Inspecting ISCO Storm Water Samplers and Retrieving Samples

Effective Date: _____7/24/2017_____

Next Review Date: _____7/24/2020_____

Hazard Class: ☐ Low ☒ Moderate ☐ High/Complex
Usage Mode: ☒ Reference ☐ UET ☐ Both UET & Reference

The Responsible Manager has determined that the following organizations' review is required for initial procedure release as well as subsequent major revisions. Review documentation is contained in the Document History File.

ER-FS Operations Manager	Environmental Protection
Storm Water Subject Matter Experts	Waste Management
Storm Water Shift Operations Manager	Quality Assurance

Classification Review: ☒ Unclassified ☐ UCNI ☐ Classified

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REVISION HISTORY

Document No./Revision No.	Issue Date	Action	Description
EP-DIV-SOP-10013, R0.	05/11/2011	New document	New Document Control number assigned; Supersedes SOP-5213, R1; Revision to reflect the current order of questions in Form EP-DIV-SOP-10013-1 and allows for the recording of dates and times for initiation of sample cooling, filtration, and chemical preservation.
EP-DIV-SOP-10013, R1.	08/20/2014	Revision	Updated SOP to new format. Minor text edits. Added minor text for handling, packaging & transporting samples.
EP-SOP-10013, R0	03/02/2016	Minor Revision	Updated SOP to reflect minor changes in work flow. Added task to work order to check bottle set configuration. Removed outdated references. Naming convention change.
EP-SOP-10013, R0	05/06/2016	IPC-1	Changes to Attachment 1, Added Attachment 3, minor text revisions to update references to new format of work order form
ER-SOP-10013, R0	7/24/2017	Major Revision	Changed order of sections – electronic first. Changed attachments to reflect section changes. Updated Attachment 4, added Attachments 1, 2, and 3. Minor text revisions to reflect changes in work flow and update references to attachments. Procedure number updated.

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1.   PURPOSE

This procedure describes the process for inspecting ISCO storm water samplers and retrieving storm water samples from all locations where storm water sampling activities are conducted. This procedure applies to the storm water project technical staff and subcontractor personnel conducting activities at storm water sampler stations.

2.   SCOPE

ISCO samplers are used in a variety of applications to collect storm water runoff. Samplers may be used at Individual Permit (IP) Site Monitoring Areas (SMAs), Consent Order-driven storm water monitoring stations, environmental surveillance stations, and for other projects. ISCOs are designed to automatically collect water when the water surface is high enough to trigger an actuator to fill sample bottles. Field personnel are required to inspect the sampling station while retrieving water samples and at other intervals determined by the individual project or as directed by work orders issued by project personnel.

A LANL Project Leader is the primary person with responsibility for the steps in this procedure. Several field personnel may be appointed with responsibility for a subset of sampling stations defined as a route.

3.   PRECAUTIONS AND LIMITATIONS

This procedure is used with an approved Integrated Work Document (IWD) and/or other safety documents as required. Review IWDs for facility specific requirements, training, precautions and access controls.

If subsequent rain events occur before all sampler locations have been visited after the first rain event, finish the route to collect the first-event samples (safety permitting).

Inspections may be discontinued during periods or conditions that make Sites dangerous to worker safety or prevent personnel from safely accessing Sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, high winds, red flag conditions, and LANL operations).

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4. PREREQUISITE ACTIONS

4.1 <u>Training Prerequisites</u>

Personnel performing this procedure will be familiar with the most current versions of the following procedures:

EP-DIV-SOP-10008, Installing, Setting up, and Operating 3700 ISCO Samplers

ER-GUIDE-20292, Environmental Remediation (ER) General Field Worker Guidelines

4.2 <u>Equipment and Tools</u>

As-needed equipment includes the following:

- Copy of this procedure
- Copy of IWD
- Issued "ISCO Sampler Inspection and Sample Retrieval" Work Order
- Voltage meter
- Spare batteries (as necessary)
- Work gloves
- Shovel
- Spare tubing: tygon and Teflon®
- Plastic wire "zip" ties
- Stakes
- Rebar caps
- Hose clamps
- 2-3 pound sledgehammer
- Backpacks (if needed)
- Multipurpose hand tool
- Radio or pager (if required by Access Control)
- Cell phone (Government cell phone only in secure areas)
- Necessary access and station keys
- Government issued iPad (for electronic data collection)
- Locus Mobile Application for iPad (for electronic sample retrieval)
- Coolers with reusable ice packs or equivalent
- Expanded Site Field Maps
- Replacement sample bottles (glass and polyethylene) with lids
- Nitrile gloves
- Marker pen (permanent, waterproof)
- Ball point pen
- Zip lock bags
- Safety glasses (with side shields or wrap-around style)
- Cushioning materials for bottle transportation (bubble wrap or cardboard)

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5.   STEP-BY-STEP PROCESS DESCRIPTION

5.1   Sampler Inspection with Electronic Work Order

5.1.1   Preparing for Fieldwork

Subcontract or Project Manager

[1]   **NOTIFY** Route Lead field personnel of electronic work orders (WOs).

NOTE 1   *Receipt of an electronic version of a WO indicates that sampler inspections have been approved by the LANS Field Team Lead (FTL) or designee. Schedule work to be completed by the target date appearing on the WO(s).*

NOTE 2   *The hosted Maintenance Connection (MainConn) database system configuration used to produce WO(s) is subject to change. An example electronic version WO is provided in Attachment 1. Unless otherwise stated, all "Item #" callouts in this section refer to Attachment 1.*

NOTE 3   *The hosted MainConn database system configuration is subject to change. This will affect how sections in forms appear on hard copy and electronic versions of WO(s). Checkbox selections on the electronic version WO will appear as "Failed" and "Complete."*

[2]   **INFORM** (e.g., by e-mail) the Field Operations designee of the schedule for sampler inspection work and the associated locations up to a week (preferred) before but no later than the day before (for minor changes) to be added to the appropriate plan of the day.

[3]   **CONDUCT** pre-job briefing with field personnel.

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5.1.1   Preparing for Fieldwork (continued)

Field Personnel

[4]   **OBTAIN** any necessary additional paperwork before conducting work, including IWDs and excavation permits (if necessary).

[5]   **GATHER** the required equipment (see Section 4.2) for the work to be done:

a) Use the Safari browser on the iPad to **NAVIGATE** to mcxle.maintenanceconnection.com and **LOG INTO** the ExpressLE web application.

i. **CONFIRM** that the WO list displayed in the "My WOs" section contains the expected WO(s).

ii. **IF** expected WOs are not displayed, **SELECT** "Sync" to refresh the application (refer to Attachment 1, Item 23).

iii. **IF** the list still does not match, **CONTACT** a MainConn Data Steward for clarification.

b) **LOG IN** to the Locus Mobile application on iPad. (An EIM username and password will be required. Contact the LANL EIM Database Administrator for permissions.)

i. **SELECT** the sampling plan that corresponds to the WO collection route.

ii. **VERIFY** sample collection locations are listed. **IF** the expected sampling plan(s) is not displayed, **SELECT** the cloud icon to "Sync" to refresh the application (refer to Attachment 2, Items 1-4).

iii. **IF** the sampling plan and/or sample locations still do not match, **CONTACT** the EIM Database Administrator for clarification.

[6]   **ENSURE** that field personnel have access to accurate time measurement at the Site to correctly synchronize the ISCO with Mountain Standard Time.

5.1.2   Inspecting the Sampler

Field Personnel

[1]   **IF** conditions prevent a sampler inspection, **DOCUMENT** the conditions in the Labor Report section (Item 15) on the WO and **NOTIFY** the subcontract field representative (STR) or designee within 24 hours. Multiple attempts can be documented on the original inspection WO.

a)   **IF** the target date cannot be met, field personnel **MUST CONTACT** the Mainconn Data Steward or FTL no less than 24 hours before target date for guidance.

[2]   **Item 1**: **Responded Status**

a)   **SELECT** the appropriate WO from the "My WO(s)" page.

b)   **SELECT** "Responded."

c)   **ADD** the labor accounts of all field personnel performing the work.

[4]   **Item 2: Sampler Status**

a)   **VERIFY** and **DOCUMENT** the sampler is ON and its condition upon arrival by checking the "Failed" or "Complete" box.

b)   **EXPLAIN** any non-functional status in the task comment line.

[5]   **Item 3**: **Program Status**

a)   **VERIFY** and **DOCUMENT** the ISCO programming displays the following by checking the "Failed" or "Complete" box.

i.   For Sutron activated samplers mark "Complete" if the display indicates "Bottle 1 after 1", or "Bottle 1 of X after 1."

ii.   For stand-alone samplers (actuator activated) mark "Complete" if the display indicates "Sampler Inhibited."

b)   **IF "**No", **DESCRIBE** the messages (e.g., "Done X samples," "Sampler Inhibited *," or "sampler off," etc.).

c)   **IF** there is no indication of flow and the sampler triggered due to a non-flow event (e.g., animal, tumbleweed) **DESCRIBE** event.

d)   **DOCUMENT** any messages, indications, and the entire program run time including bottles run in the task comment line.

[6]   **Item 4: Bottle Status**

a)   **REMOVE** the ISCO center section.

b)   **IF** sample bottles are empty, **CHECK** the "Complete" (i.e. "Yes") box. **REPLACE** and **SECURE** the ISCO center section.

c)   **IF** sample bottles were filled, **CHECK** the "Failed" box. Proceed to Section 5.1.3, then return to next step below.

