-001	0.0026	0.0003	<0.0003	0.0003	0.0026	0.0003
4/21/2008 16:16	R08040250-004	0.0025	0.0003	<0.0003	0.0003	0.0025	0.0003
5/28/2008 19:20	R08050406-005	0.0024	0.0003	<0.0003	0.0003	0.0025	0.0003
6/25/2008 13:55	R08060452-002	0.0024	0.0003	<0.0003	0.0003	0.0023	0.0003
7/14/2008 11:50	R08070244-002	0.0025	0.0003	<0.0003	0.0003	0.0025	0.0003
8/20/2008 13:26	R08080332-004	0.0023	0.0003	<0.0003	0.0003	0.0023	0.0003
9/22/2008 16:30	R08090314-005	0.0026	0.0003	<0.0003	0.0003	0.0023	0.0003
10/20/2008 16:20	R08100295-010	0.0023	0.0003	0.0032	0.0003	0.0026	0.0003
11/18/2008 15:00	R08110211-013	0.0026	0.0003	<0.0003	0.0003	0.0022	0.0003
12/17/2008 11:27	R08120255-013	0.0023	0.0003	<0.0009	0.0009	0.0023	0.0003
1/20/2009 11:10	R09010301-004	0.0027	0.0003	<0.0003	0.0003	0.0026	0.0003
2/24/2009 15:45	R09020293-009	0.0025	0.0003	<0.0003	0.0003	0.0024	0.0003
619 - Stock Well, Screened Interval Pending Confirmation							
9/27/2007 17:45	R07090385-001	0.002	0.0003	<0.0003	0.0003	NM	NM
11/12/2007 14:25	R07110146-008	0.0015	0.0003	<0.0003	0.0003	NM	NM
3/24/2008 15:40	R08030253-002	0.0015	0.0003	<0.0003	0.0003	0.0018	0.0003
6/17/2008 18:10	R08060335-001	0.0016	0.0003	<0.0003	0.0003	0.0018	0.0003
622 - Monitor Well, Screened Interval 2974.91 to 3040.91 ft AMSL							
4/1/2008 14:56	R08040028-003	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
4/21/2008 15:28	R08040250-003	0.0054	0.0003	0.0008	0.0003	0.0065	0.0003
5/28/2008 18:26	R08050406-004	0.0056	0.0003	0.0005	0.0003	0.0068	0.0003
6/25/2008 12:05	R08060452-001	0.0051	0.0003	<0.0003	0.0003	0.0059	0.0003
7/14/2008 12:35	R08070244-001	0.0052	0.0003	<0.0003	0.0003	0.0054	0.0003
8/20/2008 12:59	R08080332-003	0.005	0.0003	<0.0003	0.0003	0.005	0.0003
9/22/2008 16:00	R08090314-004	0.0055	0.0003	<0.0003	0.0003	0.005	0.0005
10/20/2008 15:42	R08100295-006	0.0052	0.0003	0.0004	0.0003	0.0059	0.0003
11/18/2008 14:30	R08110211-014	0.0055	0.0003	<0.0003	0.0003	0.0051	0.0003
12/17/2008 14:20	R08120255-008	<0.0003	0.0003	<0.0009	0.0009	<0.0003	0.0003
1/20/2009 10:51	R09010301-002	0.0029	0.0003	0.0003	0.0003	0.0056	0.0003
2/24/2009 15:31	R09020293-008	0.0053	0.0003	<0.0003	0.0003	0.0051	0.0003
650 - Stock Well, Screened Interval Pending Confirmation							
9/28/2007 19:00	R07100002-010	0.0019	0.0003	0.0014	0.0003	NM	NM
11/12/2007 15:30	R07110146-009	<0.0003	0.0003	<0.0003	0.0003	NM	NM
3/24/2008 9:00	R08030253-001	<0.0003	0.0003	0.0033	0.0003	0.0004	0.0003
5/30/2008 16:30	R08050427-004	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
705 - Monitor Well, Screened Interval 3368.42 to 3398.42 ft AMSL							
1/18/2010 0:00	R10010180-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
2/22/2010 0:00	R10020266-001	<0.0003	0.0003	0.0015	0.0003	<0.0003	0.0003
3/15/2010 0:00	R10030205-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
4/21/2010 0:00	R10040303-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/17/2010 0:00	R10050253-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
6/22/2010 0:00	R10060444-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
7/27/2010 0:00	R10070459-002	0.0007	0.0003	<0.0003	0.0003	<0.0003	0.0003
8/23/2010 0:00	R10080398-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
9/28/2010 0:00	R10090519-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
10/25/2010 0:00	R10100355-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
11/15/2010 0:00	R10110179-002	<0.0003	0.0003	<0.0003	0.0003	0.0003	0.0003
12/14/2010 0:00	R10120179-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
3026 - Monitor Well, Screened Interval 3624.48 to 3654.48 ft AMSL							
3/30/2008 18:45	R08030315-009	0.0151	0.0003	0.004	0.0003	0.0097	0.0003
4/22/2008 14:30	R08040287-003	0.015	0.0003	0.001	0.0003	0.0196	0.0003
5/28/2008 15:15	R08050406-003	0.0281	0.0003	0.0013	0.0003	0.0322	0.0003
6/24/2008 20:06	R08060427-006	0.0183	0.0003	0.0015	0.0003	0.0216	0.0003
7/13/2008 15:28	R08070220-001	0.0128	0.0003	<0.0003	0.0003	0.0151	0.0003
8/19/2008 16:25	R08080301-001	0.0106	0.0003	<0.0003	0.0003	0.0105	0.0003
9/23/2008 11:25	R08090356-008	0.0027	0.0003	<0.0003	0.0003	0.0029	0.0003
10/20/2008 13:15	R08100295-007	0.0045	0.0003	<0.0003	0.0003	0.0055	0.0003
11/18/2008 11:19	R08110211-007	0.0048	0.0003	<0.0003	0.0003	0.0044	0.0003
12/17/2008 12:46	R08120255-004	0.0045	0.0003	<0.0009	0.0009	0.0047	0.0003
1/20/2009 14:25	R09010301-010	0.0039	0.0003	0.0003	0.0003	0.0047	0.0003
2/24/2009 11:35	R09020293-003	0.0022	0.0003	<0.0003	0.0003	0.0025	0.0003
Chilson Near							
13 - Domestic Well, Screened Interval 3045 to 3090 ft AMSL							
10/3/2006 11:36	R06100076-005	<0.001	0.001	NM	NM	NM	NM
9/27/2007 15:45	R07090385-005	<0.0003	0.0003	<0.0003	0.0003	NM	NM
11/12/2007 12:15	R07110146-007	<0.0003	0.0003	<0.0003	0.0003	NM	NM
2/20/2008 14:41	R08020220-004	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/19/2008 12:20	R08050251-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003

POWERTECH (USA) INC.

Analyte				Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)				15 pCi/L			none		
Measurement		Water Level	Sampling Method and	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	ft AMSL	Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
680 - Monitor Well, Screened Interval 3265.94 to 3275.94 ft AMSL									
1/30/2008 13:50	R08010296-001	3662.94	dedicated pump, ice	4090	19.7	1	17	2.5	1
3/31/2008 15:15	R08040002-002	3662.59	dedicated pump, ice	6440	79.7	8.6	0	2.1	1
4/21/2008 21:21	R08040250-007	3661.14	dedicated pump, ice	4270	62.3	7.4	32	8.7	1
5/13/2008 16:06	R08050199-001	NM	dedicated pump, ice	6500	83.7	10.6	37.7	10.2	16
5/21/2008 12:50	R08050321-002	NM	dedicated pump, ice	4500	64.8	6.9	61.8	22.9	35.7
6/10/2008 10:50	R08060210-001	3660.82	dedicated pump, ice	4370	60.4	7.8	15.7	3.8	5.9
7/7/2008 13:29	R08070115-002	NM	dedicated pump, ice	4280	68.1	8.8	26.5	5.1	7.9
8/20/2008 10:23	R08080332-002	3661.92	dedicated pump, ice	4330	67.6	8.5	15.2	6.6	10.7
9/22/2008 11:18	R08090314-001	3661.02	dedicated pump, ice	5470	73.7	7.4	14.3	5.6	9
10/20/2008 12:05	R08100295-002	3660.84	dedicated pump, ice	4200	63	7	18.2	3.9	6.1
11/18/2008 10:25	R08110211-005	3662.03	dedicated pump, ice	4410	69.5	10.2	9.3	2.7	4.4
12/17/2008 13:50	R08120255-007	3661.24	dedicated pump, ice	5140	71.3	7.4	6.4	2.5	4
1/20/2009 15:25	R09010301-011	3661.09	dedicated pump, ice	6730	79	8.1	5.4	2.6	4.2
2/24/2009 13:35	R09020293-007	3661.24	dedicated pump, ice	5140	73.7	10.4	10.6	1.7	2.7
689 - Monitor Well, Screened Interval 2899.69 to 2914.69 ft AMSL									
3/30/2008 17:25	R08030315-007	NM	flowing artesian, ice	64.3	5.1	3	-31	4.4	1
4/21/2008 19:50	R08040250-005	NM	flowing artesian, ice	25.5	3.2	2.6	-2.4	8.1	1
5/28/2008 22:25	R08050406-006	NM	flowing artesian, ice	34.9	3.6	2.2	6.3	5	8.2
6/25/2008 18:18	R08060452-004	3685.48	flowing artesian, ice	36.5	3.7	2.8	-6.5	6.7	11.4
7/1/2008 16:17	R08070035-006	3685.31	flowing artesian, ice	33.4	3.9	3.2	1.1	4.7	7.9
7/14/2008 16:50	R08070244-008	3681.48	flowing artesian, ice	36	3.9	3	-0.4	5.5	9.2
8/19/2008 19:18	R08080301-005	3681.68	flowing artesian, ice	36.4	4	3	2.1	6.4	10.7
9/23/2008 13:43	R08090356-001	3681.52	flowing artesian, ice	30.9	4.2	3.8	3.8	5.4	9
10/20/2008 14:46	R08100295-008	3680.55	flowing artesian, ice	40	3.9	2.5	-0.3	3.7	6.1
11/18/2008 14:02	R08110211-011	3681.01	flowing artesian, ice	37.9	4.1	3.2	-1	2.6	4.4
12/17/2008 11:02	R08120255-003	3680.32	flowing artesian, ice	54.6	4.8	2.8	1.7	2.4	4
1/20/2009 13:05	R09010301-008	3682.86	flowing artesian, ice	52.8	4.4	2.8	-0.4	2.5	4.2
2/24/2009 16:04	R09020293-010	3682.63	flowing artesian, ice	23.9	3.7	3.7	0.5	1.6	2.7
Chilson Downgradient									
2 - Domestic Well, Screened Interval 2905 to 2989 ft AMSL									
9/26/2007 12:46	R07090384-002	NM	flowing artesian, ice	1.4	1	1	<1		1
11/12/2007 9:25	R07110146-003	NM	flowing artesian, ice	8.7	1.1	1	<1		1
2/12/2008 10:21	R08020130-001	NM	flowing artesian, ice	6.7	1.2	1	<1		1
5/30/2008 15:21	R08050427-003	NM	flowing artesian, ice	8.2	3.3	4.4	3.1	4.9	8.2
42 - Domestic Well, Screened Interval Pending Confirmation									
10/3/2006 10:18	R06100076-002	NM	flowing artesian, ice	560	3.2	1	NM		
9/28/2007 11:34	R07100002-003	NM	flowing artesian, ice	371	5.4	1	<1		1
11/12/2007 11:20	R07110146-006	NM	flowing artesian, ice	375	4.5	1	21	2.3	1
2/5/2008 14:10	R08020052-004	NM	flowing artesian, ice	526	5.9	1	15	1.7	1
5/30/2008 11:55	R08050427-002	NM	flowing artesian, ice	558	15.4	3.9	17.8	5.2	8.2
696 - Monitor Well, Screened Interval 3012.91 to 3027.91 ft AMSL									
3/31/2008 13:41	R08040002-001	NM	flowing artesian, ice	3.9	2.6	3.9	-11.2	1.9	1
4/22/2008 16:58	R08040287-007	NM	flowing artesian, ice	5.2	2.7	3.8	-4.9	11.8	1
5/21/2008 11:55	R08050321-001	NM	flowing artesian, ice	14.3	3	3.1	-2.7	17.7	29.8
6/24/2008 15:08	R08060427-002	NM	flowing artesian, ice	23.9	4	4	-5.3	6.7	11.4
7/14/2008 15:10	R08070244-004	NM	flowing artesian, ice	4	2.6	3.8	-3	5.5	9.2
8/20/2008 15:10	R08080332-006	NM	flowing artesian, ice	7.1	2.9	3.9	3.4	6.4	10.7
9/23/2008 9:35	R08090356-006	3637.86	flowing artesian, ice	5.9	3.4	5	-1	5.3	9
10/21/2008 8:45	R08100295-014	3637.17	flowing artesian, ice	9.8	2.8	3.3	-1	3.6	6.1
11/18/2008 8:45	R08110211-002	3637.63	flowing artesian, ice	6.9	3.2	4.4	0	2.6	4.4
12/17/2008 16:05	R08120255-012	3625.87	flowing artesian, ice	8.2	2.8	3.4	3.2	2.4	4
1/20/2009 16:55	R09010301-013	3647.09	flowing artesian, ice	20.2	3.6	3.6	0.4	2.5	4.2
2/24/2009 17:31	R09020293-015	3637.19	flowing artesian, ice	4.3	3.2	4.8	-0.3	1.6	2.7
697 - Monitor Well, Screened Interval 2918.3 to 2933.3 ft AMSL									
3/30/2008 16:36	R08030315-006	3676.59	flowing artesian, ice	6.1	2.6	3.5	-23	3.8	1
4/22/2008 16:02	R08040287-005	3677.29	flowing artesian, ice	8.4	2.7	3.3	-0.7	11.9	1
5/21/2008 16:44	R08050321-005	3677.05	flowing artesian, ice	4.1	2	2.7	-4.3	16.7	28.2
6/24/2008 18:20	R08060427-005	3678.25	flowing artesian, ice	11.9	2.8	3.2	0.5	6.8	11.4
7/14/2008 15:52	R08070244-006	3678.11	flowing artesian, ice	6.9	2.4	3.1	-2	5.5	9.2
8/20/2008 17:10	R08080332-008	3678.03	flowing artesian, ice	5.3	2.6	3.5	-2	6.3	10.7
9/23/2008 11:45	R08090356-004	3677.27	flowing artesian, ice	6.3	3.1	4.4	-2	5.3	9
10/21/2008 9:45	R08100295-011	3677.04	flowing artesian, ice	7.3	2.4	2.9	-2	3.6	6.1
11/18/2008 13:35	R08110211-010	3677.04	flowing artesian, ice	12.7	3.2	3.9	-0.8	2.6	4.4
12/17/2008 14:45	R08120255-009	3676.11	flowing artesian, ice	7.7	2.5	2.9	1.6	2.4	4
1/20/2009 12:35	R09010301-006	3704.72	flowing artesian, ice	21.7	3.4	3.3	0.6	2.5	4.2
2/24/2009 16:45	R09020293-012	3677.27	flowing artesian, ice	18.2	3.8	4.3	1	1.6	2.7
7002 - Monitor Well, Screened Interval Pending Confirmation									
9/28/2007 17:48	R07100002-008	NM	flowing artesian, ice	45.6	2.3	1	<1		1
11/12/2007 8:10	R07110146-001	NM	flowing artesian, ice	39.8	2.1	1	<1		1
2/20/2008 8:30	R08020220-001	NM	flowing artesian, ice	91.4	9.6	7	13	2.4	1
5/29/2008 10:44	R08050419-001	NM	flowing artesian, ice	29.5	6.5	7.4	-0.6	3.5	5.9

