App E –

Sub-Area 3.2 - COC Forms

Field Copy

Page: 1 of
Project #: ~~N/A~~ N/A
GEL Quote #: N/A
COC Number (1): NYSERDA-1
PO Number: N/A

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: MJW Technical Services Phone #: (716) 372-5300

Project/Site Name: NYSERDA Fax #: (716) 372-5307

Address: 243 ROOT ST. SUITE 100, CLEAN NY 14760

Collected by: Tom Brown Send Results To: ~~CORY~~ SKYLER LOSEY

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Number of	<-- Preservative Type (6)	Comments
3.2.2.R.1	10-16-15									Note: extra sample is required for sample specific QC
3.2.2.R.2	10-16-15									
3.2.3.R.1	10-16-15									
3.2.3.R.2	10-16-15									

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, Central, Mountain, Pacific, Other ___

Chain of Custody Signatures

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

Sample Shipping and Delivery Details

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=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, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 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

Field Copy

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 Work Order Number:

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

Client Name: Phone #:

Project/Site Name: Fax #:

Address:

Collected by: Send Results To:

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Number of	<-- Preservative Type (6)	Comments Note: extra sample is required for sample specific QC
3.2.1.R.1	10-16-15	15:05	N/A	N/A	N/A	N	N	1		
3.2.1.R.2	10-16-15	14:05	NA	NA	N/A	N	N	1		
3.2.1.R.5	10-16-15	14:05	FD	NA	NA	N	N	1		
3.2.1.R.6	10-16-15	15:52	EB							

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

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

Sample Shipping and Delivery Details

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=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=N

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, 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

COPY

Page: 2 of 2
Project #: N/A
GEL Quote #: N/A
COC Number (1): NYSERDA #1
PO Number: N/A

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: | Phone #:

Project/Site Name: | Fax #:

Address:

Collected by: | Send Results To:

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

Sample ID *For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Number of	<-- Preservative Type (6)	Comments
3.2.4.R.1	10-19-15	10:00	N	N/A	N/A	N	N	1		Note: extra sample is required for sample specific QC
3.2.4.R.2	10-19-15	10:10	N	N/A	N/A	N	N	1		
3.2.4.R.3	10-19-15	10:35	N	N/A	N/A	N	N	1		
3.2.4.R.4	10-19-15	14:10	N	N/A	N/A	N	N	1		
3.2.4.R.5	10-19-15	14:10	FD	N/A	N/A	N	N	1		
3.1.7.R.1	10-19-15	14:50	N	N/A	N/A	N	N	1		
3.1.7.R.2	10-19-15	15:00	N	N/A	N/A	N	N	1		
3.1.8.R.1	10/19/15	15:20	N	N/A	N/A	N	N	1		
3.1.8.R.2	10-19-15	15:25	N	N/A	N/A	N	N	1		
3.1.8.R.6	10-19-15	16:15	~~EB~~	N/A	N/A	N	N	1		

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) | Fax Results: Yes / No | Circle Deliverable: COA / 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

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

Sample Shipping and Delivery Details

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
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4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Miscliquid, 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, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 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

App E –

Sub-Area 3.2 - Instrument Field Sheets

MJW TECHNICAL SERVICES

Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: Ludlum 2241-2 Serial No. 206098 Cal. Due Date: 9/1/16
   - 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: µCi 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: µCi 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: 10/15/15 Time: 1005

4. **Site or Location:** Site/Job: Area 3.2 Location Description: Farm
   GPS Coordinates (when required): X-Coord: NA Y-Coord: NA

	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	9431 cpm	1 min	44832 cpm	Y	Y	Y	1045	55.7	Th-232 JE
Ratemeter			1 min	10972 cpm	Y	Y	Y	1058	56.3	Cs-137 JE
Ratemeter										
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							
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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: BICRON MICRO REM Serial No. A224U Cal. Due Date: 8/4/16
   - Detector 1: Make/Model: INTERNAL Serial No. N/A
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: <0.1 units: uCi Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20% _____
   - Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20% _____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: _____ Date: 10/16/15 Time: 0957
4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: N 42° 28' 50.7" Y-Coord: W078° 40' 27.2"