5.1.2   Inspecting the Sampler (continued)

[7]   **Item 5: Sampler Time**

a)   **VERIFY** and **DOCUMENT** the sampler is set to the correct Mountain Standard Time +/- no more than 1 minute by checking the "Failed" or "Complete" box.

i.   **IF** the sampler is set incorrectly, **REPROGRAM** for the correct Mountain Standard Time. **DESCRIBE** the work performed and correction applied (e.g., "ISCO clock was X minutes slow") in the task comment line.

ii.   **IF** two samplers are deployed at a location, **ENSURE** each is set to within one minute of the other

[8]   **Item 6: Equipment Configuration**

a)   **VERIFY** and **DOCUMENT** that existing equipment, serial number, bottle set configuration, and trip level match data provided (serial # info found on traveler spreadsheet, Attachment 6; bottle set configuration and trip level found under "Specifications," Attachment 1) for the location by checking the "Complete" box.

i.   **IF** the equipment deployed does not match, **ENSURE** you are at the right location.

ii.   **IF** the location is verified, **CHECK** the "Failed" box and provide correct information on the task comment line.

[9]   **Item 7: Battery Voltage**

a)   **USE** the voltage meter to check the voltage of the battery.

i.   **CHECK** the "Failed" or "Complete" box to indicate if battery voltage is acceptable upon departure from the station (generally ≥11.7 V but may vary by configuration).

b)   **DOCUMENT** the final voltage in the "Final reading" field.

c)   **IF** multiple measurements were taken (e.g., voltage on existing battery and new battery after replacement), **ENTER** the first measurement in the "Initial reading" field.

d)   **IF** maintenance is necessary and can be performed at the time of inspection, **DESCRIBE** the work performed in the task comment line

e)   **IF** maintenance cannot be completed at the time of inspection, **THEN DESCRIBE** the condition in the task line, and **FOLLOW UP** with description of work needed at Item 13.

5.1.2   Inspecting the Sampler (continued)

[10] **Item 8: Battery Replacement**

    a) **DOCUMENT** the battery was replaced by checking the "Failed" or "Complete" box.

[11] **Item 9: Sampler Tubing**

    a) **PERFORM** a suction test of the sampler tuning upon departure.

    b) **DOCUMENT** the sample tubing passed a suction test upon departure from the station by checking the "Failed" or "Complete" box.

    c) **CHECK** the condition of sample tubing and pump tubing.

          i. **IF** maintenance (e.g., clearing the tube, replacing the tube) is necessary and can be performed at the time of inspection, **DESCRIBE** the work performed in the task comment line.

    d) **IF** maintenance cannot be completed at the time of inspection, **THEN DESCRIBE** the condition in the task comment line, and **FOLLOW UP** with description of work needed at Item 13.

[12] **Item 10: Electrical Connections**

    a) **VERIFY** all cable and electrical connections are attached and secure upon departure from the site by checking the "Failed" or "Complete" box.

    b) **IF** maintenance (e.g., tightening connection, replacing cables) is necessary and can be performed at the time of inspection, **DESCRIBE** the work performed in the task comment line.

    c) **IF** maintenance cannot be completed at the time of inspection, **THEN DESCRIBE** the condition in the task comment line, and **FOLLOW UP** with description of work needed at Item 13.

5.1.2   Inspecting the Sampler (continued)

[13] **Item 11: Program Status**

a) **VERIFY and DOCUMENT** the ISCO programming displays the following upon departure from the site by checking the "Failed" or "Complete" box.

  i. Sutron activated samplers mark "Yes" if the display indicates "Bottle 1 after 1," or Bottle 1 of X after 1."

  ii. Stand-alone samplers (actuator activated) mark "Yes" if the display indicates "Sampler Inhibited."

  iii. Stand-alone samplers (actuator activated with "Start Time Delay") mark "Yes" if the display indicates "Start Storm Program at *time...*"

b) **IF** "No," **DOCUMENT** the reason in the task line.

c) **FOLLOW** instructions on WO regarding whether the sampler should be disabled or enabled with a "Start Time Delay." In some cases, the sampler should be disabled immediately after collecting a sample so a subsequent sample is not collected before the allowed time period (e.g., no sooner than 15 days from prior sample).

  i. **IF** sampler is to be deactivated, **ENSURE** sampler is turned off upon departure.

  ii. **IF** sampler is to be left activated, **PRESS** "Start sampling" and "Enter" twice:

    1. For Sutron activated samplers, ensure the sampler indicates "Bottle 1 of X After 1" or "Bottle 1 after 1."

    2. For actuator activated samplers without a "Start Time Delay," ensure the sampler indicates "Sampler Inhibited."

    3. If a sampler is to be activated with a "Start Time Delay" enter the appropriate number of minutes into the configuration sequence (see EP-DIV-SOP-10008 for settings). Ensure the sampler indicates "Start Storm Program at *time current time.*" Record the "Start Time Delay" entered.

    4. Where applicable, reset the actuator switch to "latch" or "toggle/reset" (see EP-DIV-SOP-10008 for settings).

    5. If an error occurs, reconfigure the sampler (see EP-DIV-SOP-10008 for settings).

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5.1.2   Inspecting the Sampler (continued)

[14] **Item 12: Maintenance**

 NOTE 1   *Maintenance items may include (but are not limited to) site clearing,*
              resetting line position, additional equipment installations, or sampler
              diagnostics or repair.

a) **VERIFY AND DOCUMENT** any maintenance completed while on site that is not previously documented on work order (e.g., battery replacement, clearing or replacing tubing, securing electrical connections) by checking the "Failed" or "Complete" box.
b) **DESCRIBE** any work performed in the task comment line.
c) **CHECK** the physical condition of the sampler, including the actuator and intake line for correct location and height in the channel. The actuator, intake line and strainer (if used) should be placed on the cutting side of the channel to help minimize the possibility of sediment burying the intake line/strainer.
   i. **ADJUST** as necessary to capture flow within the channel. The actuator, intake line and strainer must be clear of debris (sediment, pine needles, etc.).
   ii. **IF** maintenance is necessary and can be performed at the time of inspection, **PERFORM** the work and **DESCRIBE** in the task comment line

[15] **Item 13: Follow-Up Maintenance**

 NOTE 1   *Maintenance items may include (but are not limited to) battery replacement,*
              tubing clearing or replacement, site clearing, securing electrical
              connections, or sampler diagnostics or repair.

 NOTE 2   *Upon review, a separate WO for the maintenance recommendation will be*
              issued by the FTL.

a) **VERIFY and DOCUMENT** any maintenance needed that could not be completed while on site by checking the "Failed" or "Complete" box.
b) **DESCRIBE** any needed maintenance in the task comment line.

[16] **Item 14: Sample Volume Retrieval**
a) **DOCUMENT** that water was retrieved by checking the "Failed" or "Complete" box.
b) **IF** water was collected but not retrieved, **DOCUMENT** the reason in the task comment line.

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5.1.2   Inspecting the Sampler (continued)

[17] **Item 15: Labor Report**

a) **DOCUMENT** any additional notes, continuation of task comments (include task # in continuation), or site information in the Labor Report section.

[18] **ENSURE** bottles match the configuration specified in the traveler spreadsheet (see Attachment 6, Item 6) or in the specifications section of ExpressLE (see Attachment 1, Item 6).

a) **IF** bottles cannot be installed according to the Bottle Set Configuration, **NOTE** the reason why and the current configuration in the Labor Report (Item 15).

Additional Field Members

[19] **REVIEW** the completed work order(s) for accuracy and completeness.

[20] **Item 20: Closing Status**

a) **SELECT** "Completed" from the status dropdown.

Lead Field Member

[21] **Item 21: Final Signature**

a) **CERTIFY** that the information submitted is "true, accurate, and complete":

   i. **CLICK** on the Signature bar to open the signature section.
   ii. **TYPE** your name and Z# in the comments field.
   iii. **CAPTURE** an electronic signature.
   iv. **SELECT** "save."

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5.1.3   Retrieving Storm Water Samples

Field Personnel

[1]   **DON** nitrile gloves and safety glasses.

[2]   **PLACE** lids onto the sample bottles and securely seal.

[3]   **WRITE** the date and time collected, station number, and the corresponding carousel number on each sample bottle and **OBTAIN** the sample collection date and time from the ISCO sampler.

[4]   **FOLLOW** the Flow Chart for Sample Retrieval (Attachment 5), and **REFER** to the "Earliest Sample Collect Date" in the traveler spreadsheet (see Attachment 6).

a) **IF** the "Earliest Sample Collect Date" field is empty OR the ISCO sample collection date is ON or AFTER that date, samples may be **RETRIEVED** per the volume requirements given on work order. **CONTINUE** with 5.1.3 [5] below.

b) **IF** the ISCO sample collection date is BEFORE the "Earliest Sample Collect Date":

    i.   **INDICATE** "not a measurable storm event" in the Labor Report (Item 15).

    ii. **POUR OUT** all water to the ground at the station.

    iii. **PROCEED** to Section 5.1.3 [28].

[5]   **REMOVE** filled and partially-filled bottles from carousel.

[6]   **IF** Hobo data logger is present, **RETRIEVE** it from sample bottle and **PLACE** in a plastic bag.

a) **LABEL** the outside of the bag with the sample collection date, time, and station number.

b) **RETURN** water from this sample bottle to the ground at the station.