POWERTECH (USA) INC.

Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
680 - Monitor Well, Screened Interval 3265.94 to 3275.94 ft AMSL										
1/30/2008 13:50	R08010296-001	<1		1	1.7	1	1	<1		1
3/31/2008 15:15	R08040002-002	-2		1	1.5	1.1	1	0.5	0.5	1
4/21/2008 21:21	R08040250-007	-1	0.7	1	0.5	0.8	1	0.3	0.4	1
5/13/2008 16:06	R08050199-001	20.3	36.4	60.5	2	1.5	1	9.1	4.9	1
5/21/2008 12:50	R08050321-002	6.8	5.3	8.8	1.5	1.5	1	1.1	0.86	1
6/10/2008 10:50	R08060210-001	12	6.5	10.6	0.4	0.7	1	1.3	0.57	1
7/7/2008 13:29	R08070115-002	1.2	12.8	21.4	0.2	0.97	1	1.7	1.1	1
8/20/2008 10:23	R08080332-002	-4	10.5	17.8	0.6	1	1	1	0.62	1
9/22/2008 11:18	R08090314-001	4.5	4.7	7.8	0.2	0.89	1	0.54	0.56	
10/20/2008 12:05	R08100295-002	4.1	4.1	6.8	0.3	0.31	1	1.4	0.8	1
11/18/2008 10:25	R08110211-005	-0.5	5.4	9	1	0.63	1	0.88	0.66	
12/17/2008 13:50	R08120255-007	5.9	6.3	10.4	0.7	0.49	1	2.8	1.2	1
1/20/2009 15:25	R09010301-011	6.2	4.8	8	0.53	0.48	0.51	2	0.94	0.53
2/24/2009 13:35	R09020293-007	4.1	3.4	5.7	0.069	0.23	0.45	0.64	0.53	0.49
689 - Monitor Well, Screened Interval 2899.69 to 2914.69 ft AMSL										
3/30/2008 17:25	R08030315-007	0	0.5	1	1.1	1.1	1	0.6	0.45	1
4/21/2008 19:50	R08040250-005	-0.3	0.5	1	0.7	0.8	1	0.6	0.71	1
5/28/2008 22:25	R08050406-006	-2	10.5	17.7	-0.4	0.1	1	0.2	0.43	1
6/25/2008 18:18	R08060452-004	1	4.4	7.4	0	0.4	1	0.1	0.24	1
7/1/2008 16:17	R08070035-006	-3.9	5.8	9.9	0.3	0.7	1	-0.1	0.45	1
7/14/2008 16:50	R08070244-008	-0.1	12.8	21.4	0.1	1.2	1	0	0.28	1
8/19/2008 19:18	R08080301-005	-9	10.4	17.8	0.6	0.7	1	0.1	0.19	1
9/23/2008 13:43	R08090356-001	0.2	4.7	7.8	0	1.2	1	0.16	0.35	
10/20/2008 14:46	R08100295-008	-0.2	4.1	6.8	0.1	0.26	1	0.1	0.31	1
11/18/2008 14:02	R08110211-011	-0.6	5.4	9	0.2	0.31	1	-0.039	0.2	
12/17/2008 11:02	R08120255-003	1.4	6.2	10.4	0	0.2	1	0.3	0.49	1
1/20/2009 13:05	R09010301-008	-6	4.7	8	-0.031	0.22	0.62	0.025	0.3	0.68
2/24/2009 16:04	R09020293-010	-2	3.4	5.7	0.44	0.65	1	0.35	0.43	0.56
Chilson Downgradient										
2 - Domestic Well, Screened Interval 2905 to 2989 ft AMSL										
9/26/2007 12:46	R07090384-002	<1		1	<1		1	<1		1
11/12/2007 9:25	R07110146-003	<1		1	2	1.6	1	<1		1
2/12/2008 10:21	R08020130-001	<1		1	2.1	2	1	<1		1
5/30/2008 15:21	R08050427-003	1.4	5.2	8.7	0.1	0.9	1	0	0.31	1
42 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 10:18	R06100076-002	NM			NM			NM		
9/28/2007 11:34	R07100002-003	57	7.7	1	<1		1	13	6.5	1
11/12/2007 11:20	R07110146-006	<1		1	<1		1	1.1	0.34	1
2/5/2008 14:10	R08020052-004	17	2	1	5.5	2.1	1	2	0.98	1
5/30/2008 11:55	R08050427-002	14	5.4	8.7	1.6	1.4	1	0.3	0.5	1
696 - Monitor Well, Screened Interval 3012.91 to 3027.91 ft AMSL										
3/31/2008 13:41	R08040002-001	0		1	0.6	0.7	1	0.5	0.4	1
4/22/2008 16:58	R08040287-007	0	1.5	1	0.9	1.1	1	0.6	0.55	1
5/21/2008 11:55	R08050321-001	2.1	5.3	8.8	-0.2	0.4	1	0	0.24	1
6/24/2008 15:08	R08060427-002	5.6	4.5	7.4	0.2	0.6	1	0.5	0.5	1
7/14/2008 15:10	R08070244-004	1.1	12.8	21.4	-0.1	0.43	1	0	0.17	1
8/20/2008 15:10	R08080332-006	0.2	10.6	17.8	-0.3	0.1	1	0.1	0.36	1
9/23/2008 9:35	R08090356-006	-0.9	5.5	9.2	0	0.89	1	-0.062	0.25	
10/21/2008 8:45	R08100295-014	-0.7	4	6.8	0.1	0.24	1	0	0.24	1
11/18/2008 8:45	R08110211-002	-6	5.3	9	0.2	0.33	1	-0.11	0.33	
12/17/2008 16:05	R08120255-012	0.5	6.2	10.4	0	0.14	1	0	0.21	1
1/20/2009 16:55	R09010301-013	-4	4.7	8	0	0.23	0.61	-0.035	0.18	0.5
2/24/2009 17:31	R09020293-015	0.8	3.4	5.7	-0.094	0.25	0.72	0.045	0.36	0.8
697 - Monitor Well, Screened Interval 2918.3 to 2933.3 ft AMSL										
3/30/2008 16:36	R08030315-006	-2.8	0.8	1	1.1	1.2	1	0.9	0.57	1
4/22/2008 16:02	R08040287-005	0	1.2	1	0	0.4	1	0	0.24	1
5/21/2008 16:44	R08050321-005	0	5.2	8.8	0	0.4	1	1.2	0.81	1
6/24/2008 18:20	R08060427-005	2.9	4.4	7.4	-0.1	0.5	1	0	0.26	1
7/14/2008 15:52	R08070244-006	3.6	12.8	21.4	-0.4	0.69	1	0.4	0.43	1
8/20/2008 17:10	R08080332-008	-10	10.4	17.8	0.4	0.7	1	-0.2	0.26	1
9/23/2008 11:45	R08090356-004	-1	4.6	7.8	-0.5	0.74	1	0.027	0.27	
10/21/2008 9:45	R08100295-011	-2	4	6.8	0.1	0.35	1	0.1	0.27	1
11/18/2008 13:35	R08110211-010	-0.6	5.4	9	0	0.24	1	-0.004	0.2	
12/17/2008 14:45	R08120255-009	2.8	6.3	10.4	0.2	0.26	1	0.2	0.38	1
1/20/2009 12:35	R09010301-006	2.9	5.1	8.5	-0.027	0.2	0.54	-0.01	0.18	0.45
2/24/2009 16:45	R09020293-012	-2	3.4	5.7	0.034	0.28	0.62	-0.019	0.21	0.55
7002 - Monitor Well, Screened Interval Pending Confirmation										
9/28/2007 17:48	R07100002-008	<1		1	1.3	1.2	1	<1		1
11/12/2007 8:10	R07110146-001	<1		1	4.1	2.6	1	<1		1
2/20/2008 8:30	R08020220-001	7.9	1.4	1	<1		1	<1		1
5/29/2008 10:44	R08050419-001	-1.1	10.5	17.7	0.1	0.4	1	0.2	0.43	1

POWERTECH (USA) INC.

Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Radon		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
680 - Monitor Well, Screened Interval 3265.94 to 3275.94 ft AMSL										
1/30/2008 13:50	R08010296-001	1180	10.6	0.2	12.7	2.7	0.2	143000	670	100
3/31/2008 15:15	R08040002-002	1150	4.9	0.1	1.9	0.3	0.1	71800	351	100
4/21/2008 21:21	R08040250-007	1230	5.8	0.1	1.6	0.5	0.5	81000	371	100
5/13/2008 16:06	R08050199-001	1430	6.6	-5000	13.2	2.3	1.7	151000	699	100
5/21/2008 12:50	R08050321-002	1240	6.1	-5000	1	0.4	0.4	359000	1160	100
6/10/2008 10:50	R08060210-001	1410	10.9	-5000	4.4	0.6	0.3	91700	525	100
7/7/2008 13:29	R08070115-002	1280	6.7	-5000	5	0.9	0.6	72000	325	100
8/20/2008 10:23	R08080332-002	1270	45.6	-5000	2.1	0.5	0.5	112000	530	100
9/22/2008 11:18	R08090314-001	1440	8.2	-5000	5.1	0.7	0.4	72700	305	100
10/20/2008 12:05	R08100295-002	1190	6.2	-5000	6.9	0.9	0.5	74300	385	100
11/18/2008 10:25	R08110211-005	1430	6.7	0.2	1.7	0.4	0.4	86200	453	100
12/17/2008 13:50	R08120255-007	1110	5.5	0.2	13.1	1.1	0.5	62200	293	100
1/20/2009 15:25	R09010301-011	1360	7.5	-5000	13.3	1.1	0.5	48000	283	100
2/24/2009 13:35	R09020293-007	1330	6.1	-5000	6.4	0.7	0.3	56800	334	100
689 - Monitor Well, Screened Interval 2899.69 to 2914.69 ft AMSL										
3/30/2008 17:25	R08030315-007	7.9	0.5	0.2	2	0.5	0.3	1950	94.4	100
4/21/2008 19:50	R08040250-005	4.2	0.4	0.1	0.02	0.3	0.4	1540	72.3	100
5/28/2008 22:25	R08050406-006	5.7	0.5	-5000	0.5	0.4	0.5	1390	48.3	100
6/25/2008 18:18	R08060452-004	5.5	0.6	-5000	-0.05	0.3	0.5	2520	109	100
7/1/2008 16:17	R08070035-006	7.7	0.6	-5000	0.9	0.3	0.2	1820	66.7	100
7/14/2008 16:50	R08070244-008	6.1	0.6	-5000	-0.4	0.2	0.6	1670	65.8	100
8/19/2008 19:18	R08080301-005	4.4	0.5	-5000	-0.4	0.2	0.6	2520	127	100
9/23/2008 13:43	R08090356-001	7.5	0.6	-5000	0.2	0.2	0.3	1520	74.9	100
10/20/2008 14:46	R08100295-008	6.4	0.5	-5000	-0.4	0.2	0.5	2410	94	100
11/18/2008 14:02	R08110211-011	6.6	0.5	0.2	-0.04	0.2	0.4	2580	108	100
12/17/2008 11:02	R08120255-003	6.2	0.5	0.2	0.4	0.3	0.5	1130	62.1	100
1/20/2009 13:05	R09010301-008	6.1	0.5	-5000	-0.4	0.2	0.5	1850	78.7	100
2/24/2009 16:04	R09020293-010	5.4	0.4	-5000	-0.2	0.1	0.3	1810	86	100
Chilson Downgradient										
2 - Domestic Well, Screened Interval 2905 to 2989 ft AMSL										
9/26/2007 12:46	R07090384-002	<0.2		0.2	2.2	0.6	0.2	NM		
11/12/2007 9:25	R07110146-003	1.3	0.4	0.2	<0.2		0.2	674	70.4	100
2/12/2008 10:21	R08020130-001	1.1	0.2	0.2	<0.2		0.2	792	122	100
5/30/2008 15:21	R08050427-003	2.1	0.3	-5000	0.2	0.3	0.4	727	83.8	100
42 - Domestic Well, Screened Interval Pending Confirmation										
10/3/2006 10:18	R06100076-002	87.6	3.1	0.2	NM			197000	581	100
9/28/2007 11:34	R07100002-003	96.5	3.2	0.2	<0.2		0.2	NM		
11/12/2007 11:20	R07110146-006	102	3.6	0.2	<0.2		0.2	132000	474	100
2/5/2008 14:10	R08020052-004	100	3.6	0.2	5.1	1.6	0.2	175000	705	100
5/30/2008 11:55	R08050427-002	100	2	-5000	-0.3	0.2	0.4	219000	691	100
696 - Monitor Well, Screened Interval 3012.91 to 3027.91 ft AMSL										
3/31/2008 13:41	R08040002-001	1	0.2	0.1	0.6	0.2	0.2	190	63.4	100
4/22/2008 16:58	R08040287-007	0.5	0.1	0.1	-0.2	0.2	0.4	185	48.3	100
5/21/2008 11:55	R08050321-001	1.8	0.3	-5000	-0.1	0.2	0.5	497	138	100
6/24/2008 15:08	R08060427-002	3.3	0.4	-5000	-0.4	0.2	0.5	517	136	100
7/14/2008 15:10	R08070244-004	0.4	0.2	-5000	-0.4	0.2	0.6	228	49.3	100
8/20/2008 15:10	R08080332-006	1.3	0.3	-5000	-0.1	0.3	0.5	343	86.3	100
9/23/2008 9:35	R08090356-006	1.5	0.3	-5000	-0.2	0.2	0.4	214	61	100
10/21/2008 8:45	R08100295-014	0.8	0.2	-5000	-0.3	0.3	0.5	260	60.4	100
11/18/2008 8:45	R08110211-002	0.8	0.2	0.2	-0.3	0.2	0.4	222	82.9	100
12/17/2008 16:05	R08120255-012	0.8	0.2	0.2	-0.1	0.2	0.5	182	48.8	100
1/20/2009 16:55	R09010301-013	1	0.2	-5000	-0.4	0.2	0.5	250	58.2	100
2/24/2009 17:31	R09020293-015	1.3	0.2	-5000	-0.2	0.1	0.3	234	66.2	100
697 - Monitor Well, Screened Interval 2918.3 to 2933.3 ft AMSL										
3/30/2008 16:36	R08030315-006	1.5	0.3	0.2	0.6	0.3	0.3	323	76	100
4/22/2008 16:02	R08040287-005	1.7	0.2	0.1	-0.1	0.2	0.3	284	49.9	100
5/21/2008 16:44	R08050321-005	1.1	0.2	-5000	3.8	0.7	0.5	570	134	100
6/24/2008 18:20	R08060427-005	0.8	0.2	-5000	-0.4	0.2	0.4	413	132	100
7/14/2008 15:52	R08070244-006	0.9	0.2	-5000	-0.1	0.3	0.6	295	50	100
8/20/2008 17:10	R08080332-008	1.2	0.3	-5000	-0.4	0.2	0.5	367	85.4	100
9/23/2008 11:45	R08090356-004	1	0.2	-5000	0.2	0.3	0.4	313	61.3	100
10/21/2008 9:45	R08100295-011	0.6	0.2	-5000	0.05	0.3	0.5	319	60.7	100
11/18/2008 13:35	R08110211-010	1.7	0.3	0.2	-0.4	0.2	0.4	412	82.7	100
12/17/2008 14:45	R08120255-009	1.2	0.2	0.2	-0.07	0.3	0.5	200	49.5	100
1/20/2009 12:35	R09010301-006	0.9	0.2	-5000	-0.2	0.2	0.4	299	60.7	100
2/24/2009 16:45	R09020293-012	5.6	0.4	-5000	-0.2	0.1	0.3	236	66.5	100
7002 - Monitor Well, Screened Interval Pending Confirmation										
9/28/2007 17:48	R07100002-008	8.5	0.9	0.2	<0.2		0.2	NM		
11/12/2007 8:10	R07110146-001	8.1	0.9	0.2	<0.2		0.2	938	74.1	100
2/20/2008 8:30	R08020220-001	8.8	0.6	0.1	<0.9		0.9	752	50.6	100
5/29/2008 10:44	R08050419-001	8	0.5	-5000	0	0.3	0.6	1270	109	100

POWERTECH (USA) INC.

Analyte		Thorium 230 - Dissolved			Thorium 230 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
680 - Monitor Well, Screened Interval 3265.94 to 3275.94 ft AMSL							
1/30/2008 13:50	R08010296-001	<0.2		0.2	0.3	0.2	0.2
3/31/2008 15:15	R08040002-002	0.2	0.2	0.2	0.2	0.2	0.2
4/21/2008 21:21	R08040250-007	0.3	0.2	0.2	0.3	0.2	0.2
5/13/2008 16:06	R08050199-001	0.1	0.1	0.2	0.4	0.9	0.2
5/21/2008 12:50	R08050321-002	0.1	0.1	0.2	0	0.2	0.2
6/10/2008 10:50	R08060210-001	0	0.04	0.2	0.1	0.1	0.2
7/7/2008 13:29	R08070115-002	0	0.1	0.2	0.1	0.2	0.2
8/20/2008 10:23	R08080332-002	0.2	0.2	0.2	0.2	0.2	0.2
9/22/2008 11:18	R08090314-001	<0.2	0.2	0.2	0	0.05	0.2
10/20/2008 12:05	R08100295-002	0	0.1	0.2	-0.1	0.05	0.2
11/18/2008 10:25	R08110211-005	0.1	0.1	0.2	0.1	0.05	0.2
12/17/2008 13:50	R08120255-007	0	0.1	0.2	-0.3	0.2	0.2
1/20/2009 15:25	R09010301-011	0	0.1	0.2	-0.2	0.2	0.2
2/24/2009 13:35	R09020293-007	-0.009	0.1	0.2	0.03	0.2	0.3
689 - Monitor Well, Screened Interval 2899.69 to 2914.69 ft AMSL							
3/30/2008 17:25	R08030315-007	0.2	0.1	0.2	0.2	0.3	0.2
4/21/2008 19:50	R08040250-005	0.1	0.1	0.2	0.3	0.2	0.2
5/28/2008 22:25	R08050406-006	0	0.1	0.2	0.4	0.3	0.2
6/25/2008 18:18	R08060452-004	0	0.1	0.2	0.4	0.2	0.2
7/1/2008 16:17	R08070035-006	-0.1	0.1	0.2	0.1	0.2	0.2
7/14/2008 16:50	R08070244-008	0	0.05	0.2	0.2	0.2	0.2
8/19/2008 19:18	R08080301-005	0.1	0.09	0.2	0.2	0.2	0.2
9/23/2008 13:43	R08090356-001	0	0.09	0.2	0.2	0.05	0.2
10/20/2008 14:46	R08100295-008	0.1	0.1	0.2	-0.2	0.02	0.2
11/18/2008 14:02	R08110211-011	0.2	0.2	0.2	-0.2	0.05	0.2
12/17/2008 11:02	R08120255-003	0	0.1	0.2	0.1	0.2	0.2
1/20/2009 13:05	R09010301-008	0	0.09	0.2	-0.2	0.2	0.2
2/24/2009 16:04	R09020293-010	-0.001	0.07	0.2	0.2	0.3	0.3
Chilson Downgradient							
2 - Domestic Well, Screened Interval 2905 to 2989 ft AMSL							
9/26/2007 12:46	R07090384-002	<0.2		0.2	<0.2		0.2
11/12/2007 9:25	R07110146-003	<0.2		0.2	<0.2		0.2
2/12/2008 10:21	R08020130-001	<0.2		0.2	<0.2		0.2
5/30/2008 15:21	R08050427-003	0	0.1	0.2	0.1	0.2	0.2
42 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 10:18	R06100076-002	NM			NM		
9/28/2007 11:34	R07100002-003	<0.2		0.2	<0.2		0.2
11/12/2007 11:20	R07110146-006	0.5	0.3	0.2	0.2	0.09	0.2
2/5/2008 14:10	R08020052-004	<0.2		0.2	<0.2		0.2
5/30/2008 11:55	R08050427-002	0.1	0.1	0.2	0	0.2	0.2
696 - Monitor Well, Screened Interval 3012.91 to 3027.91 ft AMSL							
3/31/2008 13:41	R08040002-001	0	0.1	0.2	0.2	0.2	0.2
4/22/2008 16:58	R08040287-007	0	0.1	0.2	0.2	0.2	0.2
5/21/2008 11:55	R08050321-001	0	0.1	0.2	0.1	0.2	0.2
6/24/2008 15:08	R08060427-002	0	0.1	0.2	0	0.06	0.2
7/14/2008 15:10	R08070244-004	0	0.1	0.2	0	0.2	0.2
8/20/2008 15:10	R08080332-006	0	0.06	0.2	0	0.08	0.2
9/23/2008 9:35	R08090356-006	0	0.08	0.2	-0.1	0.05	0.2
10/21/2008 8:45	R08100295-014	0	0.1	0.2	-0.3	0.05	0.2
11/18/2008 8:45	R08110211-002	0.2	0.2	0.2	0	0.05	0.2
12/17/2008 16:05	R08120255-012	0.1	0.2	0.2	-0.2	0.2	0.2
1/20/2009 16:55	R09010301-013	0.1	0.1	0.2	-0.1	0.2	0.2
2/24/2009 17:31	R09020293-015	0.2	0.1	0.1	-0.04	0.2	0.3
697 - Monitor Well, Screened Interval 2918.3 to 2933.3 ft AMSL							
3/30/2008 16:36	R08030315-006	0.4	0.2	0.2	0.1	0.1	0.2
4/22/2008 16:02	R08040287-005	0	0.1	0.2	0.1	0.2	0.2
5/21/2008 16:44	R08050321-005	0	0.1	0.2	0.3	0.2	0.2
6/24/2008 18:20	R08060427-005	0	0.1	0.2	0.2	0.2	0.2
7/14/2008 15:52	R08070244-006	0	0.08	0.2	0	0.2	0.2
8/20/2008 17:10	R08080332-008	0.1	0.08	0.2	0	0.2	0.2
9/23/2008 11:45	R08090356-004	0	0.08	0.2	-0.1	0.05	0.2
10/21/2008 9:45	R08100295-011	0	0.08	0.2	-0.1	0.05	0.2
11/18/2008 13:35	R08110211-010	0	0.1	0.2	0.1	0.05	0.2
12/17/2008 14:45	R08120255-009	0.1	0.2	0.2	-0.2	0.2	0.2
1/20/2009 12:35	R09010301-006	0	0.08	0.2	-0.2	0.2	0.2
2/24/2009 16:45	R09020293-012	-0.03	0.05	0.1	0.05	0.2	0.3
7002 - Monitor Well, Screened Interval Pending Confirmation							
9/28/2007 17:48	R07100002-008	<0.2		0.2	<0.2		0.2
11/12/2007 8:10	R07110146-001	<0.2		0.2	<0.2		0.2
2/20/2008 8:30	R08020220-001	<0.2		0.2	<0.2		0.2
5/29/2008 10:44	R08050419-001	0.1	0.1	0.2	0	0.1	0.2

POWERTECH (USA) INC.

