

App E-
Sub-Area 5.1- COC Forms

Page: _____ of _____
 Project #: _____
 GEL Quote #: _____
 COC Number (1): _____
 PO Number: _____

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407
 Phone: (843) 556-8171
 Fax: (843) 766-1178

GEL Work Order Number: _____

Client Name: _____ Phone #: _____

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Project/Site Name: _____ Fax #: _____

Should this sample be considered _____

<- Preservative Type (6)

Address: _____

Collected by: _____ Send Results To: _____

Comments
 Note: extra sample is required for sample specific QC

Sample ID <small>* For composites - indicate start and stop date/time</small>	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (4)	Field Filtered (0)	Sample Matrix (0)	Rad. Cont. (0)	TSC A Reg. (0)	Ber of	Ber of	Ber of	Ber of	Ber of	Ber of	Ber of	Ber of	Ber of	Ber of	
S.SA.R.4.1A, S.SA.R.4.1B	12-14-15																	
S.SA.R.4.2A, S.SA.R.4.2B	12-14-15																	
S.IB.R.1.1A, S.IB.R.1.1B	12-14-15																	
S.IB.R.1.2A, S.IB.R.1.2B	12-14-15																	
S.IB.R.2.1A, S.IB.R.2.1B	12-14-15																	
S.IB.R.2.2A, S.IB.R.2.2B	12-14-15																	
S.IA.R.2.1A, S.IA.R.2.1B	12-14-15																	
S.IA.R.2.2A, S.IA.R.2.2B	12-14-15																	
S.IA.R.2.3	12-14-15																	
S.2A.R.2.7	12-14-15																	

TAT Requested: Normal: _____ Rush: _____ Specify: _____ (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

* Each line is 1 sample - A 500ml, B 500ml

Sample Collection Time Zone
 Eastern Pacific
 Central Other _____
 Mountain

Chain of Custody Signatures

Sample Shipping and Delivery Details

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1			1		
2			2		
3			3		

GEL PM: _____
 Method of Shipment: _____ Date Shipped: _____
 Airbill #: _____
 Airbill #: _____

- 1.) Chain of Custody Number - Client Determined
- 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
- 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
- 4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc. Liquid, SO=Soil, SD=Soil/Dust, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, T=Wipe, U=Urine, F=Feces, N=Not
- 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B -3, 6010B/7470A - 1).
- 6.) Preservative Type: HA = Hydrochloric Acid, NA = Nitric Acid, NH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank

For Lab Receiving Use Only

Custody Seal Intact?
 YES NO

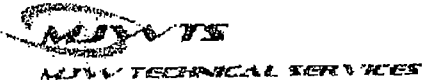
Cooler Temp:
 C

WHITE = LABORATORY

YELLOW = FILE

PINK = CLIENT

App E –
Sub-Area 5.1 - Instrument Field Sheets



Rev 1 10/18/15

Instrument Field Response Check Log

1. Instrument Information

Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
 Detector 1: Make/Model: LUDLUM 44-10 Serial No. FR111127
 Bicron MicroRem Meter: Serial No. A224U Cal. Due Date: 8/4/16

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 116 Activity: <0.1 units: µCi Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 22926 net cpm -20% 15284
 Source 2 Isotope: Cs-137 Serial No.: 87F13-48 Activity: 0.02 units: µCi Assay Date: 1/20/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13375 net cpm -20% 8919

3. Technician/Worker Performing Checks:

Name: STEVE KINSMAN Title: RET Date: 12/14/15 Time: 0800

4. Site or Location:

Site/Job: S1 Location Description: WOODS
 GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

Instrument Field Response*					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1	7642	1	19887	Y	X	Y	0815	60.4	Th232 SK
Ratemeter	1	7642	1	11368	Y	Y	Y	0815	60.4	Cs137 SK
Ratemeter	1	7797	1	20369	Y	Y	Y	1230	69.8	Th232 SK
Ratemeter	1	7797	1	11539	Y	Y	Y	1230	69.8	Cs137 SK
Ratemeter	1	7156	1	19588	Y	Y	Y	1430	68.6	Th232 SK
Ratemeter	1	7156	1	10489	Y	Y	Y	1430	68.6	Cs137 SK
Bicron	NA	6	NA	18	Y	Y	Y	0815	60.4	Th232 SK
Bicron	NA	6	NA	18	Y	Y	Y	1230	69.8	Th232 SK
Bicron	NA	8	NA	18	Y	Y	Y	1430	68.6	Th232 SK

- Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate averages significantly, perform additional counts to evaluate instrument stability.