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5.1.3   Retrieving Storm Water Samples (continued)

> **NOTE 1**   *The volume of water required to complete a sample set varies by station. Additional guidance on retrieving sample volume may be provided by the EIM Data Administrator.*

[7]   **ADD** up total volume of water collected and **CONFIRM** the collected volume of water in glass and poly matches the required volume in the traveler spreadsheet (see Attachment 6, Item 17).
   a) **FOR** samplers with minimum volume requirements:
       i. **PROCEED** to 5.1.3 [8].
   b) **FOR** samplers without minimum volume requirements:
       i. **INDICATE** "insufficient volume collected" in the Labor Report (Item 15).
       ii. **RETURN** all water to the ground at the station if directed to do so by the EIM Data Administrator.
       iii. **PROCEED** to 5.1.3 [28].
   c) **FOR** samplers exceeding maximum volume requirements:
       i. **INDICATE** "bottle(s) not retrieved" and **RECORD** bottle #s affected in the Labor Report (**Item 15**).
       ii. **RETURN** any excess water that exceeded the maximum amount at the station if directed to do so by the EIM Data Administrator.
       iii. **PROCEED** to 5.1.3 [8].

[8]   **Item 1: Locus Mobile Application**
   a) **ENTER** Locus Mobile Application on iPad (Attachment 2).

> **NOTE 1**   *Refer to Attachment 2 for Items 2-18 below.*

> **NOTE 2**   *Repeat Items 3-17 for each bottle being retrieved.*

[9]   **Item 2: EIM Login**
   a) **LOG INTO** Locus Mobile using EIM username and password.

[10]   **Item 3**: **Sampling Plan Options**
   a) **SELECT** the Sampling Plan from the list of Sampling Operations that corresponds to the WO (e.g., Storm Water IP, LAP, ASER, Urban, etc.).
   b) **IF** the Sampling Plan is not listed, **SELECT** the "cloud" icon to sync to download all available plans (refer to Section 5.1.1 [6]).

5.1.3   Retrieving Storm Water Samples (continued)

[11]   **Item 5: Location of Sampler**

a)   **SELECT** the sample location from the list of individual locations within the Sample Plan. Locations can be found by entering the location name or alias into the search, scrolling through the list of available locations, or sample locations can be selected from the map. Map views can be customized to standard, satellite, or hybrid styles (Item 6).

[12]   **Item 7**: **Stormwater Bottle Samples**

a)   **SELECT** Carousel 1 to enter the 12 Bottle Carousel sample information.

b)   **SELECT** Carousel 2 for the 24 Bottle Carousel.

[13]   **Item 8: Sample Retrieval**

a)   **SELECT** the "+" sign to bring up the first sample bottle in the carousel (Item 9).

[14]   **Item 10**: **Collected Timestamp**

a)   **ENTER** bottle collection date and time by selecting the Collected Timestamp.

[15]   **Item 11: Container Type**

a)   **SELECT** Container Type. The container type is preset to the bottle configuration listed in the Sampler Inspection Equipment Traveler (Attachment 6).

b)   **IF** the bottle type is incorrect, **SELECT** the correct type and **NOTE** the problem in the Ad hoc Field Comments section (Item 14).

[16]   **Item 12**: **Sample Volume**

a)   **SELECT** Sample Volume and **ENTER** the volume of storm water the ISCO collected.

[17]   **Item 13**: **Field Sample Comments**

a)   **RECORD** the specific ISCO displayed message for each bottle by either selecting from the list of Field Sample Comments or adding a new comment in the Ad hoc Field Sample Comments section (Item 14).

[18]   **Item 14: Work Order ID**

a)   **ENTER** the WO ID in the Ad hoc Field Sample Comments section until a new Work Order Field is developed.

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5.1.3   Retrieving Storm Water Samples (continued)

[19]   **Item 15: Review Information**
a)   **REVIEW** all entered sample information.
b)   **MAKE** necessary corrections, then select save.

[20]   **Item 16**: **Additional Samples**
a)   **IF** more than one sample is present, **SELECT** the "+" sign. All samples after the initial sample will be prepopulated with the information from the previous sample bottle entered.

[21]   **Item 17: Revision**
a)   **IF** revisions are needed, **SELECT** "edit" next to the corresponding sample and **COMPLETE** revisions.

[22]   **Item 18**: **Closing Out**
a)   **WHEN** all sample bottles in the carousel being retrieved have been entered and reviewed, **SELECT** "Done."

[23]   **ITEM 4: Syncing**
a)   **SELECT** the "cloud" icon to synchronize.

NOTE 1   *Do not use dry ice unless approved in writing by IP Project Lead.*

[24]   **WIPE** dry all retrieved sample bottles and **PLACE** in a cooler with enough reusable ice packs (or equivalent) to initiate the cooling process.

[25]   **USE** cushioning material to protect polyethylene containers from possible puncturing and glass containers from breakage.

[26]   **ENSURE** the drainage hole at the bottom of the cooler is sealed in case of sample container leakage.

[27]   **IF** the Project Technical Representative deems it necessary, **PLACE** sufficient absorbent material in the cooler to absorb all liquid in the event of sample bottle breakage.

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5.1.3   Retrieving Storm Water Samples (continued)

NOTE 1   *The WO completed date (see Section 5.1.2, [21]) will represent the time sample cooling was initiated.*

[28] **INSTALL** new sample bottles in the carousel for the next sampling event. The number and type of bottles may vary by program/project.
    a) **ENSURE** bottles match the configuration specified as by selecting "Specifications" and navigating to "Bottle Set Configuration" (see Attachment 1, Item 6).
    b) **IF** bottles cannot be installed according to the Bottle Set Configuration, **NOTE** the reason why and the current configuration in the Labor Report (Item 15).

[29] **Item 15: Labor Report (Additional Notes)**
    a) **DOCUMENT** any additional notes, continuation of notes, or site information in the Labor Report section.

[30] **RETURN** to Section 5.1.2 [7].

5.1.4   Delivering Samples

        IF samples were not retrieved, **PROCEED** to Section 6, Records.

Field Personnel

[1] **NOTIFY** Storm Water Processing Facility (SWPF) personnel and EIM Data Administrator that a sample(s) has been collected and retrieved from the field.

[2] **TRANSPORT** retrieved samples to the IP Storm Water Processing Facility or other entity per Project Technical Representative in a government vehicle or approved subcontractor vehicle only.

NOTE   *Samples must remain under the direct supervision of the individual(s) who has retrieved them.*

[3] **Item 22, Attachment 3: Relinquishing Samples**
    a) **RELINQUISH** samples to the Sample Processor by obtaining a hard copy of the Electronic Sample Retrieval Form (see Attachment 3) from SWPF personnel and signing and completing the "Relinquished By" section.

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5.2   Sampler Inspection with Hard Copy WO(s)

NOTE   Hard Copy WOs are only used as back up to the electronic forms.

5.2.1   Preparing for Fieldwork

Subcontract or Project Manager

[1]   **DISTRIBUTE** hard copy work orders (WOs) to Route Lead field personnel.

NOTE 1   *Receipt of a hard copy WO indicates that sampler inspections have been approved by the LANS Field Team Lead (FTL) or designee. Schedule work to be completed by the target date appearing on the WO(s).*

NOTE 2   *The hosted Maintenance Connection (MainConn) database system configuration used to produce WO(s) is subject to change. This will affect how hard-coded sections print to hard copy. An example hard copy WO is provided in Attachment 4. Unless otherwise stated, all "**Item #**" callouts in this procedure refer to Attachment 4.*

NOTE 3   *The hosted MainConn database system configuration is subject to change. This will affect how sections in forms appear on hard copy. Checkbox selections on the hard copy WO will appear as "No" and "Yes."*

NOTE 4   *If more space is needed on the hard copy work order, continue notes/comments in the Labor Report Section (**Item 15**).*

[2]   **INFORM** (e.g., by e-mail) the Field Operations designee of the schedule for sampler inspection work and the associated locations up to a week (preferred) before but no later than the day before (for minor changes) to be added to the appropriate plan of the day.

[3]   **CONDUCT** pre-job briefing with field personnel.

Field Personnel

[4]   **OBTAIN** any necessary additional paperwork before conducting work, including IWDs and excavation permits (if necessary).

[5]   **GATHER** the required equipment (see Section 4.2) for the work to be done.

[6]   **ENSURE** that field personnel have access to accurate time measurement at the site to correctly synchronize the ISCO with Mountain Standard Time.

5.2.2   Inspecting the Sampler

Field Personnel

[1]   **IF** conditions prevent a sampler inspection, **DOCUMENT** the conditions in the Labor Report section (Item 15) on the WO and **NOTIFY** the Subcontractor Technical Representative or designee within 24 hours. Multiple attempts can be documented on the original inspection WO.

a)   **IF** the target date cannot be met,
THEN CONTACT the Mainconn Data Steward or FTL no less than 24 hours before target date for guidance.

[2]   **Item 1: Responded Time**

a)   **DOCUMENT** the Responded (i.e., arrival) date and time the inspection is initiated and the names and Z numbers of the field personnel performing the work on the sections provided on the signature page.

b)   **LIST** the route lead first.

[3]   **Item 2: Sampler Status**

a)   **VERIFY** and **DOCUMENT** the sampler is ON and its condition upon arrival by checking the "No" or "Yes" box.

b)   **EXPLAIN** any non-functional status in the task line.

[4]   **Item 3: Program Status**

a)   **VERIFY** and **DOCUMENT** the ISCO programming displays the following by checking the "No" or "Yes" box.

i.   For Sutron activated samplers: mark "Yes" if the display indicates "Bottle 1 after 1," or "Bottle 1 of X after 1."

ii. For stand-alone samplers (actuator activated): mark "Yes" if the display indicates "Sampler Inhibited."

b)   **IF "**No," **DESCRIBE** the messages (e.g., "Done X samples," "Sampler Inhibited *," or "sampler off," etc.).

c)   **IF** there is no indication of flow and the sampler triggered due to a non-flow event (e.g., animal, tumbleweed) **DESCRIBE** event.

d)   **DOCUMENT** any messages, indications, and the entire program run time, including bottles run, in the task comment line.