Analyte		Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	RL	Result	RL	Result	RL
Hydro ID Date & Time Collected	ELI Lab ID	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
680 - Monitor Well, Screened Interval 3265.94 to 3275.94 ft AMSL							
1/30/2008 13:50	R08010296-001	0.172	0.0003	0.0008	0.0003	NM	NM
3/31/2008 15:15	R08040002-002	0.0569	0.0003	<0.0003	0.0003	0.0541	0.0003
4/21/2008 21:21	R08040250-007	0.0303	0.0003	<0.0003	0.0003	0.0291	0.0003
5/13/2008 16:06	R08050199-001	0.0213	0.0003	0.0004	0.0003	0.0238	0.0003
5/21/2008 12:50	R08050321-002	0.026	0.0003	<0.0003	0.0003	0.0273	0.0003
6/10/2008 10:50	R08060210-001	0.0227	0.0003	<0.0003	0.0003	0.0244	0.0003
7/7/2008 13:29	R08070115-002	0.0186	0.0003	<0.0003	0.0003	0.0208	0.0003
8/20/2008 10:23	R08080332-002	0.0188	0.0003	<0.0003	0.0003	0.018	0.0005
9/22/2008 11:18	R08090314-001	0.0191	0.0003	<0.0003	0.0003	0.0177	0.0005
10/20/2008 12:05	R08100295-002	0.0176	0.0003	<0.0003	0.0003	0.021	0.0003
11/18/2008 10:25	R08110211-005	0.0196	0.0003	<0.0003	0.0003	0.0174	0.0003
12/17/2008 13:50	R08120255-007	0.0199	0.0003	<0.0009	0.0009	0.0203	0.0003
1/20/2009 15:25	R09010301-011	0.0205	0.0003	<0.0003	0.0003	0.022	0.0003
2/24/2009 13:35	R09020293-007	0.0185	0.0003	<0.0003	0.0003	0.0206	0.0003
689 - Monitor Well, Screened Interval 2899.69 to 2914.69 ft AMSL							
3/30/2008 17:25	R08030315-007	0.0032	0.0003	0.0005	0.0003	0.0041	0.0003
4/21/2008 19:50	R08040250-005	0.0037	0.0003	<0.0003	0.0003	0.004	0.0003
5/28/2008 22:25	R08050406-006	0.0043	0.0003	0.0004	0.0003	0.0117	0.0003
6/25/2008 18:18	R08060452-004	0.0034	0.0003	0.0005	0.0003	0.006	0.0003
7/1/2008 16:17	R08070035-006	0.0032	0.0003	<0.0003	0.0003	0.0073	0.0003
7/14/2008 16:50	R08070244-008	0.0034	0.0003	<0.0003	0.0003	0.0041	0.0003
8/19/2008 19:18	R08080301-005	0.0034	0.0003	<0.0003	0.0003	0.0034	0.0005
9/23/2008 13:43	R08090356-001	0.003	0.0003	<0.0003	0.0003	0.003	0.0005
10/20/2008 14:46	R08100295-008	0.0031	0.0003	<0.0003	0.0003	0.0035	0.0003
11/18/2008 14:02	R08110211-011	0.0033	0.0003	<0.0003	0.0003	0.0031	0.0003
12/17/2008 11:02	R08120255-003	0.005	0.0003	0.0011	0.0009	0.006	0.0003
1/20/2009 13:05	R09010301-008	0.0035	0.0003	<0.0003	0.0003	0.0036	0.0003
2/24/2009 16:04	R09020293-010	0.003	0.0003	<0.0003	0.0003	0.0032	0.0003
Chilson Downgradient							
2 - Domestic Well, Screened Interval 2905 to 2989 ft AMSL							
9/26/2007 12:46	R07090384-002	<0.0003	0.0003	0.0003	0.0003	0.0004	0.0003
11/12/2007 9:25	R07110146-003	<0.0003	0.0003	<0.0003	0.0003	NM	NM
2/12/2008 10:21	R08020130-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/30/2008 15:21	R08050427-003	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
42 - Domestic Well, Screened Interval Pending Confirmation							
10/3/2006 10:18	R06100076-002	0.04	0.001	NM	NM	NM	NM
9/28/2007 11:34	R07100002-003	0.015	0.0003	0.0029	0.0003	NM	NM
11/12/2007 11:20	R07110146-006	0.0324	0.0003	<0.0003	0.0003	NM	NM
2/5/2008 14:10	R08020052-004	0.0194	0.0003	<0.0003	0.0003	0.0198	0.0003
5/30/2008 11:55	R08050427-002	0.0142	0.0003	<0.0003	0.0003	0.0149	0.0003
696 - Monitor Well, Screened Interval 3012.91 to 3027.91 ft AMSL							
3/31/2008 13:41	R08040002-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
4/22/2008 16:58	R08040287-007	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/21/2008 11:55	R08050321-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
6/24/2008 15:08	R08060427-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
7/14/2008 15:10	R08070244-004	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
8/20/2008 15:10	R08080332-006	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
9/23/2008 9:35	R08090356-006	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
10/21/2008 8:45	R08100295-014	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
11/18/2008 8:45	R08110211-002	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
12/17/2008 16:05	R08120255-012	<0.0003	0.0003	<0.0009	0.0009	<0.0003	0.0003
1/20/2009 16:55	R09010301-013	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
2/24/2009 17:31	R09020293-015	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
697 - Monitor Well, Screened Interval 2918.3 to 2933.3 ft AMSL							
3/30/2008 16:36	R08030315-006	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
4/22/2008 16:02	R08040287-005	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
5/21/2008 16:44	R08050321-005	<0.0003	0.0003	0.0007	0.0003	<0.0003	0.0003
6/24/2008 18:20	R08060427-005	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
7/14/2008 15:52	R08070244-006	<0.0003	0.0003	<0.0003	0.0003	0.0003	0.0003
8/20/2008 17:10	R08080332-008	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
9/23/2008 11:45	R08090356-004	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
10/21/2008 9:45	R08100295-011	<0.0003	0.0003	0.0006	0.0003	<0.0003	0.0003
11/18/2008 13:35	R08110211-010	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
12/17/2008 14:45	R08120255-009	<0.0003	0.0003	<0.0009	0.0009	<0.0003	0.0003
1/20/2009 12:35	R09010301-006	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
2/24/2009 16:45	R09020293-012	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
7002 - Monitor Well, Screened Interval Pending Confirmation							
9/28/2007 17:48	R07100002-008	0.0007	0.0003	<0.0003	0.0003	NM	NM
11/12/2007 8:10	R07110146-001	0.0006	0.0003	<0.0003	0.0003	NM	NM
2/20/2008 8:30	R08020220-001	0.0006	0.0003	<0.0003	0.0003	0.0005	0.0003
5/29/2008 10:44	R08050419-001	0.0005	0.0003	<0.0003	0.0003	0.0006	0.0003

ELI - Energy Laboratories, Inc.

NM - not measured

Exceeds National Primary Drinking Water Regulations, 40 CFR 141.66 Maximum Contaminant Level

Data have been requested from ELI for inclusion in revised TR

POWERTECH (USA) INC.

Analyte				Gross Alpha			Lead 210 - Dissolved		
Maximum Contaminant Level (40 CFR 141.66)				15 pCi/L			none		
Measurement		Water Level	Sampling Method	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	ft AMSL	and Preservation	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Unkpapa Upgradient									
703 - Domestic Well, Screened Interval 3355 to 3405 ft AMSL									
1/20/2009 15:05	R09010302-001	NM	dedicated pump, ice	42.6	6	5.4	1	2.5	4.2
Unkpapa Near									
690 - Monitor Well, Screened Interval 3069 to 3079 ft AMSL									
7/7/2008 18:10	R08070115-005	NM	flowing artesian, ice	4.8	3.6	5.4	1.8	4.7	7.9
693 - Monitor Well, Screened Interval 2695 to 2715 ft AMSL									
7/1/2008 19:39	R08070035-001	NM	flowing artesian, ice	2.8	3.8	6	1.3	4.7	7.9
Unkpapa Downgradient									
704 - Domestic Well, Screened Interval 2645 to 2685 ft AMSL									
9/23/2008 12:30	R08090356-003	NM	flowing artesian, ice	-3	4	7.4	1.1	5.4	9

POWERTECH (USA) INC.

Analyte		Lead 210 - Suspended			Polonium 210 - Dissolved			Polonium 210 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Unkpapa Upgradient										
703 - Domestic Well, Screened Interval 3355 to 3405 ft AMSL										
1/20/2009 15:05	R09010302-001	1.1	4.8	8	-0.015	0.19	0.53	0.047	0.27	0.58
Unkpapa Near										
690 - Monitor Well, Screened Interval 3069 to 3079 ft AMSL										
7/7/2008 18:10	R08070115-005	-5.7	12.7	21.4	0.7	1.1	1	0.1	0.31	1
693 - Monitor Well, Screened Interval 2695 to 2715 ft AMSL										
7/1/2008 19:39	R08070035-001	-1.3	5.9	9.9	0.3	0.6	1	0	0.29	1
Unkpapa Downgradient										
704 - Domestic Well, Screened Interval 2645 to 2685 ft AMSL										
9/23/2008 12:30	R08090356-003	-3	4.6	7.8	0.3	0.8	1	-0.015	0.21	

POWERTECH (USA) INC.

Analyte		Radium 226 - Dissolved			Radium 226 - Suspended			Radon		
Maximum Contaminant Level (40 CFR 141.66)		5 pCi/L			5 pCi/L			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Unkpapa Upgradient										
703 - Domestic Well, Screened Interval 3355 to 3405 ft AMSL										
1/20/2009 15:05	R09010302-001	0.4	0.2	-5000	-0.4	0.2	0.5	153	57.7	100
Unkpapa Near										
690 - Monitor Well, Screened Interval 3069 to 3079 ft AMSL										
7/7/2008 18:10	R08070115-005	0.2	0.1	-5000	-0.3	0.2	0.5	194	50	100
693 - Monitor Well, Screened Interval 2695 to 2715 ft AMSL										
7/1/2008 19:39	R08070035-001	0.6	0.2	-5000	0.2	0.2	0.3	424	49.7	100
Unkpapa Downgradient										
704 - Domestic Well, Screened Interval 2645 to 2685 ft AMSL										
9/23/2008 12:30	R08090356-003	0.04	0.1	-5000	-0.2	0.1	0.4	188	59.3	100

POWERTECH (USA) INC.

Analyte		Thorium 230 - Dissolved			Thorium 230 - Suspended		
Maximum Contaminant Level (40 CFR 141.66)		none			none		
Measurement		Result	Precision +/-	RL/MDC	Result	Precision +/-	RL/MDC
Hydro ID Date & Time Collected	ELI Lab ID	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
Unkpapa Upgradient							
703 - Domestic Well, Screened Interval 3355 to 3405 ft AMSL							
1/20/2009 15:05	R09010302-001	0.1	0.09	0.2	-0.2	0.2	0.2
Unkpapa Near							
690 - Monitor Well, Screened Interval 3069 to 3079 ft AMSL							
7/7/2008 18:10	R08070115-005	0	0.1	0.2	0	0.2	0.2
693 - Monitor Well, Screened Interval 2695 to 2715 ft AMSL							
7/1/2008 19:39	R08070035-001	0	0.05	0.2	0	0.2	0.2
Unkpapa Downgradient							
704 - Domestic Well, Screened Interval 2645 to 2685 ft AMSL							
9/23/2008 12:30	R08090356-003	0	0.1	0.2	0.3	0.05	0.2

POWERTECH (USA) INC.

Analyte		Uranium - Dissolved		Uranium - Suspended		Uranium - Total	
Maximum Contaminant Level (40 CFR 141.66)		0.030 mg/L		0.030 mg/L		0.030 mg/L	
Measurement		Result	RL	Result	RL	Result	RL
Hydro ID Date & Time Collected	ELI Lab ID	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Unkpapa Upgradient							
703 - Domestic Well, Screened Interval 3355 to 3405 ft AMSL							
1/20/2009 15:05	R09010302-001	0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
Unkpapa Near							
690 - Monitor Well, Screened Interval 3069 to 3079 ft AMSL							
7/7/2008 18:10	R08070115-005	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
693 - Monitor Well, Screened Interval 2695 to 2715 ft AMSL							
7/1/2008 19:39	R08070035-001	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003
Unkpapa Downgradient							
704 - Domestic Well, Screened Interval 2645 to 2685 ft AMSL							
9/23/2008 12:30	R08090356-003	<0.0003	0.0003	<0.0003	0.0003	<0.0003	0.0003

ELI - Energy Laboratories, Inc.
NM - not measured
Exceeds National Primary Drinking Water Regulations, 40 CFR 141.66 Maximum Contaminant Level
Data have been requested from ELI for inclusion in revised TR

APPENDIX 2.9-K

Radionuclide Concentrations in Sediment

POWERTECH (USA) INC.