Instrument Field Response Check Log

1. Instrument Information¹

Ratemeter: Make/Model: Ludlum 224-2 Serial No. 200098 Cal. Due Date: 09/01/16
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
 Bicron MicroRem Meter: Serial No. _____ Cal. Due Date: _____

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 0.1 units: ALI Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 53798 net cpm -20% 35866
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: ALI Assay Date: NA
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13273 net cpm -20% 8849

3. Technician/Worker Performing Checks:

Name: J. Edwards Title: RCT Date: 12/4/15 Time: 0811

4. Site or Location:

Site/Job: SED Location Description: parking lot
 GPS Coordinates (when required): X-Coord: N 42° 32' 27.774" Y-Coord: W 78° 59' 50.396"

Instrument Field Response ²					Use Acceptance Criteria					Remarks
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: Inst. Condition, etc.)
Ratemeter	1min	8827 cpm	1min	45970 cpm	Y	Y	Y	0820	57.4°	Th-232 JE
Ratemeter			1min	10664 cpm	Y	Y	Y	0823	57.4°	Cs-137 JE
Ratemeter	1min	8646 cpm	1min	45597 cpm	Y	Y	Y	1059	62.8°	Th-232 JE
Ratemeter			1min	10887 cpm	Y	Y	Y	1103	62.8°	Cs-137 JE
Ratemeter	1min	8852 cpm	1min	44782 cpm	Y	Y	Y	1444	65.2°	Th-232 JE
Ratemeter			1min	9941 cpm	Y	Y	Y	1448	65.2°	Cs-137 JE
Bicron	NA	6 uRem/hr	NA	35 uRem/hr	Y	Y	Y	1101	62.9°	Th-232 JE
Bicron	NA	7 uRem/hr	NA	410 uRem/hr	Y	Y	Y	1434	65.2°	Th-232 JE
Bicron	NA		NA							

1. Instrument designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
 2. Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

Instrument Field Response Check Log

1. Instrument Information¹

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 200098 Cal. Due Date: 09/01/16
 Detector 1: Make/Model: Ludlum 44-10 Serial No. PR112642
 Bicron MicroRem Meter: Serial No. _____ Cal. Due Date: _____

2. Check Source Information:

Source 1 Isotope: Th-232 Serial No.: 111 Activity: 200 units: uCi Assay Date: 12/30/10
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 55798 net cpm -20% 35866
 Source 2 Isotope: Cs-137 Serial No.: 119E23-12 Activity: 0.02 units: uCi Assay Date: _____
 Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% 13273 net cpm -20% 8549

3. Technician/Worker Performing Checks:

Name: J. E. J. Woods Title: RCT Date: 12/16/15 Time: 0824

4. Site or Location:

Site/Job: Area 51 Location Description: woods
 GPS Coordinates (when required): X-Coord: N 42° 30' 45.446" Y-Coord: W 78° 58' 15.324"

Instrument Field Response ²					Use Acceptance Criteria				Remarks	
Meter	Bkg Cnt Time	Bkg Counts (cpm) or uRem/hr	Source Cnt Time	Source Response (gross cpm or uRem/hr)	+/- 20% source gross cpm or uRem/hr (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (°F)	Initials and Comments (add'l info: inst. Condition, etc.)
Ratemeter	1 min	5149 cpm	1 min	44662 cpm	Y	Y	Y	0826	39.7°	Th-232 JE
Ratemeter			1 min	10097 cpm	Y	Y	Y	0831	39.8°	Cs-137 JE
Ratemeter	1 min	5459	1 min	44240 cpm	Y	Y	Y	1135	46.2°	Th-232 JE
Ratemeter			1 min	10365 cpm	Y	Y	Y	1140	46.2°	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							

- Instrument-designated check source is listed on calibration sticker. Record check source response (net cpm) prior to field deployment for all check sources being used.
- Source and Background count rate should be determined from the average of three static counts at the same location. Repeat counts should be within 20%. If count rate diverges significantly, perform additional counts to evaluate instrument stability

App E –
Sub-Area 5.1 - Sample Data Sheets



SAMPLE LOCATION DATA SHEET

Date: 12-16-15 Project: NYSERDA Name: Teri Brown

Weather: part, cloudy, 40°F

1. Sample Area (SA):

SA Designation: 5.1A Description: Woods
 SA Origin Location: _____ Coord. System: _____
 SA Land Mark Description: _____ Coord: _____

2. Sample Location Data:

Sample Area ID: 5.1A.R.1 Matrix: Soil

Location Coord: N 42° 31' 18.45" W 78° 58' 27.36"

Alternate Location Measurements (distance from SA origin and Local Coord.)

