

Passport Information

Date Created 06/11/2013 REV. 1 DATE 7/26/13
 Planner Name Smith, Alicia Montney
 Planner Telephone 2-3524
 Equipment Name Tank 5 STP
 Facility FTF
 CLI Number 241905
 Functional Class PS

1.0 Scope of Work:

Place grout in STP equipment, and thermo well, for Tank 5 (241-905F) Riser 6 to support tank closure. This includes removal of riser cover port plugs to attach hose to the camlock and pumping of grout through the hose, in accordance with:

- Grout Strategy For Tanks 5 & 6 Closure # SRR-LWE-2012-00087,
- Tank 5 and 6 Grout Activities RPD Survey Strategy/Plan SRR-ESH-2013-00065
- Inspection Plan For Tanks 5 and 6 During Grouting Activities # SRR-LWE-2013-00008



AHA Number: TF-14302, R1				Drawing: M-M6-F-3287, P-PA-F-3546, P-PA-F-3547			
Pre Job Briefing Checklist: OPS-SO-LWO.01				Procedure:			
SRWP		Job Specific RWP	13-FTF-170	Calibration Datasheet			
Permits				ASME B31.3:		Yes	X No
Fluid Service: Category: D		Normal		Category: M			
Additional Attachments: Attachment - Cleaning/Pigging of Grout Hose Mix/Pump Op Instructions							

2.0 Precautions and Limitations:

- 2.1. Workers are required to review and sign in on appropriate RWP (identified by RPD).
- 2.2. Warning barricades are required for work areas to control unauthorized access to the work area, identify hazards associated with work, and prevent personnel contact with falling objects and moving parts of equipment.
- 2.3. Housekeeping should be performed before, during, and after work activities. Promptly remove debris, unnecessary tools, materials, and equipment, as the job progresses.
- 2.4. Any electric powered tool/equipment that will be used shall be connected to a Ground Fault Circuit Interrupter (GFCI) protected outlet.
- 2.5. Use HEPA-vacuum to clean tools, materials, and reusable PPE contaminated with silica-bearing dusts. Per tela-con with Dave Kerlin on 7-10-13 @15:13.
- 2.6. If unexpected loss of ventilation or improper air flow occurs, place job in a safe condition, exit the area, and **NOTIFY** RCO FLM, PIC, and IH for path forward.
- 2.7. If problems or conditions are encountered that were not anticipated or covered under the AHA or associated permits, or the boundaries of the work need to be modified or changed as the job progresses, **SUSPEND WORK**, Notify supervision, and return the work package to the work coordinator or planner for required revisions.
- 2.8. Perform as much prep work in clean area as possible to help reduce potential for personnel exposure and contamination, and to help reduce the generation of contaminated waste (bring only necessary material into RBA/CA).
- 2.9. Portable eyewash units with rinse wands shall be positioned, readily available, in the immediate work area, with an unobstructed travel path, for each potentially exposed employee, where potential exposure to chemicals exists. Number of employees exposed at any given time should be limited. Readily available safety shower shall be positioned in close proximity to work area. In case of exposure to eyes, eyewash for required immediate 15 minute flush. In case of exposure to skin or body, rinse wand for immediate flush of affected area then safety shower as required for 15 minute flush. Contaminated clothing to be removed immediately and exposed person to seek immediate medical attention.
- 2.10. In the event of a grout material spill: Contact the control room, Stabilize the work area and Notify the LWGS of the event and that a time out has been taken. A dedicated individual shall be identified for spill response.
- 2.11. Be aware of biting/stinging insects, rodents, spiders, snakes, bird droppings, etc. Stay alert to changing weather conditions.

Precautions and Limitations continued:

<u>Personal Protective Equipment (PPE) – 8Q Procedure 61</u>	
Description	Used @ Section(s)/Step(s)
Safety glasses with side shields.	At all times except when wearing respirator or goggles.
Sturdy work shoes	At all times.
Toe protection	Steel toe caps must be worn over sturdy work shoes or safety shoes may be worn as an option when handling sections of slickline.
Hard hat.	At All Times. This may be waived by Construction Supt. & Safety Dept. Rep. for heat stress related purposes.
Leather gloves.	When handling material or materials with rough or sharp surfaces/edges, and may be used as outer pair within a radiological area with RPD approval.
Chemical resistant apron	Required for workers directly involved with grout pumping/pouring or slick line cleaning activities. May be waived by IH personnel for heat stress related purposes.
Foam inserts for noise.	Hearing protection is required when using or when near power tools or loud equipment, and as established by IH Noise Surveys & area postings.
Safety Harness w/Relief Step Device	When unprotected fall of 6’ or more exists.
Face Shield w/Safety glasses.	UVEX Bionic face shield and safety glasses w/side shields when engaged in grout pumping/pouring, slick line cleaning, or pressure washing activities.
Face shield & chemical goggles.	May be utilized in lieu of UVEX Bionic face shield and safety glasses.
Negative Pressure w/HEPA	Resp. protection: FF respirator w/HEPA cartridge (H or N code for dust) – cartridges must be marked N/C As required by IH when mixing granulated materials that create dust.
PVC / Nitrile gauntlet gloves.	Required by workers directly involved with grout pumping/pouring activities or handling of slickline.
Coveralls, disposable type	Required for clean out of slick line and pressure washing activities.
Long sleeve clothing.	Or disposable sleeves, required for workers directly involved with grout pumping/pouring or slick line cleaning activities.
Knee protection.	May be used as an option when working for extended periods in the kneeling position.
Reflective or high visibility blaze orange warning vest, shirt or jacket.	For personnel involved with flagging/spotting heavy equipment related activities (i.e. placing and replacing flush water totes/containers as required.)
List other hazards and the necessary controls.	Be aware of biting/stinging insects, rodents, spiders, snakes, bird droppings, etc. Stay alert to changing weather conditions. Also see 1199252-40 Work Instructions, Section 2.0. for other hazard controls.

Chemicals (MSDS) – Per AHA	
CLASS F FLY ASH FROM BITUMINOUS COAL (identified as a carcinogen)	37526-1
SLICK WILLIE 2 : NEW AND IMPROVED (identified as a carcinogen)	43554-1
(BFS) OR GRANULATED BLAST-FURNACE SLAG (GBFS) (identified as a carcinogen)	45599-1
MASTERFLOW 816 CABLE GROUT	47086-1
MERCURY VAPORS	N/A

Section 3 continued:



- 3.12. Construction: **ENSURE** safety showers are installed, operable and ready for use per WO# 1199252-38.

- 3.13. Construction: **ENSURE** water supply is available to support work activities and clean-out grout equipment.

- 3.14. Construction: **SUBMIT** a waste container request to FTF GCO at least 48 hours prior to start of job.

- 3.15. Construction WGS: **PERFORM** walk down with workers and planner to discuss work, beginning with the portion of task to be performed first.

- 3.16. Construction: **VERIFY** bulk fill grout covers the STP suction.

- 3.17. Construction: **VERIFY the equipment fill grout components and formulation ratios are per SRNL-STI-2011-00592 Rev 0 formulation T1a-62.5FA.400**

- 3.18. Construction: **EVALUATE** the work site plans/layout and determine if installed eyewash/safety shower units are appropriately located to support the task(s).

- 3.19. Construction: **ENSURE** to stage additional eyewash with rinse wand as required.

- 3.20. Construction: **ENSURE** IH has established Hearing boundaries for Grout Pump and Concrete Truck locations.

4.0 Task Performance:

Initial/Date

*****RADCON ACTION STEP*****

NOTE: RCO will perform step 4.1. concurrently with steps 4.2 thru 4.10.

4.1. Construction: **ENSURE** RPD performs radiation and contamination surveys *during hose installation activities, AND*

IF radiological conditions are greater than any of the following levels:

Contamination (dpm/100cm ²)	Probe		Dose Rate (mrem/hr)		Airborne	
200	α	NA	α	NA	Extremity	N/A
1,000	$\beta\gamma$	NA	$\beta\gamma$	NA	Skin	
Riser area				100	WB Working Rate	

THEN DECON/WRAP to less than levels above. **IF** working dose rate exceeds levels above, obtain PIC and RCO FLM approval to continue.