5.2.2   Inspecting the Sampler (continued)

[5]   **Item 4: Bottle Status**

a)   **REMOVE** the ISCO center section.

b)   **IF** sample bottles are empty, **CHECK** the "Yes" box.

c)   **REPLACE** and **SECURE** the ISCO center section.

d)   **IF** sample bottles were filled, **CHECK** the "No" box. Proceed to Section 5.2.3, then **RETURN** to 5.2.2 [6].

[6]   **Item 5**: **Sampler Time**

a)   **VERIFY and DOCUMENT** the sampler is set to the correct Mountain Standard Time +/- no more than 1 minute by checking the "No" or "Yes" box.

    i.   **IF** the sampler is set incorrectly, **REPROGRAM** for the correct Mountain Standard Time.

    ii.   **DESCRIBE** the work performed and correction applied (e.g., "ISCO clock was X minutes slow") in the task comment line.

    iii.   **IF** two samplers are deployed at a location, **ENSURE** each is set to within one minute of the other.

[7]   **Item 6**: **Equipment Configuration**

a)   **VERIFY** and **DOCUMENT** that existing equipment, serial number, bottle set configuration, and trip level match data provided (found on the traveler spreadsheet, Attachment 6) for the location by checking the "Yes" box.

    i.   **IF** the equipment deployed does not match, **ENSURE** you are at the right location.

    ii.   **IF** the location is verified, **CHECK** the "No" box and **PROVIDE** correct information on the task comment line.

[8]   **Item 7**: **Battery Voltage**

a)   **USE** the voltage meter to check the voltage of the battery and **RECORD** the voltage (e.g., 12.4 not 12.4V) in the task line.

    i.   **CHECK** the "No" or "Yes" box to indicate if battery voltage is acceptable upon departure from the station (generally ≥11.7 V but may vary by configuration).

b)   **IF** maintenance is necessary and can be performed at the time of inspection, **DESCRIBE** the work performed in the task comment line.

c)   **IF** maintenance cannot be completed at the time of inspection, **THEN DESCRIBE** the condition in the task line, and **FOLLOW UP** with description of work needed at **Item 13**.

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5.2.2   Inspecting the Sampler (continued)

[9]   **Item 8**: **Battery Replacement**

a)   **DOCUMENT** if the battery was replaced by checking the "No" or "Yes" box.

[10]   **Item 9: Sampler Tubing**

a)   **PERFORM** a suction test of the sampler tubing upon departure.

b)   **DOCUMENT** if the sampler passed the suction test by checking the "No" or "Yes" box.

c)   **CHECK** the condition of sample tubing and pump tubing.

i.   **IF** maintenance (e.g., clearing the tube, replacing the tube) is necessary and can be performed at the time of inspection, **DESCRIBE** the work performed in the task comment line.

d)   **IF** maintenance cannot be completed at the time of inspection, **THEN DESCRIBE** the condition in the task comment line, and **FOLLOW UP** with description of work needed at Item 13.

[11]   **Item 10: Electrical Connections**

a)   **VERIFY** all cable and electrical connections are attached and secure upon departure from the site by checking the "No" or "Yes" box.

b)   **IF** maintenance (e.g., tightening connection, replacing cables) is necessary and can be performed at the time of inspection, **DESCRIBE** the work performed in the task comment line.

c)   **IF** maintenance cannot be completed at the time of inspection, **THEN DESCRIBE** the condition in the task comment line, and **FOLLOW UP** with description of work needed at Item 13.

5.2.2   Inspecting the Sampler (continued)

[12] **Item 11: Program Status**

a) **VERIFY** and **DOCUMENT** the ISCO programming displays the following upon departure from the site by checking the "No" or "Yes" box:

i. Sutron activated samplers: mark "Yes" if the display indicates "Bottle 1 after 1," or Bottle 1 of X after 1."

ii. Stand-alone samplers (actuator activated) mark: "Yes" if the display indicates "Sampler Inhibited."

iii. Stand-alone samplers (actuator activated with "Start Time Delay"): mark "Yes" if the display indicates "Start Storm Program at *time...*"

b) **IF** "No," **DOCUMENT** the reason in the task line.

c) **FOLLOW** instructions on WO regarding whether the sampler should be disabled or enabled with a "Start Time Delay": In some cases, the sampler should be disabled immediately after collecting a sample so a subsequent sample is not collected before the allowed time period (e.g., no sooner than 15 days from prior sample).

i. **IF** sampler is to be deactivated, **ENSURE** sampler is turned off upon departure.

ii. **IF** sampler is to be left activated, **PRESS** "Start sampling" and "Enter" twice:

1. For Sutron activated samplers, ensure the sampler indicates "Bottle 1 of X After 1" or "Bottle 1 after 1."

2. For actuator activated samplers without a "Start Time Delay," ensure the sampler indicates "Sampler Inhibited."

3. If a sampler is to be activated with a "Start Time Delay" enter the appropriate number of minutes into the configuration sequence (see EP-DIV-SOP-10008 for settings). Ensure the sampler indicates "Start Storm Program at *time current time.*" Record the "Start Time Delay" entered.

4. Where applicable, reset the actuator switch to "latch" or "toggle/reset" (see EP-DIV-SOP-10008 for settings).

5. If an error occurs, reconfigure the sampler (see EP-DIV-SOP-10008 for settings).

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5.2.2   Inspecting the Sampler (continued)

[13] **Item 12**: **Maintenance**

NOTE   *Maintenance items may include (but are not limited to) site clearing, resetting line position, additional equipment installations, or sampler diagnostics or repair.*

a) **VERIFY and DOCUMENT** any maintenance completed while on site that is not previously documented on work order (e.g. battery replacement, clearing or replacing tubing, securing electrical connections) by checking the "No" or "Yes" box.

b) **DESCRIBE** any work performed in the task comment line.

c) **CHECK** the physical condition of the sampler including the actuator and intake line for correct location and height in the channel. The actuator, intake line, and strainer (if used) should be placed on the cutting side of the channel to help minimize the possibility of sediment burying the intake line/strainer.

    i. **ADJUST** as necessary to capture flow within the channel. The actuator, intake line and strainer must be clear of debris (sediment, pine needles, etc.).

    ii. **IF** maintenance is necessary and can be performed at the time of inspection, **PERFORM** the work and **DESCRIBE** in the task comment line.

[14] **Item 13**: **Follow-Up Maintenance**

NOTE 1   *Maintenance items may include (but are not limited to) battery replacement, tubing clearing or replacement, site clearing, securing electrical connections, or sampler diagnostics or repair.*

NOTE 2   *Upon review, a separate WO for the maintenance recommendation will be issued by the FTL.*

a) **VERIFY and DOCUMENT** any maintenance needed that could not be completed while on site by checking the "No" or "Yes" box.

b) **DESCRIBE** any needed maintenance in the task comment line.

[15] **Item 14: Sample Volume Retrieval**

a) **DOCUMENT** that water was retrieved by checking the "No" or "Yes" box.

b) **IF** water was collected but not retrieved, **DOCUMENT** the reason in the task comment line.

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5.2.2   Inspecting the Sampler (continued)

[16] **Item 15: Labor Report**

a) **DOCUMENT** any additional notes, continuation of task comments (include task # in continuation), or site information in the Labor Report section.

[17] **ENSURE** bottles match the configuration specified in the traveler spreadsheet (see Attachment 6, Item 6).

a) **IF** bottles cannot be installed according to the Bottle Set Configuration, **NOTE** the reason why and the current configuration in the Labor Report (Item 15).

Additional Field Members

[18] **Item 19: Review**

a) **REVIEW** the completed work order(s) for accuracy and completeness and **SIGN**.

[19] **Item 20: Work Order Heading**

a) **DOCUMENT** the completed (i.e., end of inspection) date and time in the section provided on the signature page.

b) **CONFIRM** that every page in the WO package has been documented with WO ID and page # of total # of pages (for page one and any continuation page(s), document in the lower right hand corner).

Lead Field Member

[20] **Item 21**: **Lead Signature**

a) **CERTIFY** that the information submitted is "true, accurate, and complete" by signing and dating the "Lead Signature" line on the signature page.

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5.2.3   Retrieving Storm Water Samples

Field Personnel

[1]   **DON** nitrile gloves and safety glasses.

[2]   **PLACE** lids onto the sample bottles and **SEAL** securely.

[3]   **WRITE** the date and time collected, station number, and the corresponding carousel number on each sample bottle and **OBTAIN** the sample collection date and time from the ISCO sampler.

[4]   **FOLLOW** the Flow Chart for Sample Retrieval (Attachment 5), and **REFER** to the "Earliest Sample Collect Date" in the traveler spreadsheet (see Attachment 6).

    a) **IF** the "Earliest Sample Collect Date" field is empty OR the ISCO sample collection date is ON or AFTER that date, samples may be **RETRIEVED** per the volume requirements given on WO. **CONTINUE** with Section 5.2.3 [5].

    b) **IF** the ISCO sample collection date is BEFORE the "Earliest Sample Collect Date":

        i.   **INDICATE** "not a measurable storm event" in the Labor Report (Item 15).

        ii. **POUR OUT** all water to the ground at the station.

        iii. **PROCEED** to Section 5.2.3 [14].

[5]   **REMOVE** filled and partially-filled bottles from carousel.

[6]   **IF** Hobo data logger is present, **RETRIEVE** it from sample bottle and **PLACE** in a plastic bag.

    a) **LABEL** the outside of the bag with the sample collection date, time, and station number.

    b) **RETURN** water from this sample bottle to the ground at the station.