X Dist. from Origin (0,0) N/A Y Dist. from Origin: N/A

Site Sketch Attached (Yes) (NO)

Sample Location Description: woods, young trees, very light brush, leaves

Canopy Type: Open Land Use: Hiking Soil Moisture (Wet, dry, etc.): Dry

3. Location Radiation Readings:

Count time (min)	2x2 NaI (cpm)		Bicron (uRem/hr)		Notes
	1 cm	1m	1 cm	1m	
1	6731	6189	5	5	Bicron-LUDLUM 2241-2 Serial # 262737 cal due 9/2/16
1	6790	6161			2x2-LUDLUM 44-10 Serial #PR111127 #A2240 cal due 8/4/16

4. Sample Information:

Sample Area ID: 5.1A.R.1.1-6

Description by Depth:

Depth Interval (cm)	Soil Type (Org, clay, sand, etc.)	Soil Color	Sample ID	Sampling Description (Surface litter type/depth, sample depth retention, refusal, stone or rock, topography, erosion features)
0-15	Soil	Brown	5.1A.R.1.1	lomy, small roots
15-30	Soil	light brown	5.1A.R.1.2	small roots
30-60	Soil/rocks	light brown	5.1A.R.1.3	rocks, small # of rocks
60-100	Soil/rocks	light brown	5.1A.R.1.4	rocks, sandy @ 90cm
0-15	Soil	Brown	5.1A.R.1.5	lomy, small roots
60-100	Soil/rocks	light brown	5.1A.R.1.6	rocks, sandy @ 90cm

Sample Recorded on Laboratory COC form and Container Labeled: (Y) (N)



SAMPLE LOCATION DATA SHEET

Date: 12-14-15 Project: NYSERDA Name: Toni Brown

Weather: cloudy, 60°F, light rain

1. Sample Area (SA):

SA Designation: S.1A Description: woods
 SA Origin Location: _____ Coord. System: _____
 SA Land Mark Description: _____ Coord: _____

2. Sample Location Data:

Sample Area ID: S.1A.R.2 Matrix: Soil

Location Coord: N 42° 31' 17.85" W 78° 58' 27.30"

Alternate Location Measurements (distance from SA origin and Local Coord.)

X Dist from Origin (0,0) N/A Y Dist. from Origin: N/A

Site Sketch Attached (Yes) (NO)

Sample Location Description: woods, very light brush, leaves

Canopy Type: Open Land Use: Hiking Soil Moisture (Wet, dry, etc.): Dry

3. Location Radiation Readings:

2x2 NaI (cpm)			Bicron (uRem/hr)		Notes
Count time (min)	1 cm	1m	1 cm	1m	
1	12948	6589	8	7	Bicron - LUDLUM 2241-2 Serial # 2162737 Cal due 9/2/16
1	6825	6339			2x2 - LUDLUM 44-10 Serial # PR111127 #A2240 Cal due 8/4/16

4. Sample Information:

Sample Area ID: S.1A.R.2.1-2

Description by Depth:

Depth Interval (cm)	Soil Type (Org; clay; sand, etc.)	Soil Color	Sample ID	Sampling Description (Surface litter type/depth, sample depth retention, refusal, stone or rock, topography, erosion features)
0-15	Soil	Brown	S.1A.R.2.1	loney, rocks, roots
15-30	Soil	Light Brown	S.1A.R.2.2	roots

Sample Recorded on Laboratory COC form and Container Labeled: (Y) (N)



SAMPLE LOCATION DATA SHEET

Date: 12-14-15 Project: NYSERDA Name: Toni Brown

Weather: calm, cloudy, 60°F

1. Sample Area (SA):

SA Designation: 5.1B Description: Woods
 SA Origin Location: _____ Coord. System: _____
 SA Land Mark Description: _____ Coord: _____

2. Sample Location Data:

Sample Area ID: 5.1B.R.1 Matrix: Soil
 Location Coord: N 42° 31' 18.51" W 78° 58' 23.66"