Analyte		Lead 210			Radium 226			Thorium 230			Uranium	
Measurement		Result	Precision +/-	MDC	Result	Precision +/-	MDC	Result	Precision +/-	MDC	Result	RL
Site Date & Time Collected	ELI Lab ID	pCi/g-dry	pCi/g-dry	pCi/g-dry	pCi/g-dry	pCi/g-dry	pCi/g-dry	pCi/g-dry	pCi/g-dry	pCi/g-dry	mg/kg-dry	mg/kg-dry
Sub01S - stock pond												
6/18/2008 12:05	R08060358-001	0.5	2	3.4	1.2	0.2	0.1	0.7	0.2	0.1	2.2	0.5
8/21/2008 15:55	R08080356-018	1	0.7	1.1	1.1	0.1	0.09	1	0.03	0.1	3.3	0.5
Sub02S - Triangle Mine Pit												
6/18/2008 13:15	R08060358-002	2.8	2.1	3.3	3.9	0.3	0.1	2.9	0.7	0.1	18	0.5
8/21/2008 15:31	R08080356-017	3.1	0.7	1.1	1.3	0.2	0.09	6.8	0.07	0.1	19	0.5
Sub03S - mine dam												
6/18/2008 14:10	R08060358-003	3.9	2.1	3.3	4.1	0.3	0.1	2.1	0.6	0.1	7.2	0.5
8/21/2008 10:56	R08080356-008	3.2	0.7	1.1	1.1	0.2	0.09	1.9	0.04	0.1	4.2	0.5
Sub04S - stock pond												
6/17/2008 14:10	R08060341-006	1.2	2	3.3	2.5	0.2	0.1	0.9	0.2	0.1	6.5	0.5
8/21/2008 11:09	R08080356-009	2.1	0.7	1.1	0.7	0.1	0.09	1.8	0.04	0.1	5.1	0.5
Sub05S - mine dam												
6/18/2008 15:15	R08060358-004	4.2	2.1	3.3	4.2	0.3	0.1	2.4	0.5	0.1	8.5	0.5
8/21/2008 10:46	R08080356-007	2.8	0.7	1.1	3	0.2	0.09	2.3	0.04	0.1	6	0.5
Sub06S - Darrow Mine Pit Northwest												
6/23/2008 13:50	R08060402-003	9.6	2.2	3.4	8.6	0.4	0.1	7.8	1.6	0.1	37	0.5
8/21/2008 10:36	R08080356-006	4	0.7	1.1	5.2	0.3	0.09	5.9	0.07	0.1	32	0.5
Sub07S - stock dam												
6/23/2008 14:35	R08060402-004	0.6	2	3.3	0.7	0.1	0.1	0.5	0.2	0.1	1.7	0.5
8/21/2008 10:09	R08080356-005	1.9	0.7	1.1	0.4	0.1	0.1	0.9	0.03	0.1	2.2	0.5
Sub08S - stock pond												
6/23/2008 12:25	R08060402-001	0.6	2.1	3.4	0.6	0.1	0.1	0.4	0.1	0.1	1.2	0.5
8/21/2008 15:12	R08080356-016	1.7	0.7	1.1	0.4	0.1	0.09	0.8	0.02	0.1	1.9	0.5
Sub09S - stock pond												
6/23/2008 12:55	R08060402-002	1.5	2	3.3	1	0.2	0.1	0.7	0.2	0.1	2.4	0.5
8/21/2008 15:01	R08080356-015	1.7	0.7	1.1	0.6	0.1	0.09	0.9	0.03	0.1	2.3	0.5
Sub10S - stock pond												
6/23/2008 16:30	R08060402-007	1.5	2.1	3.4	0.8	0.1	0.1	0.7	0.3	0.1	1.5	0.5
8/21/2008 9:38	R08080356-003	0.9	0.7	1.1	0.6	0.1	0.09	0.7	0.03	0.1	2.1	0.5
Sub11S - stock pond												
6/23/2008 15:15	R08060402-005	2.1	2.1	3.4	0.8	0.1	0.1	0.5	0.2	0.1	2.7	0.5
8/21/2008 9:56	R08080356-004	1.5	0.7	1.1	0.6	0.1	0.08	0.8	0.03	0.1	1.8	0.5
BVC01S - Beaver Creek downstream												
6/17/2008 11:00	R08060341-002	0.5	2	3.3	1.3	0.2	0.1	0.8	0.2	0.1	2	0.5
8/21/2008 13:36	R08080356-012	2.6	0.7	1.1	0.6	0.1	0.09	1.2	0.03	0.1	2	0.5
BVC04S - Beaver Creek upstream												
6/17/2008 12:17	R08060341-004	1.9	2.1	3.4	1.5	0.2	0.1	0.7	0.2	0.1	2	0.5
8/21/2008 14:23	R08080356-014	1.8	0.7	1.1	1	0.1	0.09	1	0.03	0.1	2	0.5
CHR01S - Cheyenne River upstream												
6/17/2008 11:35	R08060341-003	0.2	2	3.3	1	0.2	0.1	0.6	0.2	0.1	1.7	0.5
8/21/2008 13:52	R08080356-013	1.7	0.6	1.1	0.9	0.1	0.09	1.4	0.03	0.1	2.7	0.5
CHR05S - Cheyenne River downstream												
6/17/2008 10:40	R08060341-001	1.7	2	3.3	2.1	0.2	0.1	1.9	0.4	0.1	6.2	0.5
8/21/2008 13:13	R08080356-011	1.3	0.7	1.1	0.6	0.1	0.09	0.5	0.02	0.1	1.2	0.5
PSC01S - Pass Creek downstream												
6/17/2008 12:50	R08060341-005	4.7	2.1	3.3	2.9	0.3	0.1	2	0.5	0.1	3.9	0.5
8/21/2008 11:24	R08080356-010	4	0.7	1.1	1.8	0.2	0.08	4.1	0.06	0.1	6.5	0.5
PSC02S - Pass Creek upstream												
6/17/2008 15:30	R08060341-007	1.2	2	3.3	0.6	0.1	0.1	0.4	0.1	0.1	1.1	0.5
8/21/2008 16:16	R08080356-019	0.4	0.6	1.1	0.4	0.1	0.09	0.4	0.02	0.1	1	0.5
UNT01S - Unnamed Tributary												
6/23/2008 16:00	R08060402-006	2.2	2.1	3.4	0.8	0.1	0.1	0.5	0.2	0.1	2	0.5
8/21/2008 9:23	R08080356-002	1.7	0.7	1.1	0.7	0.1	0.09	1	0.03	0.1	2.5	0.5
BEN01S - Bennett Canyon												
6/23/2008 17:30	R08060402-008	2.3	2.1	3.4	0.6	0.1	0.1	0.6	0.2	0.1	1.8	0.5
8/21/2008 9:02	R08080356-001	2	0.7	1.1	0.6	0.1	0.08	0.5	0.02	0.1	2.4	0.5

ELI - Energy Laboratories, Inc.

POWERTECH (USA) INC.

APPENDIX 2.9-L

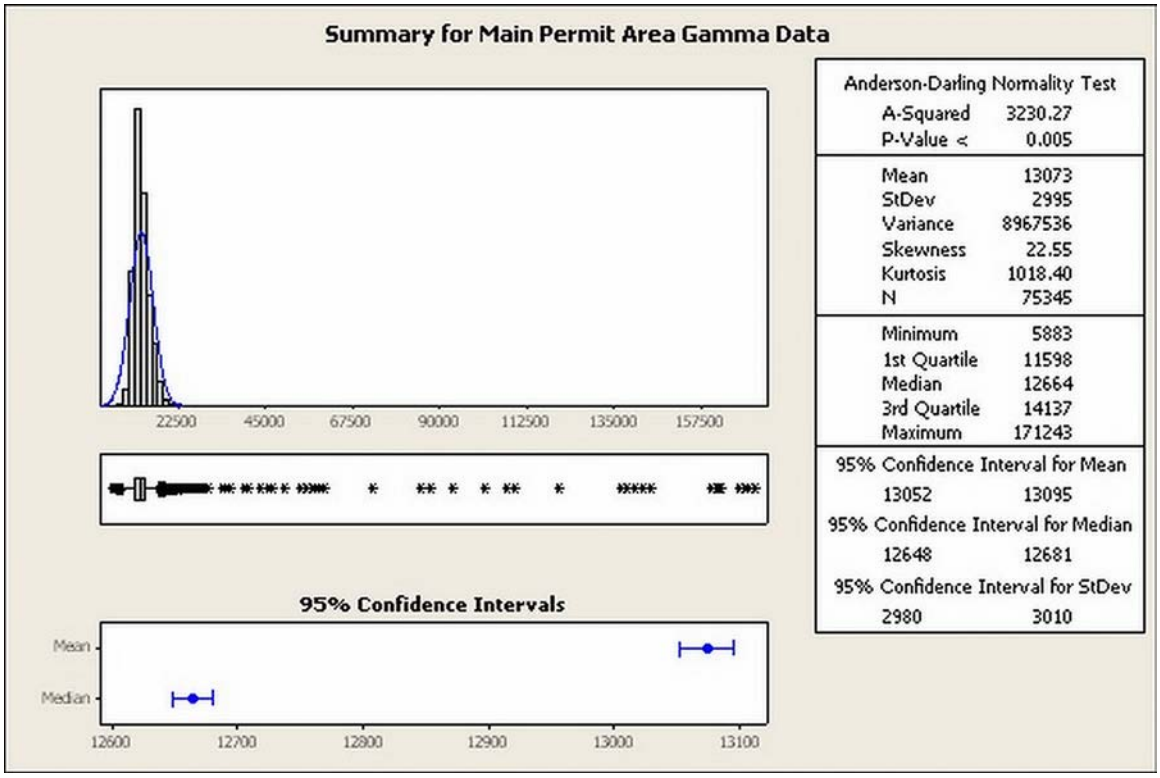
Statistical Analysis of Baseline Gamma Survey Data

The gamma data from the Main Permit Area, Surface Mine Area, and both land application areas (Dewey and Burdock) were analyzed separately with the statistical software package Minitab, version 15.1.1.0. This appendix presents the output graphs from Minitab. Refer to Appendix 2.9-M for additional explanation of the statistical methods.

Main Permit Area

The gamma data from the Main Permit Area were tested for a normal distribution. Figure 1 displays the results of the test as well as a histogram and statistical summary of the data. The p-value demonstrates that the gamma data from the Main Permit Area are not normally distributed.

Figure 1: Summary of Statistics and Normality Test of Gamma Data from the Main Permit Area (in cpm).



The data were then tested for lognormal and exponential distributions. Figures 2 and 3 show the results of the tests for lognormal and exponential distributions, along with their respective probability plots. The p-values demonstrate that the data are not lognormally or exponentially distributed.

Figure 2: Statistical Results and Probability Plot of the Test for Lognormal Distribution on Gamma Data from the Main Permit Area.

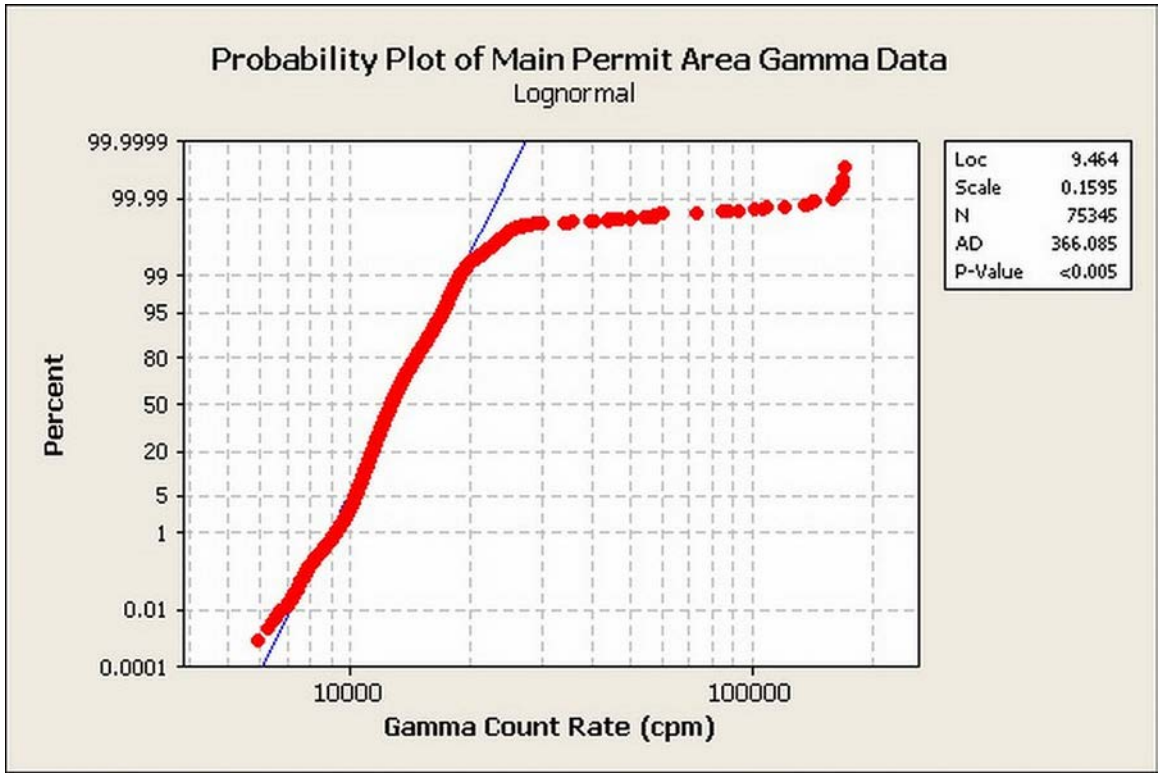
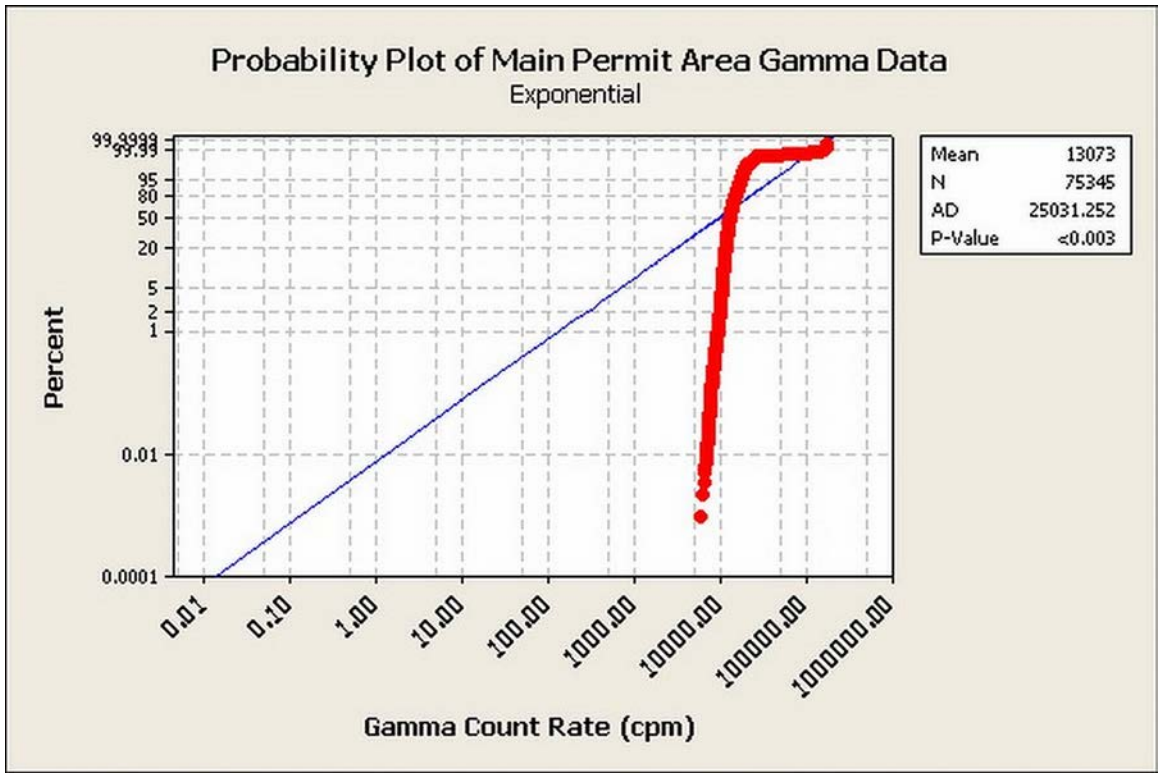
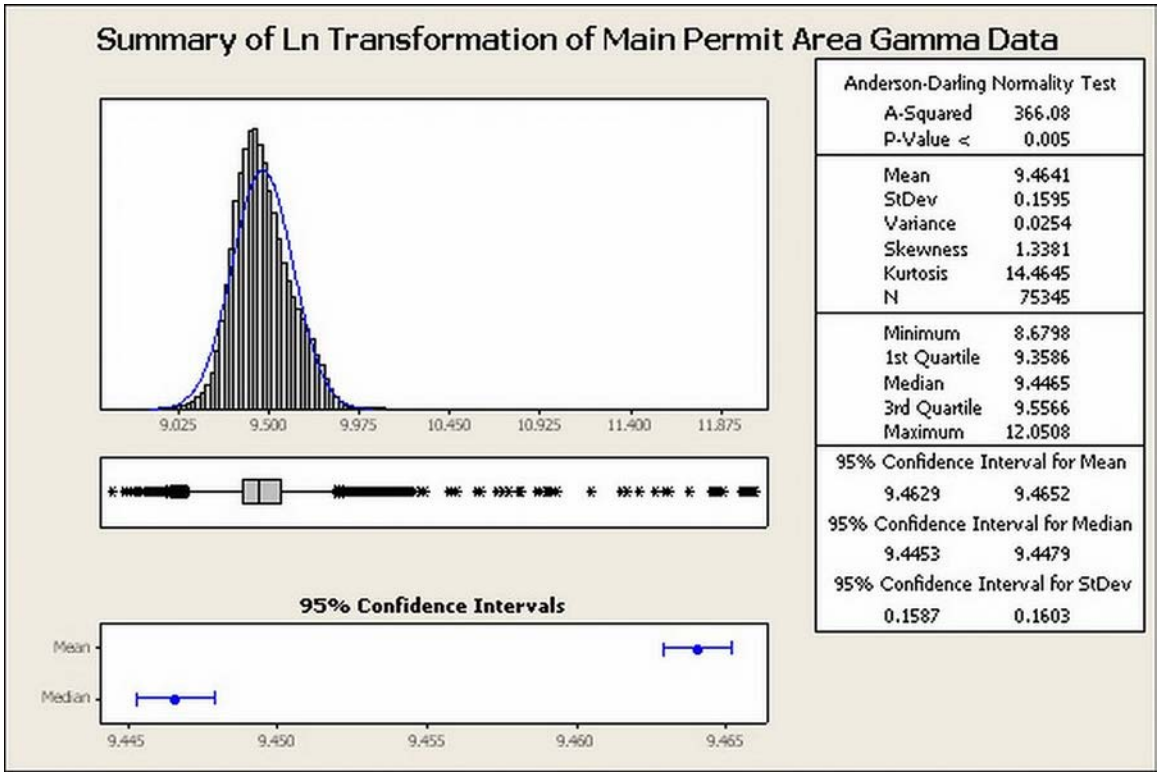


