

App E –  
Sub-Area 5.6 - COC Field Forms

Page: _____ of _____ Project #: _____ GEL Quote #: _____ COC Number: _____ PO Number: _____		<b>GEL Chain of Custody and Analytical Request</b> <b>**See www.gel.com for GEL's Sample Acceptance SOP**</b>		GEL Laboratories, LLC. 2040 Savage Road Charleston, SC 29407 Phone: (843) 556-8171 Fax: (843) 766-1178	
Client Name: _____ Phone #: _____		GEL Work Order Number: _____			
Project/Site Name: _____ Fax #: _____		Sample Analysis Requested <sup>(5)</sup> (Fill in the number of containers for each test)			
Address: _____		Should this sample be considered _____		Preservative Type (6) _____	
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 <small>(mm-dd-yy)</small>	Time Collected <small>(hh:mm)</small>	QC Code <sup>(4)</sup>	Field Filtered <sup>(3)</sup>	Sample Matrix <sup>(5)</sup>
5.6A.R.2.1A, 5.6A.R.2.1B	12-14-15				
5.6A.R.2.2A, 5.6A.R.2.2B	12-14-15				
5.6A.R.3.1A, 5.6A.R.3.1B	12-14-15				
5.6A.R.3.2A, 5.6A.R.3.2B	12-14-15				
5.6A.R.4.1A, 5.6A.R.4.1B	12-14-15				
5.6A.R.4.2A, 5.6A.R.4.2B	12-14-15				
5.6A.R.2.1A, 5.6A.R.2.1B	12-14-15				
5.6A.R.2.2A, 5.6A.R.2.2B	12-14-15				
5.6A.R.3.1A, 5.6A.R.3.1B	12-14-15				
5.6A.R.3.2A, 5.6A.R.3.2B	12-14-15				
TAT Requested: Normal / Rush / Specify: _____ (Subject to Sampling)		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.					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 _____		GEL PM: _____		
1	1		Method of Shipment: _____ Date Shipped: _____		
2	2		Airbill #: _____		
3	3		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 = Mine Liquid, SO = Soil, SD = Sediment, SI = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Pipe, U = Urine, F = Fecal, N = N/A 5.) Sample Analysis Requested: Analytical method requested (i.e. 8160B, 6010B/7470A) and number of containers provided for each (i.e. 2260B - 3, 6010B/7470A - 1). 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = 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					

Page: _____ of _____ Project #: _____ GEL Quote #: _____ COC Number (1): _____ PO Number: _____		<b>GEL Chain of Custody and Analytical Request</b> **See www.gel.com for GEL's Sample Acceptance SOP** <b>GEL Work Order Number:</b> _____		GEL Laboratories, LLC 2040 Savage Road Charleston, SC 29407 Phone: (843) 556-8171 Fax: (843) 766-1178				
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) _____ Comments: Note: extra sample is required for sample specific QC				
Address: _____		Send Results To: _____						
Collected by: _____		_____						
Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hh:mm)	QC Code (1)	Field Filtered (1)	Sample Matrix (1)	Rad. React. (1)	TSC A Regulated (1)	Der. of (1)
* For Composites - indicate start and stop date/time								
5.6A.R.1.1	12/17/15							
5.6A.R.1.2	12/17/15							
5.6A.R.1.3	12/17/15							
5.6A.R.1.4	12/17/15							
5.6A.R.1.5	12/17/15							
5.6A.R.1.6	12/17/15							
6.5A.R.1.1	12/17/15							
5.5A.R.1.2	12/17/15							
5.5A.R.1.3	12/17/15							
5.5A.R.1.4	12/17/15							
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						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	GEL PM:		
1			1			Method of Shipment: _____ Date Shipped: _____		
2			2			Airbill #: _____		
3			3			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 = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 8010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 8010B/7470A - 1). 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = 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 5.6 - Field Survey Checklists

## The MJW Companies

### GPS Field Survey Checklist

The following field survey checklist is used once the survey team has walked to the location that they will begin a GPS survey. This checklist is intended to verify none of the cables or settings changed or cables came loose between the initial setup location and the field survey location. Complete step 9 once the current walkover segment is complete.