Instrument Field Response[2]					Use Acceptance Criteria					Remarks
Det. No. (1 / 2)	BKg Cnt Time	~~Bkg (avg of 3) (cpm)~~ uR/HR	Source Cnt Time	~~Source Response (cpm - bkg) Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l info: temperature, Inst. Condition, etc.)
		5		17 uR/HR		Y	Y	0957	48.2	SK

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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
   - Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR#111827
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th 232 Serial No.: 116 Activity: <0.1 units: uci Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20% _____
   - Source 2 Isotope: Cs137 Serial No.: 87E13-48 Activity: .02 units: uci Assay Date: 1/20/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20% _____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: _____ Date: 10/16/15 Time: 1000
4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord:_____ Y-Coord:_____

SOURCE Instrument Field Response[2]					Use Acceptance Criteria					Remarks
~~Det:~~ No. (1 / 2)	BKg Cnt Time	Bkg (avg of 3) (cpm)	Source Cnt Time	Source Response (cpm - bkg) Net cpm	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l Info: temperature, Inst. Condition, etc.)
TH232	1 MIN	7820	1 MIN.	19105		Y	Y	1000	48.2	SK
Cs137	1 MIN	7820	1 MIN.	11146		Y	Y	1005	48.2	SK

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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: BICRON MICROREM Serial No. A224U Cal. Due Date: 8/4/16
   - Detector 1: Make/Model: INTERNAL Serial No. N/A
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: <0.1 units: uCi Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20%_____
   - Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20%_____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: _____ Date: 10/16/15 Time: 1400
4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord:_____ Y-Coord:_____

Instrument Field Response[2]					Use Acceptance Criteria					Remarks
Det. No. (1 / 2)	BKg Cnt Time	Bkg ~~(avg of 3)~~ ~~(cpm)~~ uR/Hr	Source Cnt Time	Source Response ~~(cpm - bkg)~~ ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l Info: temperature, Inst. Condition, etc.)
		6		18 mR/Hr		Y	Y	1400	53.6	

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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. Instrument Information[1]
   - Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
   - Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR111127
   - Detector 2: Make/Model: _____ Serial No. _____
2. Check Source Information:
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: ≤0.1 units: uci Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20% _____
   - Source 2 Isotope: Cs137 Serial No.: 87E13-48 Activity: .02 units: uci Assay Date: 1/20/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20% _____
3. Technician/Worker Performing Checks:
   Name: STEVE KINSMAN Title: _____ Date: 10/16/15 Time: 1410
4. Site or Location: Site/Job: 3.2 Location Description: _____
   GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

SOURCE	Instrument Field Response[2] GROSS CTS				Use Acceptance Criteria					Remarks
~~Det.~~ No. (1 / 2)	BKg Cnt Time	Bkg (avg of 3) (cpm)	Source Cnt Time	Source Response (~~cpm - bkg~~) ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l info: temperature, inst. Condition, etc.)
Th232	1 MIN	7621	1 MIN	19835		Y	Y	1410	53.6	SK
Cs137	1 MIN	7621	1 MIN	11161		Y	Y	1415	53.6	SK

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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
   - Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR111127
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th 232 Serial No.: 116 Activity: 40.1 units: uci Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20%_____
   - Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci Assay Date: 1/20/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20%_____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: _____ Date: 10/16/15 Time: 1515
4. **Site or Location:** Site/Job:_____ Location Description:_____
   GPS Coordinates (when required): X-Coord:_____ Y-Coord:_____

SOURCE Instrument Field Response[2] GROSS CTS					Use Acceptance Criteria					Remarks
~~Det.~~ No. (1 / 2)	BKg Cnt Time	Bkg (avg of 3) (cpm)	Source Cnt Time	Source Response (~~cpm - bkg~~) Net cpm	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l Info: temperature, inst. Condition, etc.)
Th232		7496		19694		Y	Y	1515	53-6	
Cs137		7496		16845		Y	Y	1520	53-6	

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

MJW TECHNICAL SERVICES

Instrument Field Response Check Log

1. **Instrument Information**[1]
   - Ratemeter: Make/Model: BICRON MICRO REM Serial No. A2244 Cal. Due Date: 8/4/16
   - Detector 1: Make/Model: INTERNAL Serial No. _____
   - Detector 2: Make/Model: _____ Serial No. _____
2. **Check Source Information:**
   - Source 1 Isotope: Th232 Serial No.: 116 Activity: 0.1 units: uci Assay Date: 12/30/10
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20%_____
   - Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
     Instrument Response Acceptance Range (source cpm - bkg +/-20%): net cpm + 20%_____ net cpm -20%_____
3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: _____ Date: 10/16/15 Time: 1515
4. **Site or Location:** Site/Job: 3-2 Location Description: FARM
   GPS Coordinates (when required): X-Coord:_____ Y-Coord:_____