Figure 3: Statistical Results and Probability Plot of the Test for Exponential Distribution on Gamma Data from the Main Permit Area.



Each value in the set of data was transformed by taking its natural logarithm and the transformed data set was tested for a normal distribution. Figure 4 displays the results of the test as well as a histogram and statistical summary of the transformed data. The test shows that the transformed data are not normally distributed.

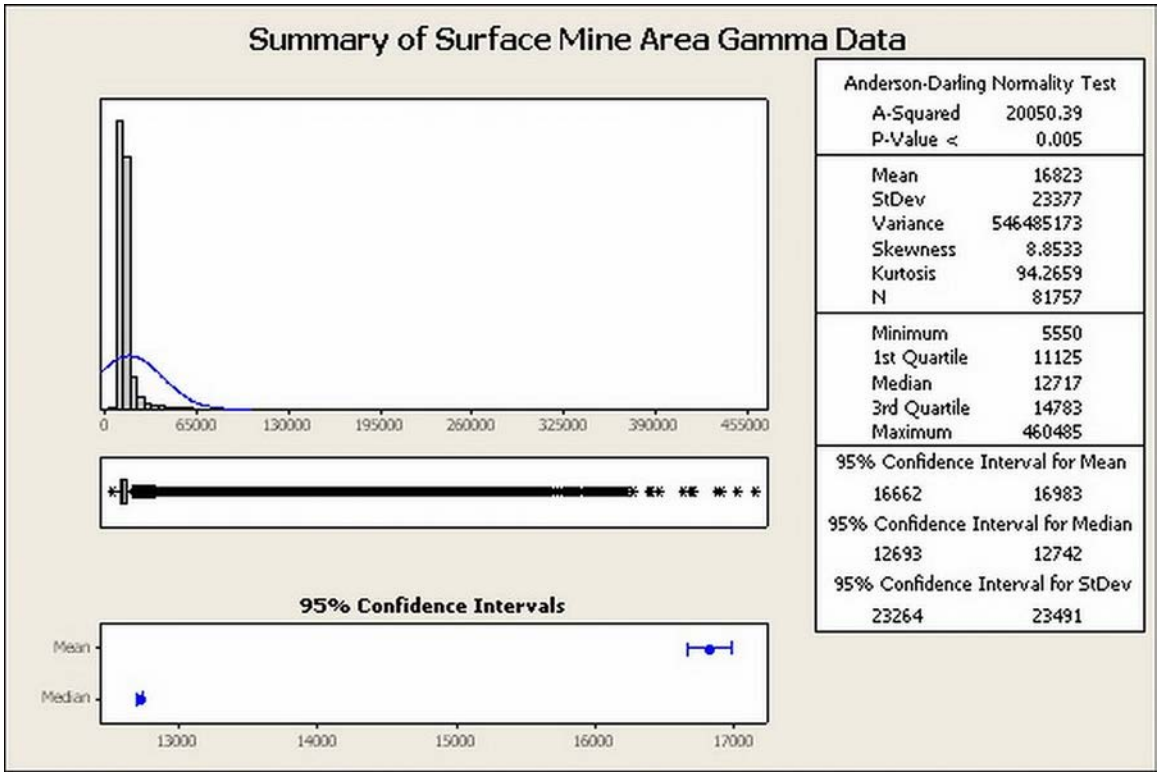
Figure 4: Summary of Statistics and Normality Test of Transformed Gamma Data from the Main Permit Area.



Surface Mine Area

The gamma data from the Surface Mine Area was tested for a normal distribution. Figure 5 displays the results of the test as well as a histogram and statistical summary of the data. The test shows that the gamma data for the Surface Mine Area are not normally distributed.

Figure 5: Summary of Statistics and Normality Test of Gamma Data from the Surface Mine Area (in cpm).



The data were then tested for lognormal and exponential distributions Figures 6 and 7 show the statistical results and probability plots of the tests for lognormal and exponential distributions. The p-values show that the gamma data from the Surface Mine Area are not lognormally or exponentially distributed.

Figure 6: Statistical Results and Probability Plot of the Test for Lognormal Distribution on Gamma Data from the Surface Mine Area.

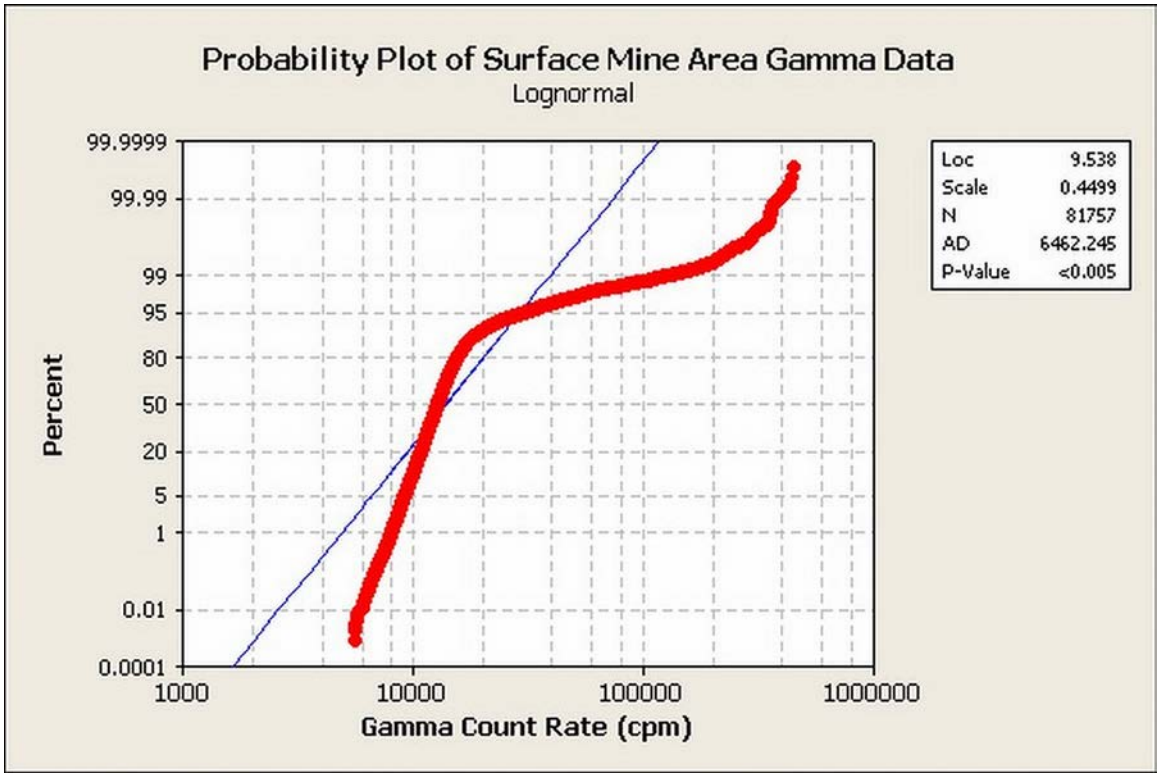
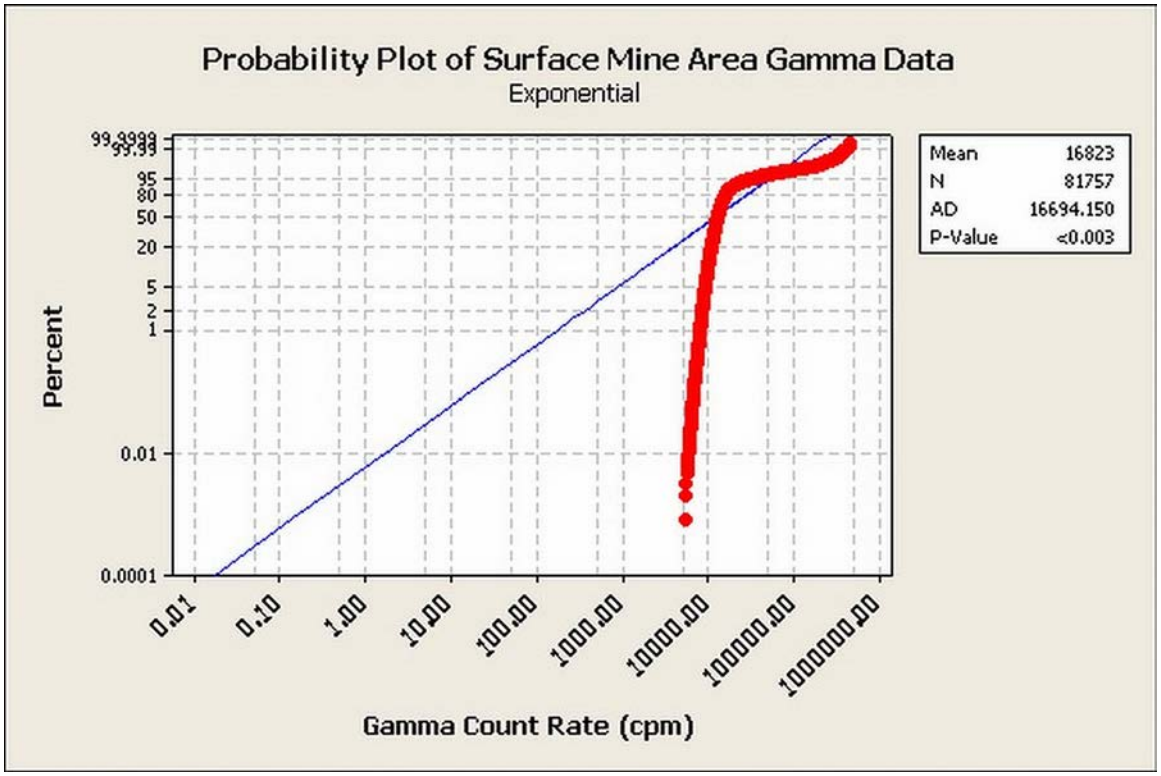
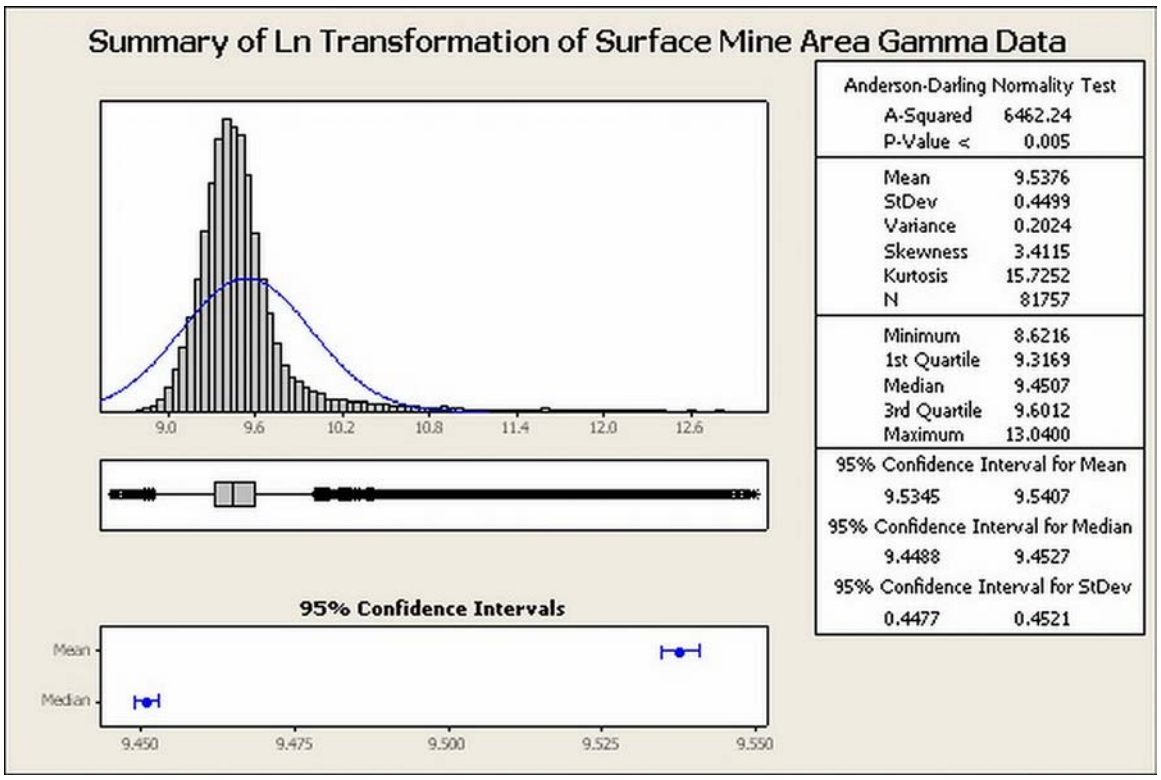


Figure 7: Statistical Results and Probability Plot of the Test for Exponential Distribution on Gamma Data from the Surface Mine Area.