1. JP Verify the Ludlum Meter is in Rate mode
2. JP Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
3. JP Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. JP Verify that Antenna states "External"
5. JP Set Menu 1 to "Data"
6. JP Name a file to start the current survey and start the data logger

Filename: 171105 5:00 A

12715 20:00

7. JP Set Menu 1 to "Status" and Menu 2 to "Sensor"
8. JP Verify that the sensor field is reading the same as the display on the Ludlum
9. JP When finished, set Menu 1 to "Data" and close the current file.

Name: J. H. H. B. Date: 12/1/18

## The MJW Companies

### GPS Initial Setup Checklist

1. ☒ Complete source check of Ludlum Meter
2. ☒ Power off Ludlum Meter
3. ☒ Verify Trimble is shutdown (not in suspend mode)
4. ☒ Connect the Serial Interface Adapter (SIA) to the Trimble Unit
5. ☒ Connect the Serial cable to the Ludlum Meter
6. ☒ Connect the Serial cable to the Trimble SIA
7. ☒ Connect external GPS antenna cable to the Trimble
8. ☒ Power on Ludlum Meter to Rate mode
9. ☒ Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
10. ☒ Power on the Trimble and wait for it to completely boot
11. ☒ Launch Terrasync and wait for it to load and acquire satellites
12. ☒ Set Menu 1 to "Status" and Menu 2 to "Receiver"
13. ☒ Verify that Antenna states "External"
14. ☒ Set Menu 1 to "Data"
15. ☒ Name a test file and start the data logger
16. ☒ Set Menu 1 to "Status" and Menu 2 to "Sensor"
17. ☒ Verify that the sensor field is reading the same as the display on the Ludlum
18. ☒ Set Menu 1 to "Data" and close the current file.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

12.17.15  
08:41 AM

App E-  
Sub-Area 5.6- Instrument Field Sheets

**Instrument Field Response Check Log**

**1. Instrument Information<sup>1</sup>**

Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 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: 20.1 units: NCI Assay Date: 12/30/10  
 Response Acceptance Range (+/-20%): uRem/hr +20% \_\_\_\_\_ uRem/hr -20% \_\_\_\_\_ net cpm + 20% 5348 net cpm -20% 35866  
 Source 2 Isotope: CS-137 Serial No.: 119E23-12 Activity: 0.02 units: NCI 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: 12/17/15 Time: 0815

**4. Site or Location:**

Site/Job: Area 5.5-5.6 Location Description: woods  
 GPS Coordinates (when required): X-Coord: \_\_\_\_\_ Y-Coord: \_\_\_\_\_

Instrument Field Response <sup>2</sup>					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	9274 cpm	1 min	44808 cpm	Y	Y	Y	0819	49.4°	Th-232 DE
Ratemeter	"	"	1 min	1109 cpm	Y	Y	Y	0823	49.4°	CS-137 DE
Ratemeter	1 min	9433 cpm	1 min	46391 cpm	Y	Y	Y	1033	50.1°	Th-232 DE
Ratemeter	"	"	1 min	11440 cpm	Y	Y	Y	1040	50.1°	CS-137 DE
Ratemeter	1 min	7005 cpm	1 min	44433 cpm	Y	Y	Y	1400	43.5°	Th-232 TB
Ratemeter	"	"	1 min	9743 cpm	Y	Y	Y	1400	43.5°	CS-137 TB
Bicron	NA	5 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1035	50.3°	Th-232 DE
Bicron	NA	N/A	NA	N/A	Y	Y	Y			N/A
Bicron	NA	5 uRem/hr	NA	30 uRem/hr	Y	Y	Y	1400	13.5°	Th-232 TB

- 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 5.6 - Sample Data Sheets

**SAMPLE LOCATION DATA SHEET**

Date: 12-17-15 Project: NYSERDA Name: Brown

Weather: Upper 40's, Drizzle

**1. Sample Area (SA):**

SA Designation: 5.6A Description: Wooded lot  
SA Origin Location: \_\_\_\_\_ Coord. System: \_\_\_\_\_  
SA Land Mark Description: \_\_\_\_\_ Coord: \_\_\_\_\_

**2. Sample Location Data:**

Sample Area ID: 5.6A.R.1 Matrix: Soil

Location Coord: N 42° 31' 21.72" W 78° 58' 41.08"

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: bottom of small gully, flat ground, some trees dead  
Canopy Type: partially open Land Use: hiking, etc. Soil Moisture (Wet, dry, etc.): damp leaves (dead)