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5.2.3   Retrieving Storm Water Samples (continued)

[7]   **ADD** up total volume of water collected and **CONFIRM** the <u>collected</u> volume of water in glass and poly matches the <u>required</u> volume in the traveler spreadsheet (see Attachment 6, Item 17).

   NOTE 1   *The volume of water required to complete a sample set varies by station. Additional guidance on retrieving sample volume may be provided by the EIM Data Administrator.*

   a) **FOR** samplers with minimum volume requirements:
      i. **PROCEED** to 5.2.3 [8].
   b) **FOR** samplers without minimum volume requirements:
      i.   **INDICATE** "insufficient volume collected" in the Labor Report (**Item 15**).
      ii. **RETURN** all water to the ground at the station if directed to do so by the EIM Data Administrator.
      iii. **PROCEED** to Section 5.2.3 [14].
   c) **FOR** samplers exceeding maximum volume requirements:
      i.   **INDICATE** "bottle(s) not retrieved" and **RECORD** bottle #s affected in the Labor Report (Item 15).
      ii. **RETURN** any excess water that exceeded the maximum amount at the station if directed to do so by the EIM Data Administrator.
      iii. **PROCEED** to 5.2.3 [8].

[8]   **Item 16**: **Collected Bottle Information**
   a) **RECORD** bottle type, date, time, and volume the ISCO collected water for each bottle by the position number in the carousel, and the specific ISCO message displayed for each bottle, if present, in the "Comments" section.

[9]   **Item 18**: **Total Volume Retrieved**
   a) **RECORD** the total volume (estimate to the tenth of a liter) of sample retrieved in glass containers and the total volume of sample retrieved in polyethylene containers.

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5.2.3   Retrieving Storm Water Samples (continued)

NOTE 1   *Do not use dry ice unless approved in writing by IP Project Lead.*

[10] **WIPE** dry all retrieved sample bottles and **PLACE** in a cooler with enough reusable ice packs (or equivalent) to initiate the cooling process.

[11] **USE** cushioning material to protect polyethylene containers from possible puncturing and glass containers from breakage.

[12] **ENSURE** the drainage hole at the bottom of the cooler is sealed in case of sample container leakage.

[13] **IF** the Project Technical Representative deems it necessary, **PLACE** sufficient absorbent material in the cooler to absorb all liquid in the event of sample bottle breakage.

NOTE 1   *The WO completed date (see Section 5.2.2 [19]) will represent the time sample cooling was initiated.*

[14] **INSTALL** new sample bottles in the carousel for the next sampling event. The number and type of bottles may vary by program/project.
      a) **ENSURE** bottles match the configuration specified in the traveler spreadsheet (Attachment 6, Item 6).
      b) **IF** bottles cannot be installed according to the Bottle Set Configuration, **NOTE** the reason why and the current configuration in the Labor Report (Item 15).

[15] **Item 15: Labor Report (Additional Notes)**
      a) **DOCUMENT** any additional notes, continuation of notes, or site information in the Labor Report section.

[16] **RETURN** to Section 5.2.2, [6].

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5.2.4   Delivering Samples

Field Personnel

[1]   **IF** samples were not retrieved, **PROCEED** to Section 6, Records.

[2]   **NOTIFY** Storm Water Processing Facility (SWPF) personnel and EIM Data Administrator that a sample(s) has been collected and retrieved from the field.

[3]   **TRANSPORT** retrieved samples to the IP Storm Water Processing Facility or other entity per Project Technical Representative in a government vehicle or approved subcontractor vehicle only.

NOTE   *Samples must remain under the direct control of the individual(s) who has retrieved them.*

[4]   **Item 22: Relinquishing Samples**
        a)   **RELINQUISH** samples to the Sample Processor by signing and completing the "Relinquished By" section.

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6.   RECORDS

6.1   Hard Copy Work Order Submittal

Field Personnel
[1]   **SUBMIT** completed Form 10013-1 and any other pertinent documentation to the MainConn Data Steward.
[2]   **Item 23**: From the "My WOs" page **CLICK** on the "Menu" dropdown.
         a)   **CONFIRM** you are in a "Connected" state, then **SELECT** "Sync". All WOs placed in Completed status (see Item 20) since the last synchronization will be uploaded to the MainConn database.

MainConn Data Steward
[3]   **ENSURE** that documents generated by the performance of this procedure are processed as described in SW-DI-10003.

6.2   Electronic Copy Work Order Submittal

Field Personnel
[1]   **SUBMIT** completed Form 10013-1 and any other pertinent documentation to the MainConn Data Steward.
[2]   **RETURN** completed original WOs without sample retrieval by noon the first business day following completion of the work.
[3]   **IF** original WOs must remain with collected samples, **RETURN** photocopies of WOs by noon the day following completion of field work.
         a)   **WRITE/STAMP** "copy" on the form.

MainConn Data Steward
[4]   **ENSURE** that documents generated by the performance of this procedure are processed as described in SW-DI-10003, Desk Instruction for Performing Technical Quality Control and Data Entry of Work Orders in Maintenance Connection.

Record Identification	Record Type Determination	Protection/Storage Methods	Processing Instructions
Form 10013-1, ISCO Sampler Inspection and Sample Retrieval Form	Record	N/A	When the records are ready for final disposition, the record is transferred to Records Management in accordance with EP-AP-10003, Records Management

7.   REFERENCES

EP-DIV-SOP-10008, Installing, Setting up, and Operating 3700 ISCO Samplers

EP-AP-10003, Records Management

EP-DIV-SOP-20217, Processing Surface Water Samples

SW-DI-10003, Desk Instruction for Performing Technical Quality Control and Data Entry of Work Orders in Maintenance Connection

8.   ATTACHMENTS

Attachment 1, Electronic Version Sampler Inspection Screenshots

Attachment 2, Electronic Sample Retrieval Screenshots

Attachment 3, Electronic Sample Retrieval Form

Attachment 4, Hard Copy Sampler Inspection and Sample Retrieval Form

Attachment 5, Flow Chart for Sample Retrieval

Attachment 6, Spreadsheet Traveler Example

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Electronic Version Sampler Inspection Screenshots

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Electronic Version Sampler Inspection Form

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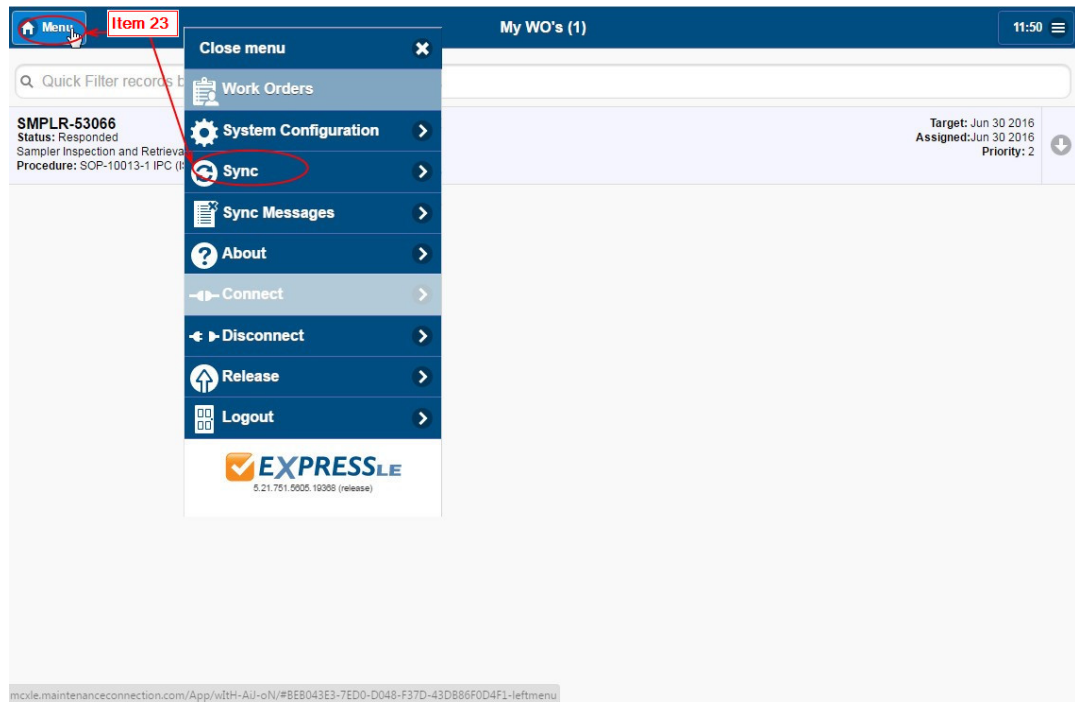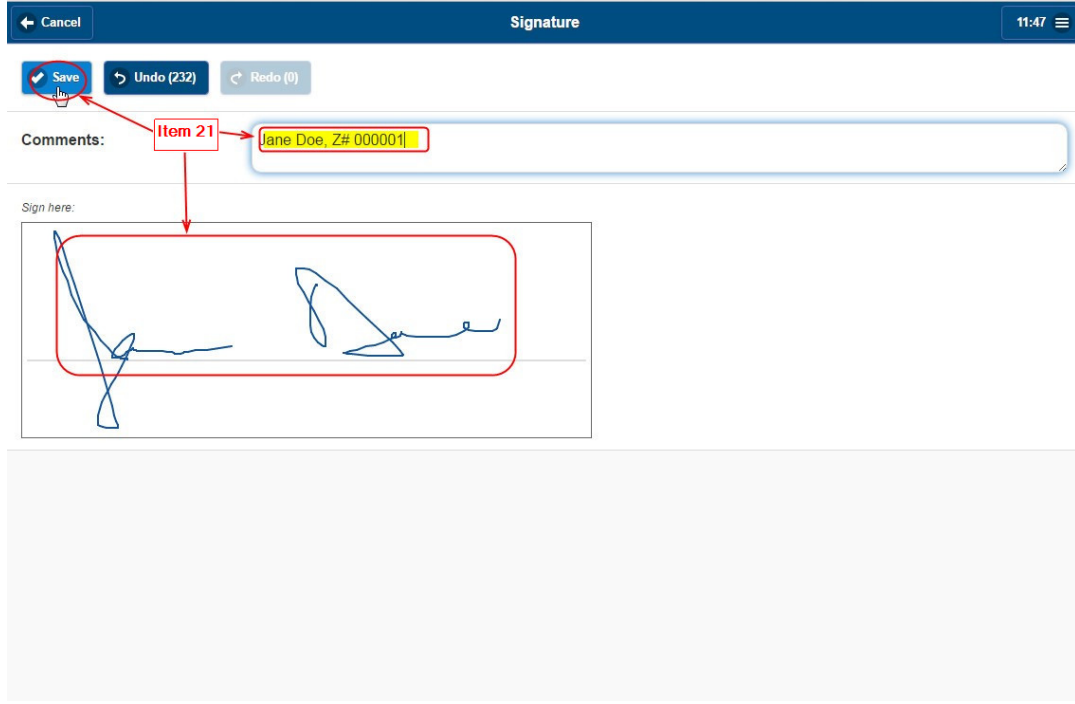
ATTACHMENT 2
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Electronic Sample Retrieval Screenshots