Instrument Field Response[2]					Use Acceptance Criteria					Remarks
Det. No. (1 / 2)	BKg Cnt Time	Bkg ~~(avg of 3)~~ (~~cpm~~) uR/Hr	Source Cnt Time	Source Response (~~cpm - bkg~~) / uR/Hr ~~Net cpm~~	+/- 20% of source Net cpm (Y/N)	Inst. Calib. current (Y/N)	Battery Check (Y/N)	Time Of check	Ambient Temp. (F)	Initials and Comments (add'l info: temperature, inst. Condition, etc.)
		7		17		Y	Y	1515	56.3	

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MJW TECHNICAL SERVICES

Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: LUDLUM 2241-2 Serial No. 262737 Cal. Due Date: 9/2/16
   Detector 1: Make/Model: LUDLUM 44-10 Serial No. PR111127
   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: uci Assay Date: 12/30/10
   Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20%_____ net cpm -20% _____

   Source 2 Isotope: Cs 137 Serial No.: 87E13-48 Activity: .02 units: uci Assay Date: 1/20/10
   Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20%_____ net cpm -20% _____

3. **Technician/Worker Performing Checks:**
   Name: STEVE KINSMAN Title: _____ Date: 10/19/15 Time: 0930

4. **Site or Location:** Site/Job: 3.2 Location Description: FARM
   GPS Coordinates (when required): X-Coord: 78.674170° Y-Coord: 42.48070°

		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	7893	1MIN	19674 cpm		Y	Y	0935	33.4	Th232
Ratemeter	1MIN	7893	1MIN	11228 cpm		Y	Y	0940	33.4	Cs137
Ratemeter	1MIN	7552	1MIN	19351 cpm		Y	Y	1325	54.5	Th232
Ratemeter	1MIN	7552	1MIN	10692 cpm		Y	Y	1325	54.5	Cs137
Bicron	NA	5 uR/HR	NA	18 uR/Hr		Y	Y	0930	33.4	
Bicron	NA	6 uR/HR	NA	17 uR/Hr		Y	Y	1320	54.5	
Bicron	NA	6 uR/HR	NA	16 uR/Hr		Y	Y		58.6	
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

MJW TECHNICAL SERVICES

Rev 1 10/18/15

Instrument Field Response Check Log

1. **Instrument Information**[1]
   Ratemeter: Make/Model: _____ Serial No. _____ Cal. Due Date: _____
   Detector 1: Make/Model: _____ Serial No. _____
   Bicron MicroRem Meter: Serial No. _____ Cal. Due Date: _____

2. **Check Source Information:**
   Source 1 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
   Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% _____ net cpm -20% _____

   Source 2 Isotope: _____ Serial No.: _____ Activity: _____ units: _____ Assay Date: _____
   Response Acceptance Range (+/-20%): uRem/hr +20% _____ uRem/hr -20% _____ net cpm + 20% _____ net cpm -20% _____

3. **Technician/Worker Performing Checks:**
   Name: _____ Title: _____ Date: 10/19/15 Time: _____

4. **Site or Location:** Site/Job: _____ Location Description: _____
   GPS Coordinates (when required): X-Coord: _____ Y-Coord: _____

	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	8854 cpm	1MIN	19517 cpm		Y	Y	1540	58.6	Th232
Ratemeter	1MIN	8854 cpm	1MIN	12422 cpm		Y	Y	1545	58.6	Cs137
Ratemeter										
Ratemeter										
Bicron	NA		NA							
Bicron	NA		NA							
Bicron	NA		NA							
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

App E –

Sub-Area 3.2 - Sample Data Sheets

MJW TECHNICAL SERVICES

SAMPLE LOCATION DATA SHEET

Date: 10-16-15 Project: NYSERDA Name: Tori Brown

Weather: cloudy, cool

1. Sample Area (SA):

SA Designation: 3.2 Description: Farmland

SA Origin Location: _____ _____ Coord. System: _____

SA Land Mark Description: Thomson corner Rd alongside Coord: N/A N/A

2. Sample Location Data:

Sample Area ID: 3.2.1 Matrix: Soil

Location Coord: N 42.48094 W-78.67410

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: Farmland, along driveway 18ft to center driveway