Each value in the set of data was transformed by taking its natural logarithm and the transformed data were tested for a normal distribution. Figure 8 displays the results of the test as well as a histogram and statistical summary of the transformed data. The normality test shows that the transformed gamma data from the Surface Mine Area are not normally distributed.

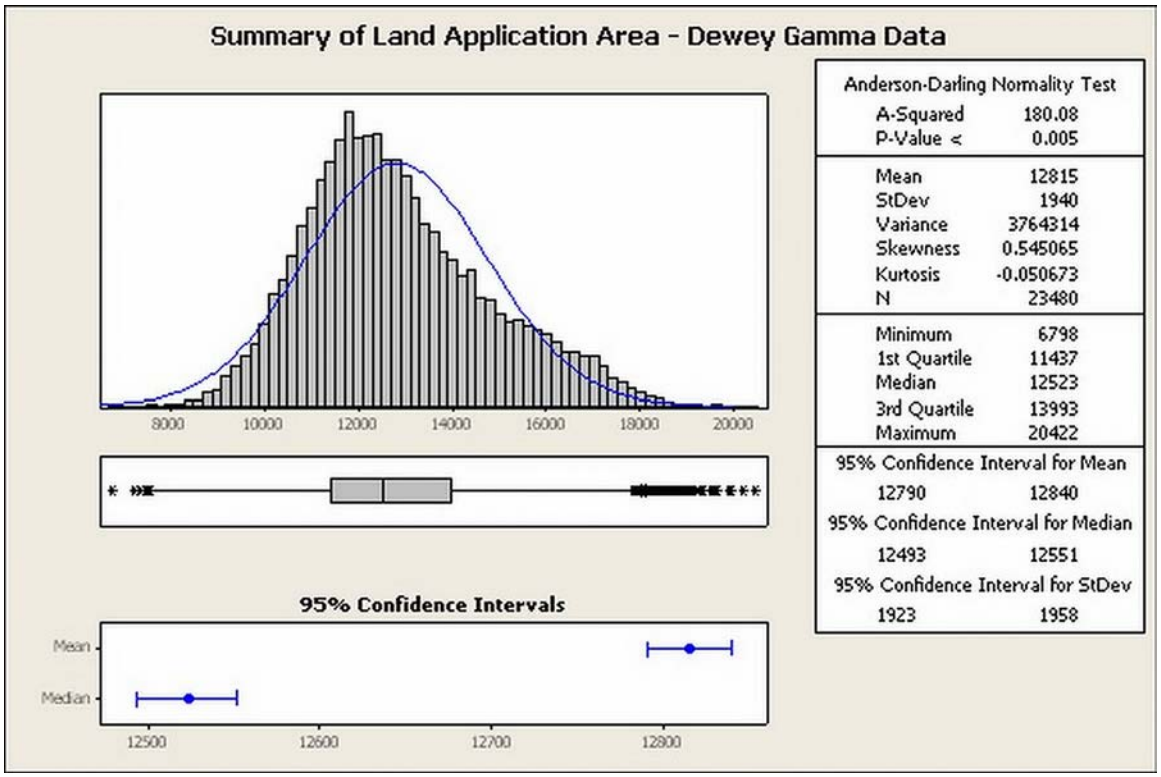
Figure 8: Summary of Statistics and Normality Test of Transformed Gamma Data from the Surface Mine Area.



Dewey Land Application Area

The gamma data from the Dewey Land Application Area was tested for a normal distribution. Figure 9 displays the results of the test as well as a histogram of the data. The normality test shows that the data are not normally distributed.

Figure 9: Summary of statistics and normality test of gamma data from the Dewey Land Application Area (in cpm).



The data were then tested for lognormal and exponential distributions. Figures 10 and 11 show the statistical results and probability plots of the tests for lognormal and exponential distributions. These figures show that the data are not lognormally or exponentially distributed.

Figure 10: Statistical Results and Probability Plot of the Test for Lognormal Distribution on Gamma Data from the Dewey Land Application Area.

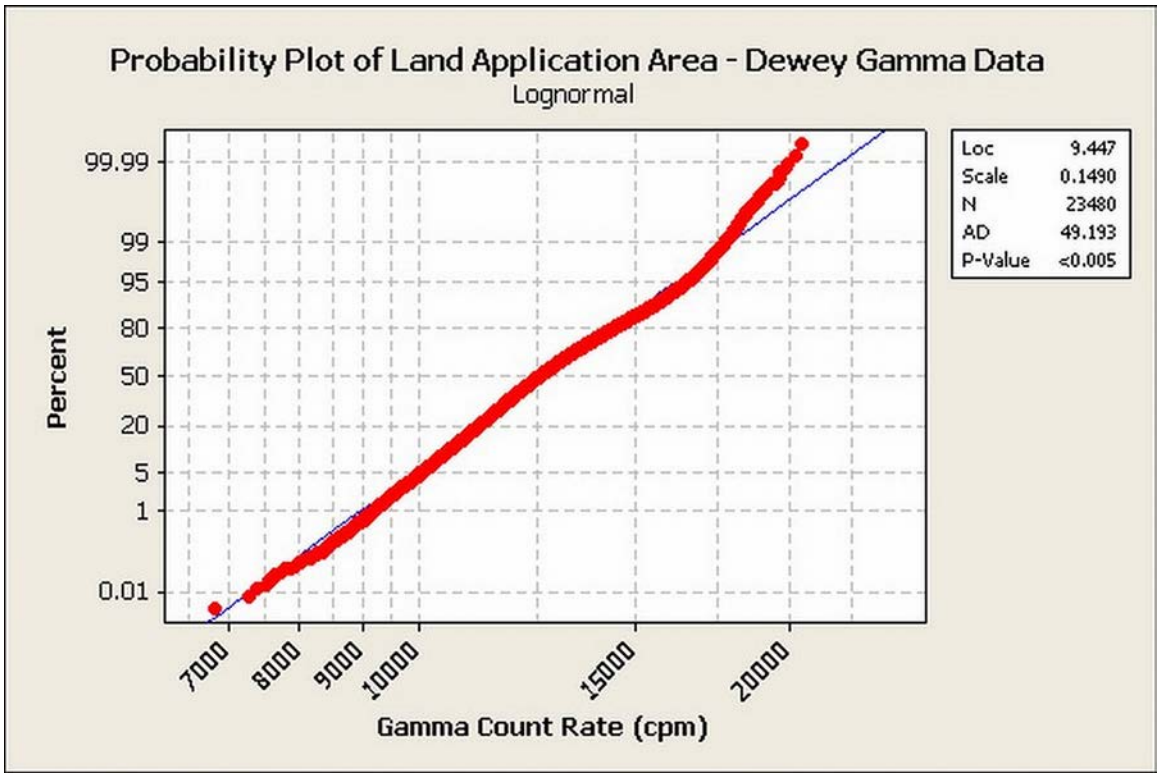
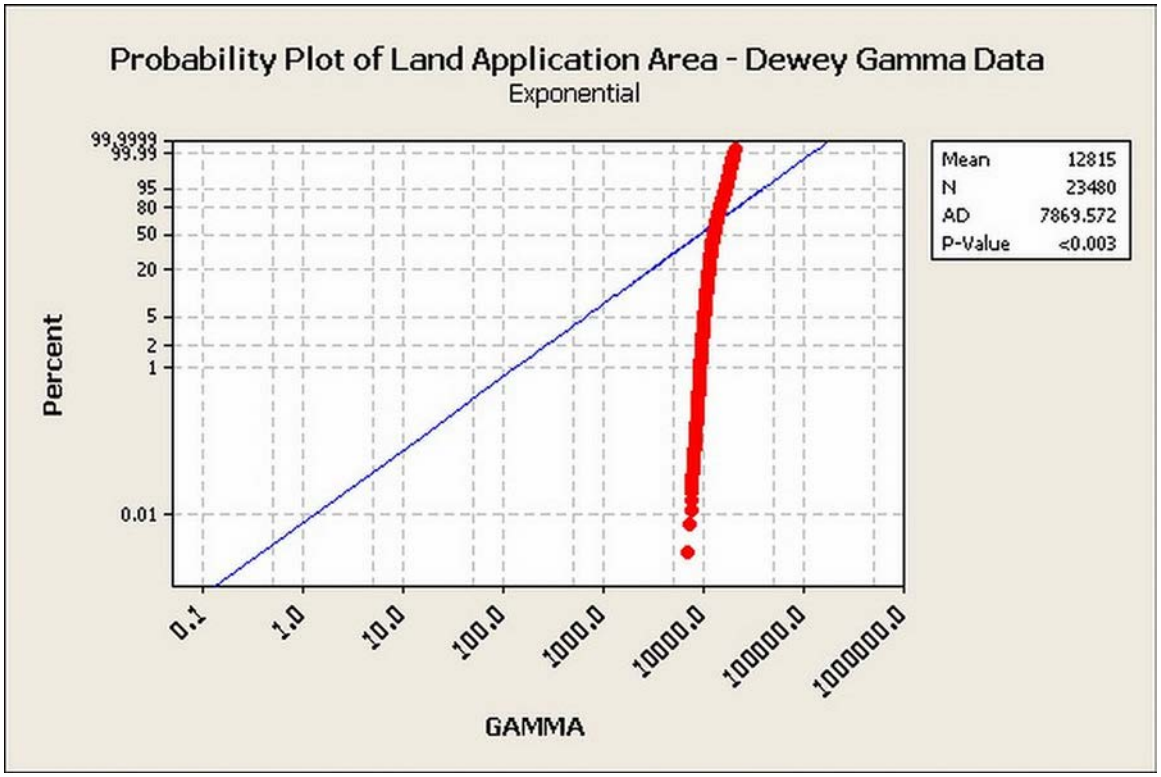
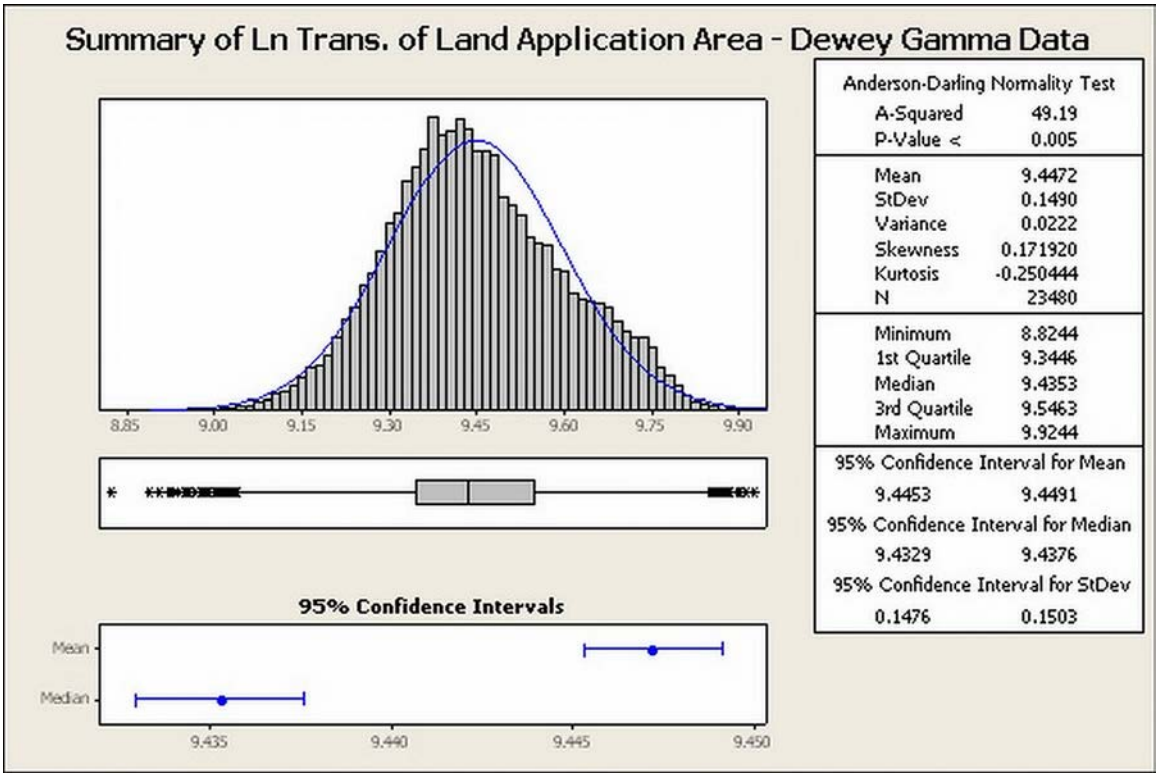


Figure 11: Statistical Results and Probability Plot of the Test for Exponential Distribution on Gamma Data from the Dewey Land Application Area.