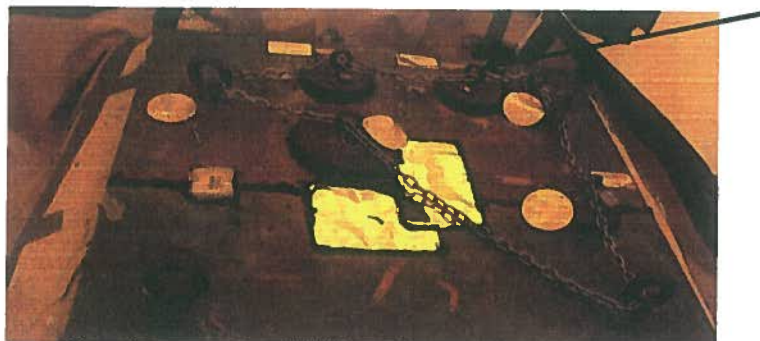
Construction: **RECORD** Action Taken (Note: N/A if levels not exceeded):

Tank Riser: _____

Construction _____ RPD _____ / _____

4.2. Construction: **ENSURE** localized ventilation is located within 1 duct diameter of the riser cover port plug opening and operating prior to start of work process to remove riser cover port plugs. _____ / _____

4.3. Construction: **REMOVE** riser cover port plug (noted below) and place in rad bag. _____ / _____



Section 4 continued:

Initial/Date

4.4. Construction: **ENSURE** valve V-60 is open to vent equipment using valve wrench.

_____/_____
/

4.5. Construction: **REMOVE** riser cover port plug (noted below) and place in rad bag.

_____/_____
/



IH ACTION STEP

4.6. Construction: **ENSURE** IH/IH qualified RCO **PERFORMS** a Mercury Vapor Survey of **Riser port plug cover removal for tremie installation activities**, IF mercury levels are greater than 0.008 mg/m³ within the breathing zone THEN replace cover, **SUSPEND** work and **NOTIFY** LWGS and the Area Industrial Hygienist. Work may proceed using supplied air respiratory protection once IH concurrence is obtained.

Survey Results: _____ mg/m³Hg

4.7. Construction: **INSERT** funnel w/tubing extension into thermo well, grout thermo well, cut tubing and remove funnel.

_____/_____
/

4.8. Construction: **PLACE** hose with weather cone (weather protection) attached, into riser and **ATTACH** to camlock connection.

_____/_____
/

NOTE: Additional Radiological Surveys will be performed per RCO Survey Strategy during grouting activities.

NOTE: IH will verify noise barricade posting adequacy during placement of grout.

Section 4 continued

4.9. Construction: **PLACE/POUR** Grout until grout flows from flange vent location (flange location with wedge fitted for venting purposes) **valves aligned for grouting and the flange wedge was installed by 1199252-23.**

NOTE: In the event that multiple days are needed to complete grout fill, **ENSURE** weather cone (weather protection) is in place over the opening and secure, **AND** that local ventilation remains running.

_____ / _____

4.10. Construction: **INITIATE 'Attachment -Cleaning/Pigging of Grout Hose'** as needed.

_____ / _____

4.11. Construction: **CONTACT** RPD to perform surveys prior to removing tools/materials from radiological work area.

_____ / _____

NOTE: All low-level waste should be packaged for disposal by Waste Generator and verified by Waste Verifier prior to disposal.

*****RADCON ACTION STEP*****

NOTE: RCO will perform step 4.12. concurrently with step 4.13 thru 4.15.

4.12. Construction: **ENSURE** RPD performs radiation and contamination surveys *during hose removal activities*, **AND**

IF radiological conditions are greater than any of the following levels:

Contamination (dpm/100cm ²)	Probe	Dose Rate (mrem/hr)		Airborne			
200	α	NA	α	NA	Extremity	N/A	
1,000	βγ	NA	βγ	NA	Skin		
Riser area				100	WB Working Rate		

THEN DECON/WRAP to less than levels above. **IF** working dose rate exceeds levels above, obtain PIC and RCO FLM approval to continue.

Construction: **RECORD** Action Taken (Note: N/A if levels not exceeded):

Tank Riser: _____

Construction _____ RPD _____ / _____

Section 4 continued:

Initial/Date

4.13. Construction CDE: **VERIFY** the amount of grout placed and **RECORD** the total below, **Tank 5 Riser 6 STP equipment:**

Total _____ yds³ CDE _____ / _____ PIC _____ / _____ DA _____ / _____

4.14. Construction: **REMOVE** hose from camlock connection. _____ / _____

4.15. Construction: **REPLACE** riser cover port plugs. _____ / _____

4.16. Construction: **PERFORM** housekeeping activities as follows: _____ / _____

- **CLEAN** tools used.
- **REMOVE** waste and/or excess material generated from work activities.
- **DISPOSE** of waste per GCO/Waste Verifier directions.