Alternate Location Measurements (distance from SA origin and Local Coord.)
 X Dist. from Origin (0,0) N/A Y Dist. from Origin: N/A

Site Sketch Attached (Yes) (NO)

Sample Location Description: trees, leaves, #100 ft behind houses

Canopy Type: Open Land Use: Hiking Soil Moisture (Wet, dry, etc.): Dry

3. Location Radiation Readings:

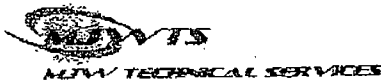
2x2 NaI (cpm)			Bicron (uRem/hr)		Notes
Count time (min)	1 cm	1m	1 cm	1m	
1	6478	6170	8	7	Bicron - LUDLUM 2241-2 Serial # 262787 Cal due 9/2/16
1	4626	6046			2x2 - LUDLUM 44-10 Serial #PR11127 #A2240 Cal due 8/4/16

4. Sample Information: Sample Area ID: 5.1B.R.1.1-2

Description by Depth:

Depth Interval (cm)	Soil Type (Org; clay; sand, etc.)	Soil Color	Sample ID	Sampling Description (Surface litter type/depth, sample depth retention, refusal, stone or rock, topography, erosion features)
0-15	soil	Brown	5.1B.R.1.1	lumpy, small roots, rocks
15-30	soil	1 1/2" Brown	5.1B.R.1.2	roots, rocks

Sample Recorded on Laboratory COC form and Container Labeled: (Y) (N)



SAMPLE LOCATION DATA SHEET

Date: 12-14-15 Project: NYSERDA Name: Tari Brown

Weather: calm, cloudy, 60°

1. Sample Area (SA):

SA Designation: 5.13 Description: Woods
 SA Origin Location: _____ Coord. System: _____
 SA Land Mark Description: _____ Coord: _____

2. Sample Location Data:

Sample Area ID: 5.13.R.2 Matrix: Soil
 Location Coord: N 42° 31' 17.59" W 78° 58' 23.68"

Alternate Location Measurements (distance from SA origin and Local Coord.)
 X Dist. from Origin (0,0) N/A Y Dist. from Origin: N/A

Site Sketch Attached (Yes) (NO)

Sample Location Description: light brush pickets, young trees, leaves, 100ft behind
houses

Canopy Type: Open Land Use: Hiking Soil Moisture (Wet, dry, etc.): Dry

3. Location Radiation Readings:

2x2 NaI (cpm)			Bicron (uRem/hr)		Notes
Count time (min)	1 cm	1m	1 cm	1m	
	6764	6455	8	7	Bicron - LUDLUM 2241-2 Serial # 262737 Cal due 9/2/16
	66630	6418			2x2 - LUDLUM 44-10 Serial # PR11127 #A2240 Cal due 8/4/16

4. Sample Information:

Sample Area ID: 5.13.R.2.1-2

Description by Depth:

Depth Interval (cm)	Soil Type (Org; clay; sand, etc.)	Soil Color	Sample ID	Sampling Description (Surface litter type/depth, sample depth retention, refusal, stone or rock, topography, erosion features)
0-15	Soil	Brown	5.13.R.2.1	Many small roots
15-30	Soil	Brown	5.13.R.2.2	Small roots, rocks

Sample Recorded on Laboratory COC form and Container Labeled: (Y) (N)

App E –
Sub-Area 5.1 - Static Surveys

AREA 5.1A

Date		Elevation				Coordinates	
Collected	Sample	0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-16-15	5.1A R 1 . 1	X				42°31'18.49"N	78°58'27.36"W
12-16-15	5.1A R 1 . 2		X				
12-16-15	5.1A R 1 . 3			X			
12-16-15	5.1A R 1 . 4				X		
12-16-15	5.1A R 1 . 5	X					
12-16-15	5.1A R 1 . 6				X		
12-14-15	5.1A R 2 . 1	X				42°31'17.85"N	78°58'27.30"W
12-14-15	5.1A R 2 . 2		X				

AREA 5.1B

Date		Elevation				Coordinates	
Collected	Sample	0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-14-15	5.1B R 1 . 1	X				42°31'18.51"N	78°58'23.66"W
12-14-15	5.1B R 1 . 2		X				
12-14-15	5.1B R 2 . 1	X				42°31'17.94"N	78°58'23.68"W
12-14-15	5.1B R 2 . 2		X				