Each value in the set of data was transformed by taking its natural logarithm and the transformed data were tested for a normal distribution. Figure 12 displays the results of the test as well as a histogram and statistical summary of the transformed data. This figure shows that the transformed data are not normally distributed.

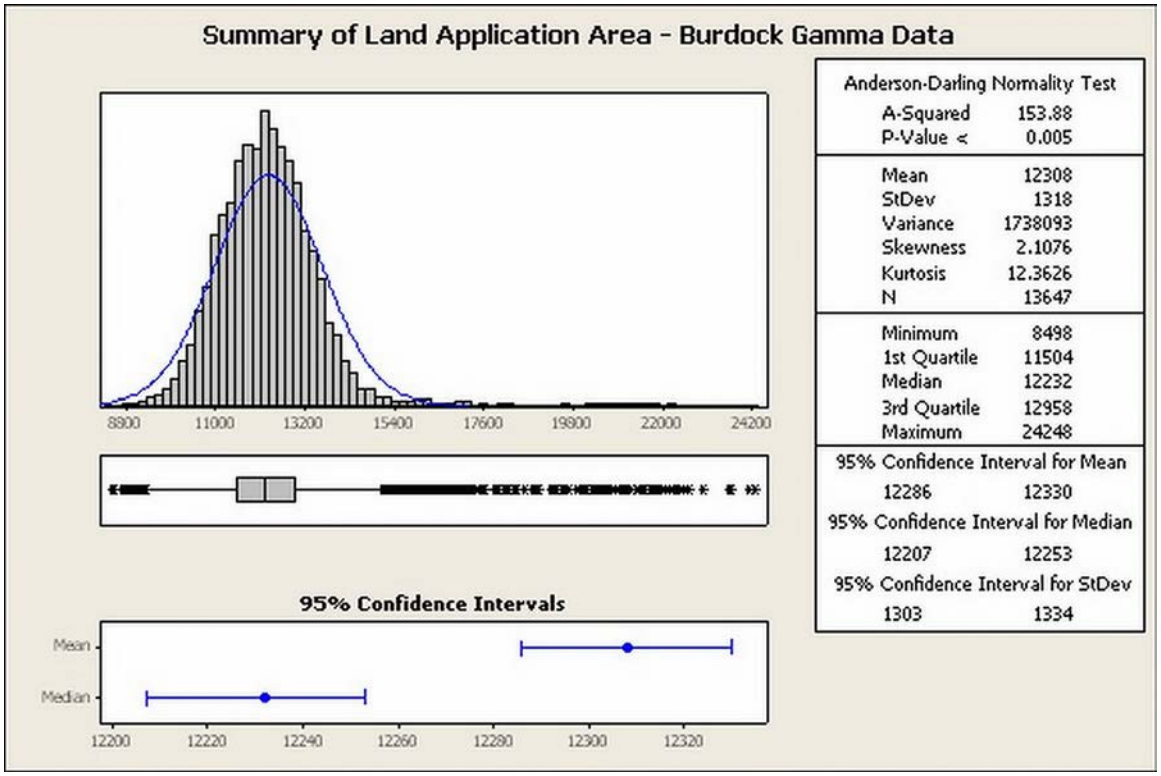
Figure 12: Summary of Statistics and Normality Test of Transformed Gamma Data from the Dewey Land Application Area.



Burdock Land Application Area

The gamma data from Burdock Land Application Area were tested for a normal distribution. Figure 13 displays the results of the test as well as a histogram and statistical summary of the data. This figure shows that the data are not normally distributed.

Figure 13: Summary of Statistics and Normality Test of Gamma Data from the Burdock Land Application Area (in cpm).



The data were then tested for lognormal and exponential distributions. Figures 14 and 15 show the results of the tests for lognormal and exponential distributions along with their respective probability plots. These figures show that the data are not lognormally or exponentially distributed.

Figure 14: Statistical Results and Probability Plot of the Test for Lognormal Distribution on Gamma Data from the Burdock Land Application Area.

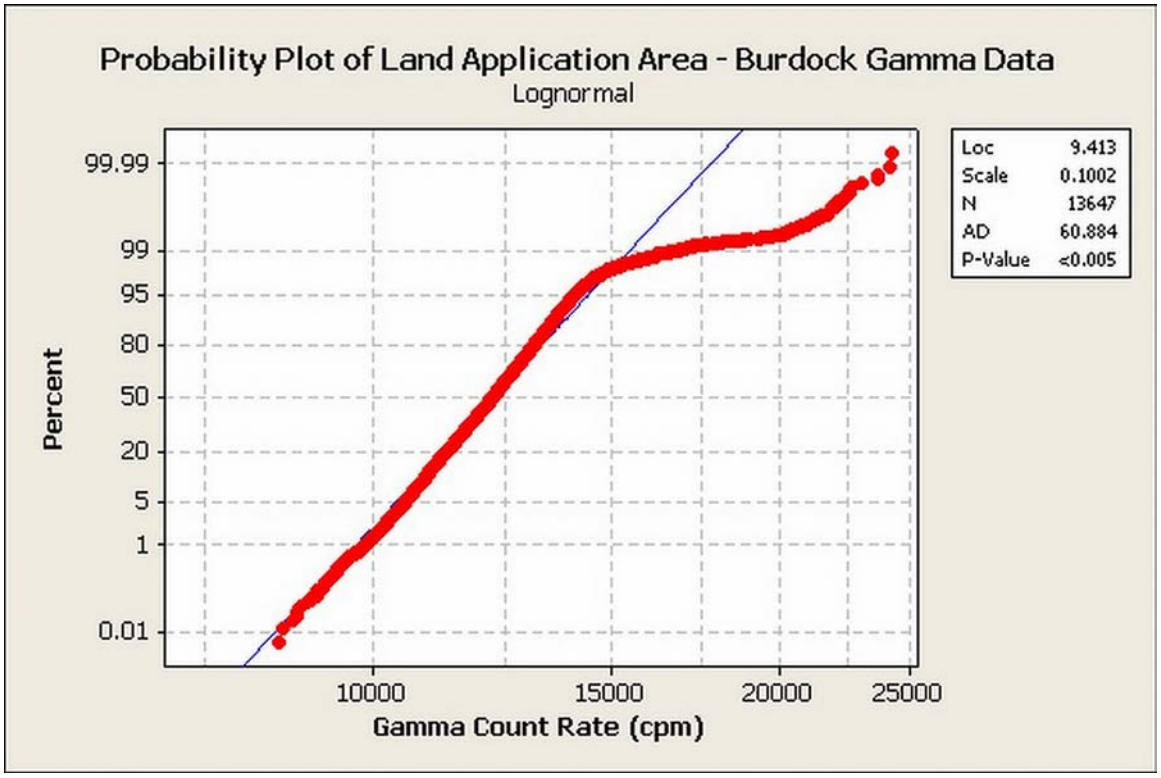
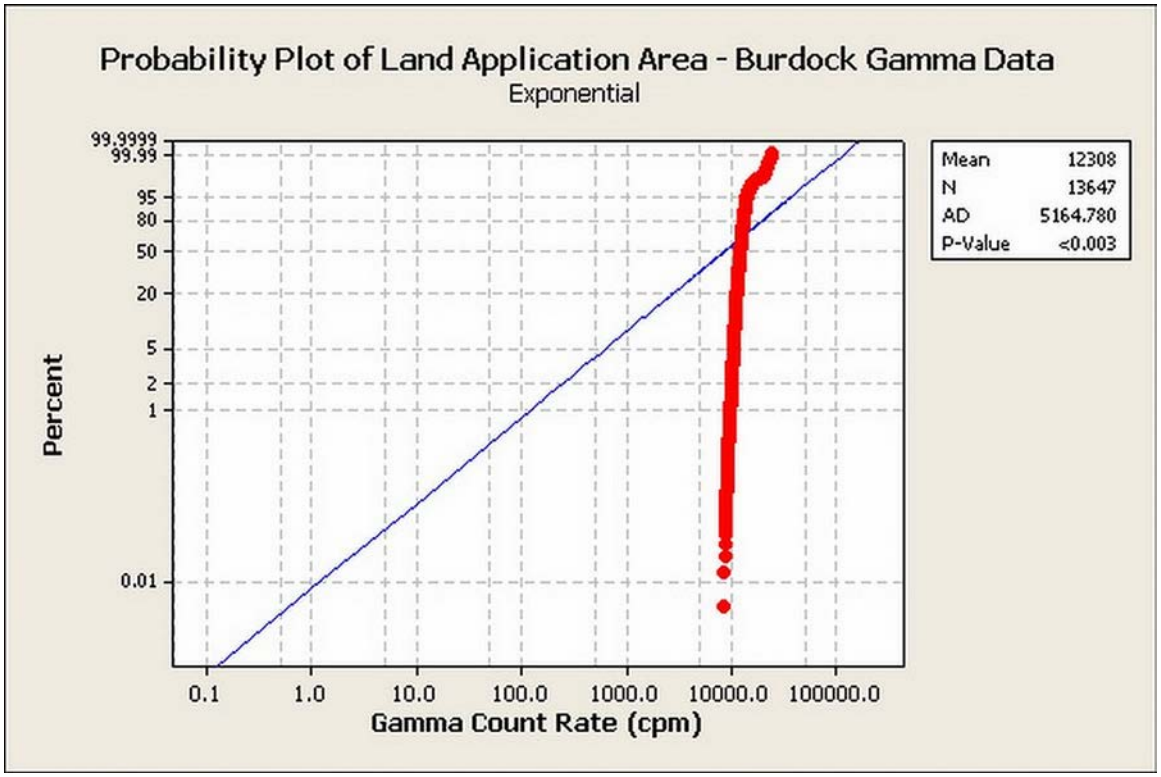


Figure 15: Statistical Results and Probability Plot of the Test for Exponential Distribution on Gamma Data from the Burdock Land Application Area.



Each value in the set of data was transformed by taking its natural logarithm and the transformed data were tested for a normal distribution. Figure 16 displays the results of the test as well as a histogram and statistical summary of the transformed data. The figure shows that the transformed data are not normally distributed.

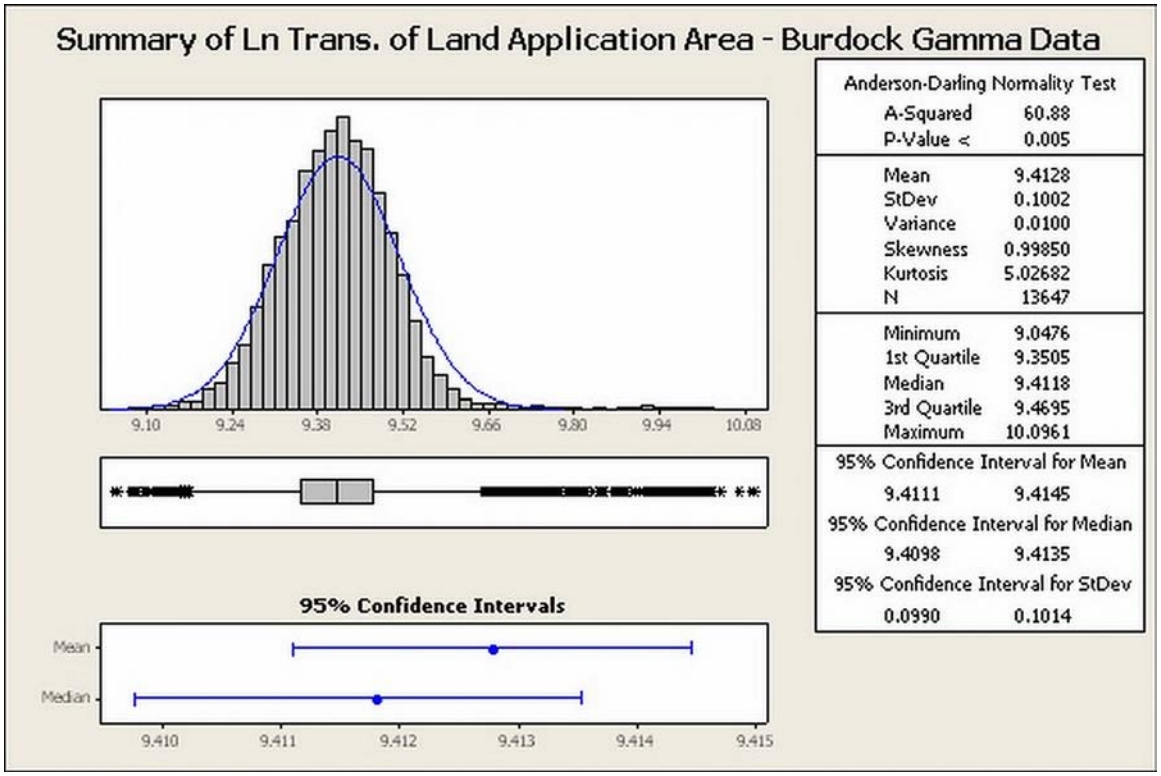



Figure 16: Summary of Statistics and Normality Test of Transformed Gamma Data from the Burdock Land Application Area.