Item 1

Item 2

Item 3
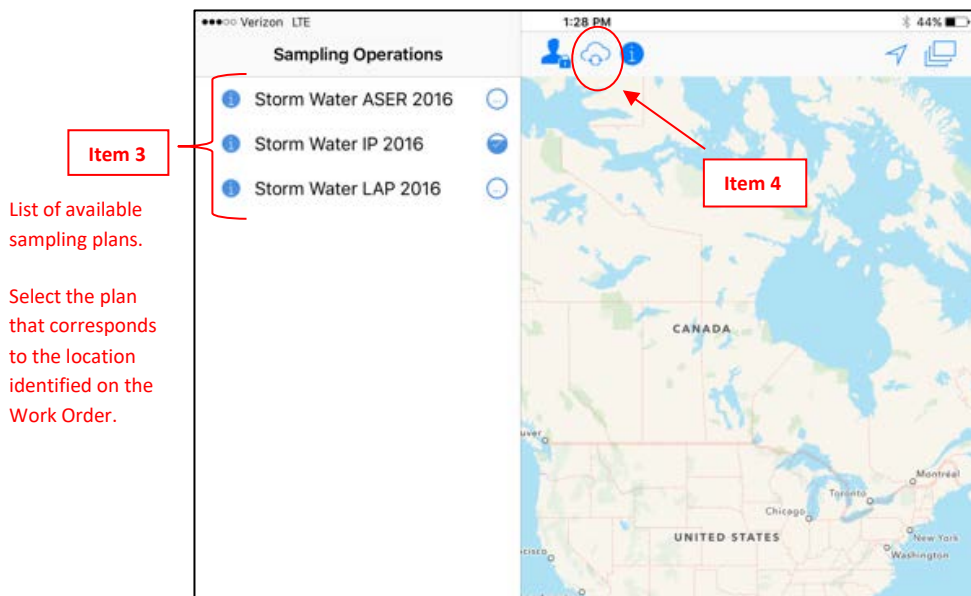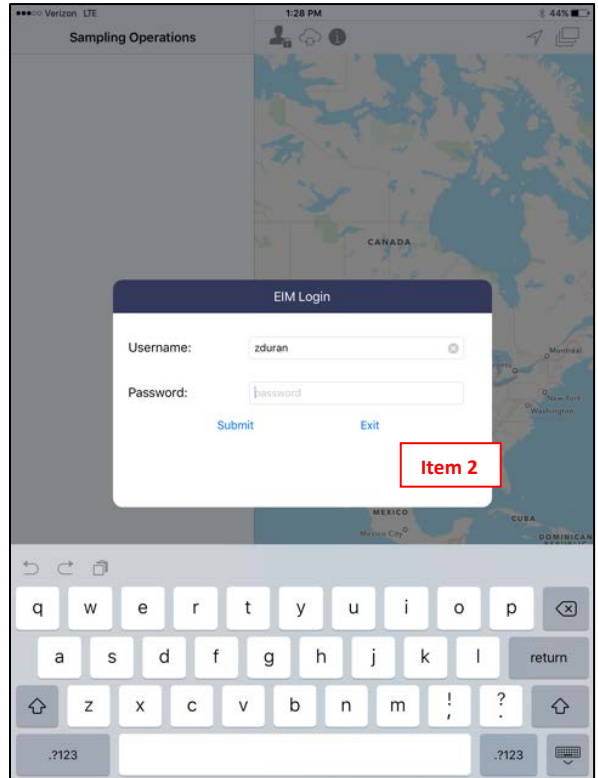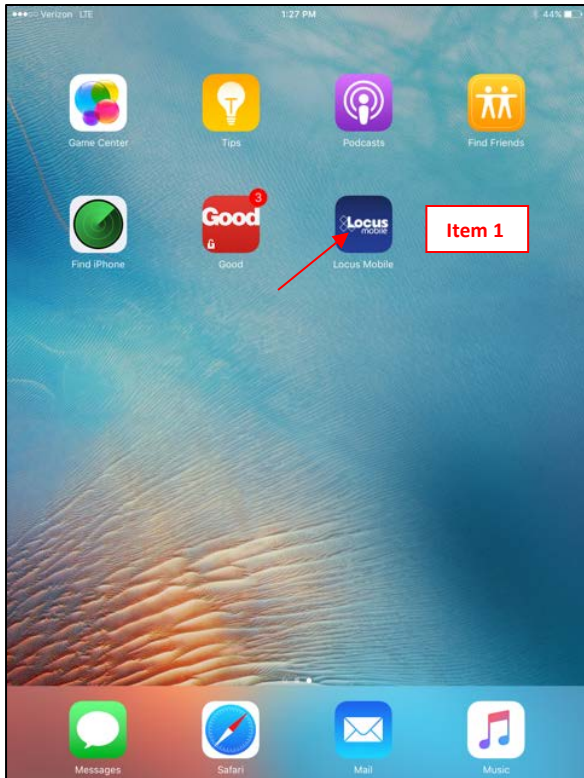
List of available
sampling plans.

Select the plan
that corresponds
to the location
identified on the
Work Order.

Item 4

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Electronic Sample Retrieval Screenshots

Enter Location ID to search for specific location or location alias.

Item 5

Scroll through list and select individual location.

Item 6

Select to change map views.

Item 7

Select Carousel 1 for the 12 Bottle Carousel

Select Carousel 2 for the 24 Bottle Carousel.