Canopy Type: Open Land Use: farm 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~~	~~8066~~ TB 10/16		~~TB 7~~	~~TB 5~~	TB 10/16
1	8258	7619	6	5	
1	8397	7720			

4. Sample Information:

Sample Area ID: 3.2.1.R-~~1,2,~~5 TB 10/16
1, 2, 5

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	3.2.1.R.1	N/A
15-30	Soil	brown	3.2.1.R.2	N/A
0-15	Soil	brown	3.2.1.R.5	N/A

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

MJW TECHNICAL SERVICES

SAMPLE LOCATION DATA SHEET

Date: 10-16-15 Project: NYSERDA Name: Tori Brown

Weather: Overcast, cool

1. Sample Area (SA):

SA Designation: 3.2.2 Description: Farmland

SA Origin Location: ~~78.674289~~ ~~42.481001~~ TB 10/16 Coord. System: ~~LAT LONG~~ TB 10/16

SA Land Mark Description: ~~Farmland~~ N/A TB 10/16 Coord: N/A N/A

2. Sample Location Data:

Sample Area ID: 3.2.2 Matrix: Soil

Location Coord: W78.674289 N42.481001

Alternate Location Measurements (distance from SA origin and Local Coord.) – 6 ft from fence along NW line

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

Site Sketch Attached (Yes) (NO)

Sample Location Description: Farmland

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

3. Location Radiation Readings:

2x2 NaI (cpm)			Biceron (uRem/hr)		Notes
Count time (min)	1 cm	1m	1 cm	1m	
1	8080	7617	7	5	
1	8245	7486			

4. Sample Information:

Sample Area ID: 3.2.2.R.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	3.2.2.R.1	N/A
15-30	Soil	Brown	3.2.2.R.2	N/A

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

MJW TECHNICAL SERVICES

SAMPLE LOCATION DATA SHEET

Date: 10-16-15 Project: NYSERDA Name: Tom Brown

Weather: Sunny

1. Sample Area (SA):

SA Designation: 3.2.3 JB 10/16 Description: Farmland

SA Origin Location: ~~78.12~~ JB 10/16 Coord. System: _____

SA Land Mark Description: N/A Coord: N/A N/A

2. Sample Location Data:

Sample Area ID: 3.2.3. Matrix: Soil

Location Coord: W 78.674107 N 42.748088

Alternate Location Measurements (distance from SA origin and Local Coord.) ~10 ft from driveway
X Dist. from Origin (0,0) N/A Y Dist. from Origin: N/A

Site Sketch Attached (Yes) (NO)

Sample Location Description: Farm, covered by wood pile

Canopy Type: Open Land Use: Farm 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	7651	7067	6	6	
1	7709	7081			

4. Sample Information:

Sample Area ID: 3.2.3, R.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	3.2.3.R.1	Some wood in dig/excluded in sample
15-30	Soil	Brown	3.2.3.R.2	N/A

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

MJW TECHNICAL SERVICES

SAMPLE LOCATION DATA SHEET

Date: 10-19-15 Project: NYSERDA Name: Tori Brown

Weather: Cold, sunny
Morning frost, warm afternoon

1. Sample Area (SA):

SA Designation: 3.2 Description: Farmland
SA Origin Location: _____ _____ Coord. System: _____
SA Land Mark Description: Thomson corner Rd Coord: _____ _____

2. Sample Location Data:

Sample Area ID: 3.2.4 Matrix: Soil

Location Coord: W78.674198 N 42.48095

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

Site Sketch Attached (Yes) (NO)

Sample Location Description: Farm land by wood pile

Canopy Type: OPEN Land Use: FARM 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	7777	7443	5	3	
1	7794	7429			

4. Sample Information:

Sample Area ID: 3.2.4.R.1-5

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/gravel	brown	3.2.4.R.1	Some wood chips
15-30	soil	brown	3.2.4.R.2	N/A
30-60	soil	brown	3.2.4.R.3	N/A
60-100	soil/rock	brown	3.2.4.R.4	refusal @ 70 cm (rock)
60-100	gravel	" "	3.2.4.R.5	Gravel fill

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