**3. Location Radiation Readings:**

2x2 NaI (cpm)			Bicron (uRem/hr)		Notes
Count time (min)	1 cm	1m	1 cm	1m	
1	7430	7483	5	10	Bicron WDW 2241-2 serial # 206098 cal due 09/01/16
1	7471	7566			2x2: WDW 44-10 serial # FR 112642 #
					Bicron cal due 6/15/16 MicroKam #1487

**4. Sample Information:**

Sample Area ID: 5.6A.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	topsoil	dk brown	5.6A.R.1.1	Few roots
15-30	topsoil	grey	5.6A.R.1.2	more roots
30-60	topsoil	brown	5.6A.R.1.3	large roots
60-100	topsoil/sand	H. brown	5.6A.R.1.4	large roots
0-15	topsoil	dk brown	5.6A.R.1.5	Few roots
60-100	topsoil/sand	H. brown	5.6A.R.1.6	large roots

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, Partly cloudy, 60°

**1. Sample Area (SA):**

SA Designation: 5.6 Description: Woods  
SA Origin Location: \_\_\_\_\_ Coord. System: \_\_\_\_\_  
SA Land Mark Description: \_\_\_\_\_ Coord: \_\_\_\_\_

**2. Sample Location Data:**

Sample Area ID: 5.6 R.2 Matrix: Soil

Location Coord: N 42° 31' 21.37" W 78° 58' 41.30"

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: Young trees, 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	6034	5968	5	4	Bicron - LUDLUM 2241-2 Serial # 262737 cal due 9/2/16
1	6105	5933			2x2 - LUDLUM 44-10 Serial # PR111127 #A2240 cal due 8/4/16

**4. Sample Information:**

Sample Area ID: 5.6A.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	5.6A.R.2.1	Lowly, small roots
15-30	Soil	Brown	5.6A.R.2.2	roots, rocks

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

## SAMPLE LOCATION DATA SHEET

 Date: 12-14-15 Project: NYSEDA Name: Tom Brown

 Weather: calm, partly cloudy, 60°

## 1. Sample Area (SA):

 SA Designation: S.6 Description: Woods  
 SA Origin Location: \_\_\_\_\_ Coord. System: \_\_\_\_\_  
 SA Land Mark Description: \_\_\_\_\_ Coord: \_\_\_\_\_

## 2. Sample Location Data:

 Sample Area ID: S.6.3 Matrix: Soil

 Location Coord: N 42° 31' 21.18" W 78° 58' 40.94"

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, above ravine, 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	6191	5707	5	5	Bicron - LUDLUM 2241-2 Serial # 262737 cal due 9/2/16
1	6320	5741			2x2 - LUDLUM 44-10 Serial # PR11127 #A2240 cal due 8/4/16

## 4. Sample Information:

 Sample Area ID: S.6A.R.3.1-2

## 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.6A.R.3.1	Loose soil, roots
15-30	Soil	light brown	S.6A.R.3.2	roots

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

10/20/15



MVT TECHNICAL SERVICES

## SAMPLE LOCATION DATA SHEET

Date: 12-14-15 Project: NYSERDA Name: Ton BrownWeather: calm, partly cloudy, 60°

## 1. Sample Area (SA):

SA Designation: S.6 Description: Woods  
 SA Origin Location: \_\_\_\_\_ Coord. System: \_\_\_\_\_  
 SA Land Mark Description: \_\_\_\_\_ Coord: \_\_\_\_\_

## 2. Sample Location Data:

Sample Area ID: S.6.R.4 Matrix: SoilLocation Coord: N 42° 51' 21.45" W 78° 58' 40.01"

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

X Dist. from Origin (0,0) N/A Y Dist. from Origin: N/ASite Sketch Attached (Yes) ☒ (NO)Sample Location Description: trees, leaves above ravine

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

## 3. Location Radiation Readings:

2x2 NaI (cpm)			Bicron (uRem/hr)		Notes
Count time (min)	1 cm	1m	1 cm	1m	
1	6145	5962	5	4	Bicron - LUDLUM 2241-2 Serial # 262737 Cal due 9/2/16
1	6264	6907			2x2 - LUDLUM 44-10 Serial # PR111127 #A224U Cal due 8/4/16

## 4. Sample Information:

Sample Area ID: S.6A.R.4.1-2

## 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.6A.R.4.1	Loose, small roots
15-30	Soil	Light Brown	S.6A.R.4.2	Small roots

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

10/20/15