Item 8

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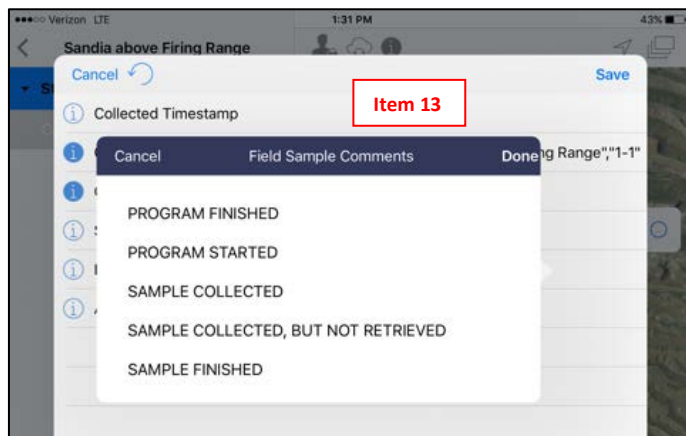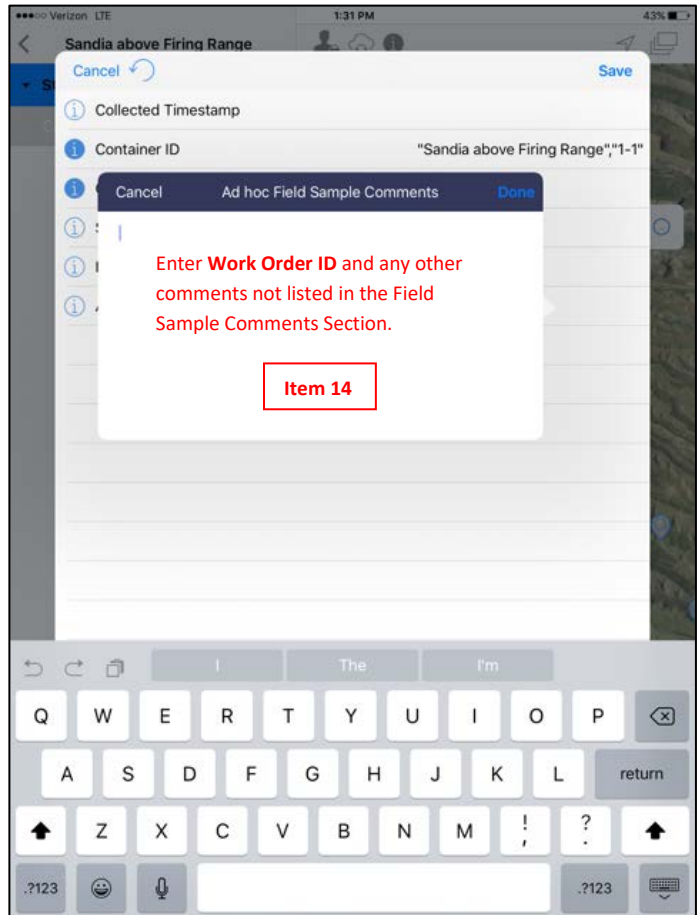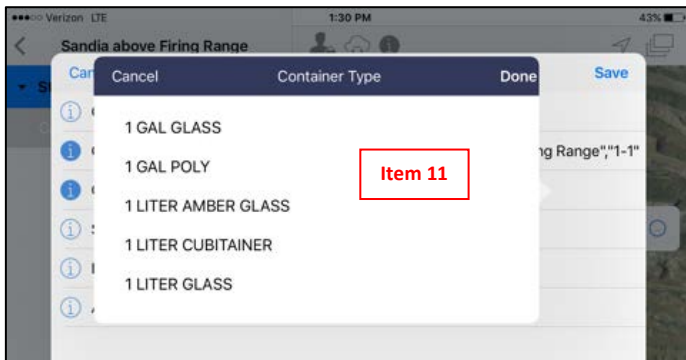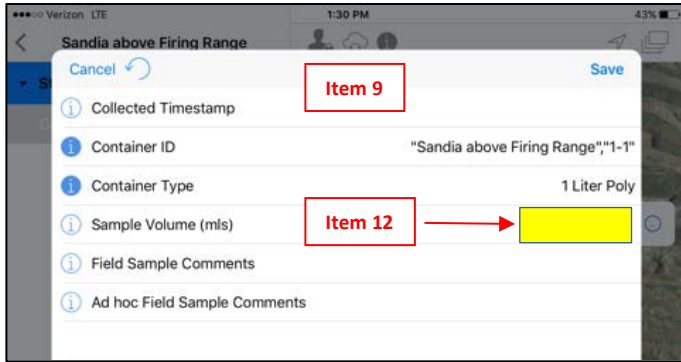
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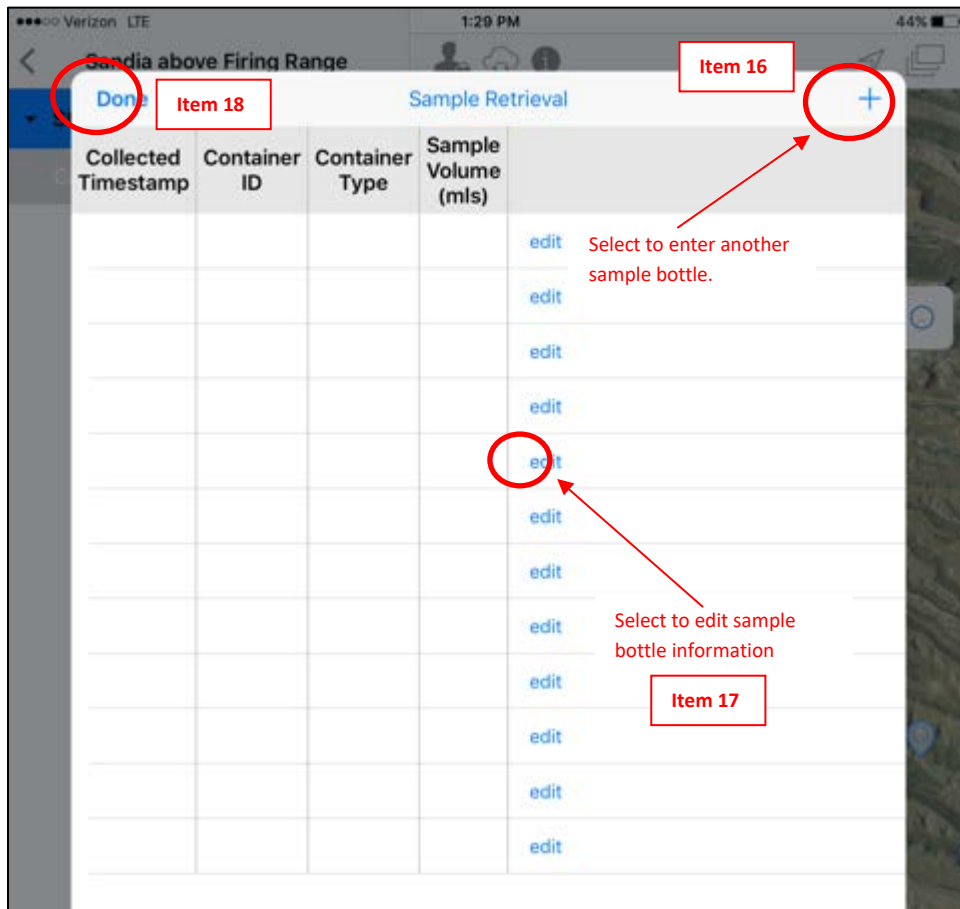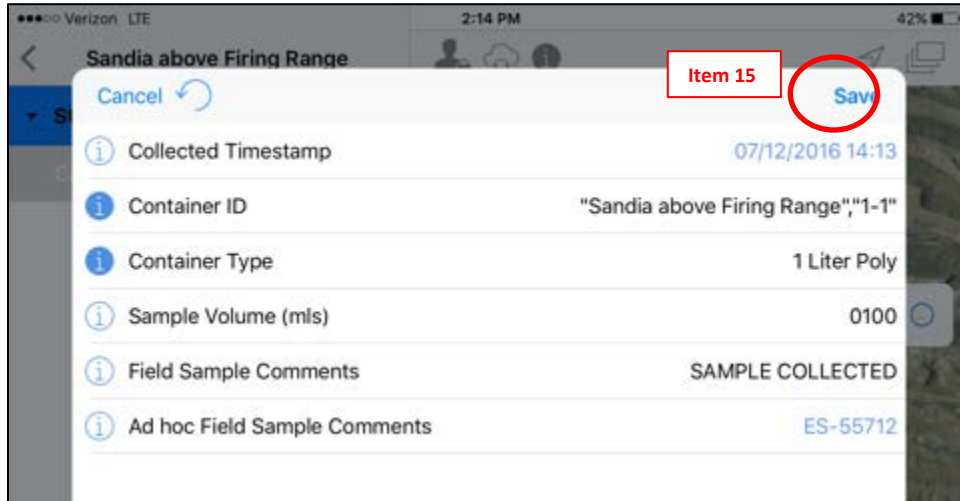
ATTACHMENT 3
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Electronic Sample Retrieval Form

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SOP-10013-1   **Sampler Inspection and Sample Retrieval**

Work Order ID: **Project ID:**

2M-SMA-1.44 at SS153222

Complete if sample bottles contain water OR record ISCO message

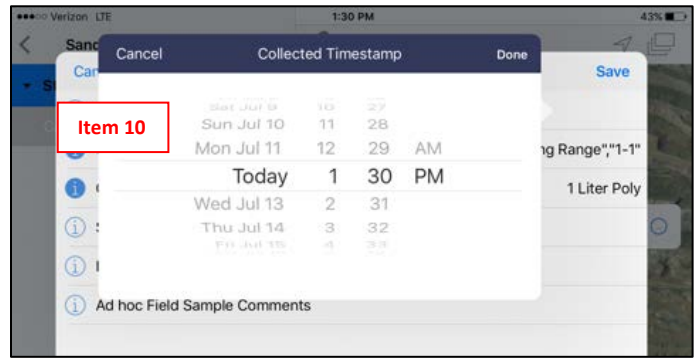| Bottle #	Bottle Type	Date	Time	Volume	Comments
1	1 LITER POLY	2017-02-22	15:00	300mls	
2	1 LITER POLY	2017-02-22	15:01	300mls	
3	1 LITER POLY	2017-02-22	15:02	300mls	
4	1 LITER POLY	2017-02-22	15:03	300mls	
5	1 LITER POLY	2017-02-22	15:04	300mls	
6	1 LITER POLY	2017-02-22	15:05	300mls	
7	1 LITER POLY	2017-02-22	15:06	300mls	
8	1 LITER POLY	2017-02-22	15:07	300mls	
9	1 LITER POLY	2017-02-22	15:08	300mls	
10	1 LITER POLY	2017-02-22	15:09	300mls	
11	1 LITER POLY	2017-02-22	15:10	300mls	
12	1 LITER POLY	2017-02-22	15:11	300mls	
13	1 LITER POLY	2017-02-22	15:12	300mls	
14	1 LITER POLY	2017-02-22	15:13	300mls	
15	1 LITER POLY	2017-02-22	15:14	300mls	
16	1 LITER POLY	2017-02-22	15:15	300mls	
17	1 LITER POLY	2017-02-22	15:16	300mls	
18	1 LITER POLY	2017-02-22	15:17	300mls	
19	1 LITER POLY	2017-02-22	15:18	300mls	
20	1 LITER POLY	2017-02-22	15:19	300mls	
21	1 LITER POLY	2017-02-22	15:20	300mls	
22	1 LITER POLY	2017-02-22	15:21	300mls	
23	1 LITER POLY	2017-02-22	15:22	300mls	
24	1 LITER POLY	2017-02-22	15:23	300mls	

Cooling by: _____

Filtration By: _____

Preservation By: _____

Total Volume Retrieved Glass 0   Total Volume Retrieved Poly 0

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ATTACHMENT 3
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Electronic Sample Retrieval Form

Work Order ID: Project ID:

                                            2M-SMA-1.5

Complete if sample bottles contain water OR record ISCO message

Bottle #	Bottle Type	Date	Time	Volume	Comments
1	1 LITER POLY	2017-02-22	15:06	500mls	
2	1 LITER POLY	2017-02-22	15:07	500mls	
3	1 LITER POLY	2017-02-22	15:08	500mls	
4	1 LITER POLY	2017-02-22	15:09	500mls	
5	1 LITER POLY	2017-02-22	15:10	500mls	
6	1 LITER POLY	2017-02-22	15:11	500mls	
7	1 LITER POLY	2017-02-22	15:12	500mls	
8	1 LITER POLY	2017-02-22	15:13	500mls	
9	1 LITER POLY	2017-02-22	15:14	500mls	
10	1 LITER POLY	2017-02-22	15:15	500mls	
11	1 LITER POLY	2017-02-22	15:16	500mls	
12	1 LITER POLY	2017-02-22	15:17	500mls	

Cooling by: _____
Filtration By: _____
Preservation By: _____

Total Volume Retrieved Glass 0   Total Volume Retrieved Poly   0

Reviewed By Signature:			Date:		
Relinquished By Signature:	Date:	Time:	Received By Signature:	Date:	Time:
Item [22]					

LANL PERSONNEL USE ONLY (Initials and dates)		
Accepted:	Tech QC:	FTL:

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ATTACHMENT 4

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Hard Copy Sampler Inspection and Sample Retrieval Form

Los Alamos National Lab

Work Order SMPLR-60215
Ind Permit Sampler Insp & Maint
Printed 3/7/2017 - 1:45 PM (Duplicate Copy)

Maintenance Details

Requested By: Smith, Shannon on 2/9/2017 11:13:00 AM

Procedure: ISCO Sampler Inspection and Water Retrieval (SOP-10013-1 IPC)

Last PM: 8/25/2011

Project: Example Project (P-SMPLR-4686)

Reason: EP-SOP-10013 IPC 2 example

Special Instructions: Route 1

Target: 3/31/2017 (1) hr
Priority/Type: / Routine

📁 IP
🖧 RG-NCOM
⛏ R002
⛏ R-SMA-1
⛏ SS00

Contact: Smith, Shannon
Phone:

Tasks

#	Description	Meas.	No	Yes
	ON ARRIVAL			
10	ISCO 3700 Sampler [_INXX_12~9639] Is sampler ON and functioning properly upon arrival?	Item 2	☐	☐
20	ISCO 3700 Sampler [_INXX_12~9639] Does ISCO display either "Bottle 1 of X after 1" or "Sampler Inhibited"? If No, record specific message(s) in bottle's Comment field (on Page 2).	Item 3	☐	☐
30	Are all sample bottles empty?	Item 4	☐	☐
40	ISCO 3700 Sampler [_INXX_12~9639] Is ISCO time delta < 1 min (MST)? If No, record adjustment.	Item 5	☐	☐
	ON DEPARTURE			
90	Is equipment configuration correct? (Refer to traveler spreadsheet).	Item 6	☐	☐
100	Record battery voltage. Is voltage acceptable?	Item 7	☐	☐
110	Was battery replaced? (Range: 0 - 0)	Item 8	☐	☐
120	ISCO 3700 Sampler [_INXX_12~9639] Does sample tubing pass suction test?	Item 9	☐	☐
130	ISCO 3700 Sampler [_INXX_12~9639] Are electrical connections secure?	Item 10	☐	☐
150	ISCO 3700 Sampler [_INXX_12~9639] Does ISCO display either "Bottle 1 of X after 1", "Sampler Inhibited", or "Start Storm Program at..."?	Item 11	☐	☐
160	If any maintenance completed, check Yes: Describe. (Range: 0 - 0)	Item 12	☐	☐
170	If any follow-on maintenance is required, check Yes: Describe. (Range: 0 - 0)	Item 13	☐	☐
190	Was sample volume retrieved? (Range: 0 - 0)	Item 14	☐	☐

Labor Report

Completed: _____

Report: Item 15

Item 20

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ATTACHMENT 4

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Hard Copy Sampler Inspection and Sample Retrieval Form

SOP-10013-1   Sampler Inspection and Sample Retrieval

Work Order ID: Item 4   Page ___ of ___ (Item 20)   **Project ID:** Item 4

Complete if sample bottles contain water OR to record ISCO message

Bottle # Item 16	Bottle Type	Date	Time	Volume	Comments			
1	P G							
2	P G							
3	P G							
4	P G							
5	P G							
6	P G							
7	P G							
8	P G							
9	P G							
10	P G							
11	P G							
12	P G							
13	P G							
14	P G							
15	P G							
16	P G							
17	P G							
18	P G							
19	P G							
20	P G							
21	P G						Date	Time	Init
22	P G							
23	P G				Filtration by:			
24	P G				Preservation by:			

Total Volume Retrieved Glass (liters): Item 18   Total Volume Retrieved Poly (liters): Item 18

Reviewed By Signature: Item 19			Date:		
Relinquished by Signature	Date	Time	Received by Signature	Date	Time
Item 22					

Los Alamos National Laboratory

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Hard Copy Sampler Inspection and Sample Retrieval Form

WO ID:_____ Item 20   Page_____of_____ Item 20

Responded Date:_____ Item 1 _Time:_____ Completed Date:_____ Item 20 _Time:_____

Name/Z#:_____ Item 1 _____

Name/Z#:_____

Lead Signature:_____ Item 21 _____

"I confirm the information as recorded is true, accurate and complete."

 LANL PERSONNEL USE ONLY (initials and dates)

Accepted_____Tech QC_____FTL_____

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ATTACHMENT 5
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Flow Chart for Sample Retrieval

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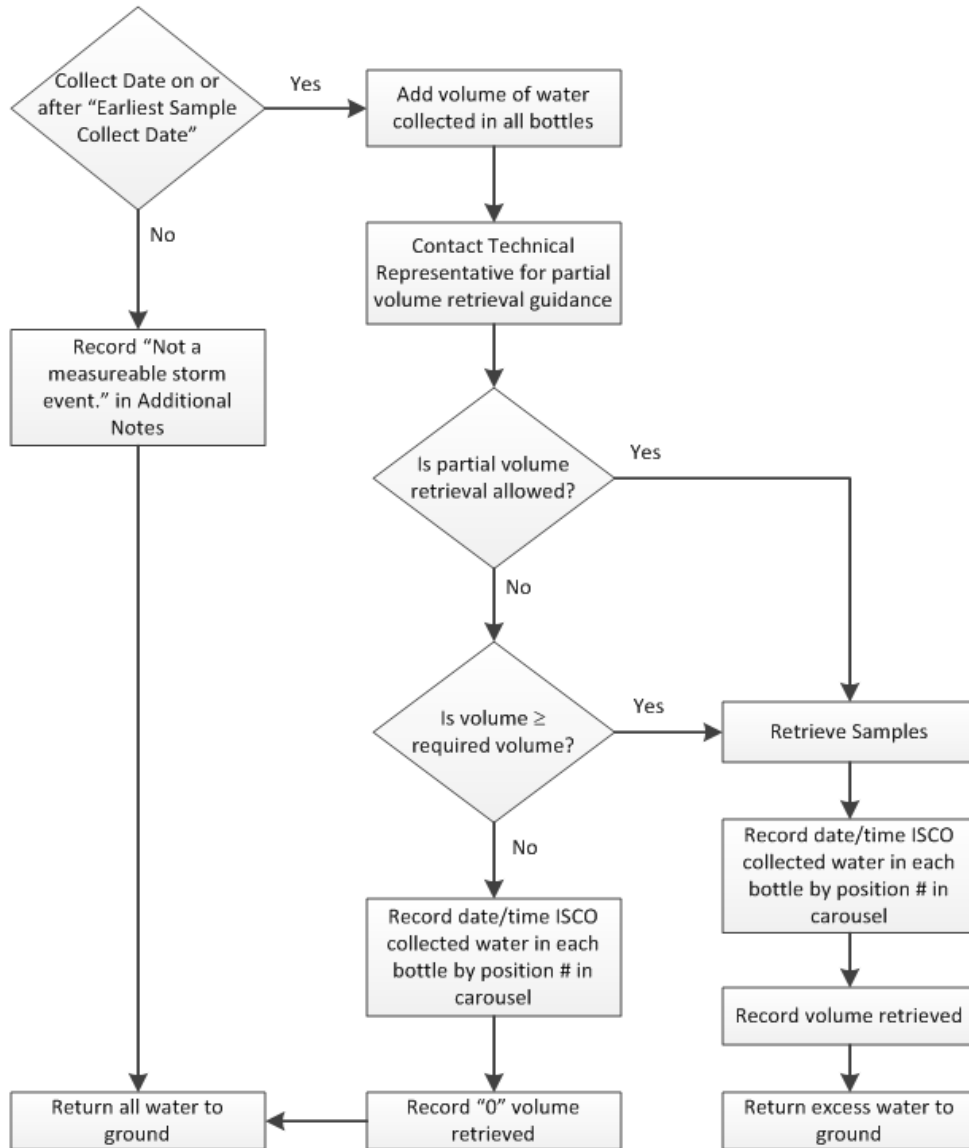
ATTACHMENT 6

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Spreadsheet Traveler Example

Sampler Inspection Configuration Traveler

Run Date 4_25_16

Route	SMA	Station ID	Trip Level [6]	Program [6]	Bottle set configuration [6]	G Min [17]	G Max	P Min [17]	P Max
Route 5	2M-SMA-1.65	SS093209	0.08 FT	Time with Toggle and Reset	24c- 24 1L poly wedge	0	0	1	2

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Spreadsheet Traveler Example

Sampler Inspection Equipment Traveler
Run date 4_25_16

Route	SMA	Station ID	ISCO Serial # [6]	Actuator S [6] #	Solar Panel [6] Serial #	Additional Equipment [6]
5	2M-SMA-1.65	SS093209	198H01002	207J00266	12073740	