5.0 Post Maintenance Testing & Return to Service:

N/A

6.0 Post Work & Feedback:

6.1. Construction LWGS/PIC: **PERFORM** a post job walk-down to verify all work is completed for this task. _____ / _____

6.2. Construction CDE: **CHECK** the work package for completeness and ensure all documents used during the job are identified on the P211 Work Package Print Report in section Print Report - Work Order Record Documents (M102 / M104) or, if added during work execution, identified in Documents added to work package in field. _____ / _____

6.3. Construction: **ENTER** any feedback including field revisions and recommendations for improvements for future work in Passport OR NA if no feedback applies (CO Comments - Mechanic Feedback to be addressed by Work Control). _____ / _____

6.4. Construction CDE: **ENSURE** all MT&E has been documented in the work package and the MT&E Log has been properly completed CDE and/or QCE may initial/date. This step may be marked N/A with justification statement and initialed/dated by the CDE if no MT&E was used. _____ / _____

Task Performance: Cleaning and Pigging of Grout Hose

Initial/Date

1.1. Construction: **ENSURE** grout pump is in a safe state.

_____ / _____

Note: Step 1.2 will be performed concurrently with 1.3

*****RADCON ACTION STEP*****

1.2. Construction: **ENSURE** RPD performs a contamination and radiation survey of the work area prior to and during work activities **AND**

IF radiological conditions are greater than any of the following levels:

Contamination (dpm/100cm ²)	Probe		Dose Rate (mrem/hr)		Airborne
200	α	NA	α	NA	Extremity
1,000	$\beta\gamma$	NA	$\beta\gamma$	NA	Skin
Grout hose				10	WB Working Rate

THEN DECON to less than levels above.

Construction: **RECORD** Action Taken: (Note: N/A if levels not exceeded)

Construction: _____ RPD _____

_____ / _____

1.3. Construction: **DISCONNECT** section of piping/hose to be pigged /cleaned.

_____ / _____

1.4. Construction: **INSERT** sponge clean out ball (pig) into piping/hose.

_____ / _____

1.5. Construction: **INSTALL** Blowout Cap (air type) fitting onto piping/hose.

_____ / _____

1.6. Construction: **CONNECT** air compressor hose to Blowout Cap fitting, **AND** ensure whip checks are in place.

_____ / _____

1.7. Construction: **OPEN** valve on pig fitting to clean line.

_____ / _____

1.8. Construction: **VERIFY** clean out ball clears hose, **THEN CLOSE** air supply valve on blowout fitting.

_____ / _____

1.9. Construction: **SHUT DOWN** Air Compressor.

_____ / _____

1.10. Construction: **REMOVE** Air Compressor Hose from pig fitting.

_____ / _____

1.11. Construction: **REMOVE** blowout fitting from grout hose.

_____ / _____

1.12. Construction: **REINSTALL** hoses as required to continue grouting.

_____ / _____

Tank 5 and Tank 6 Grout RCO Survey Strategy

Document Control Number:

SRR-ESH-2013-00065

Developed by: Thomas C. Chalk / 6-13-13
FTF LWO S&H RPD First Line Manager Date

Reviewed by: William J. Tury / 6-13-13
RE&HP Date

Approved by: Cindy H. Head / 6-13-13
FTF LWO S&H Facility Manger Date

**Savannah River Remediation
P.O. Box 616
Aiken, SC 29808**

1.0 RCO Survey Strategy

1.1 Pre-Grout Activities

All tank and annulus risers have been modified with grout addition plates with 3 access ports on each plate. This will provide grout delivery points into the tank, camera and lighting access into the tank, and access for portable tank/riser ventilation. Tank 5 purge ventilation system has been isolated and cannot be used. The Tank 6 Purge ventilation system will not be used due to its condition. Portable ventilation will be installed on risers 2 and 7 of both tanks. Each portable ventilation system will be equipped with an installed Demister and HEPA filter. The Demister will be installed into a port opening and be recessed one foot below riser opening. Three video cameras will be used to see the majority of the tank at the same time during grouting.

The annulus will be filled using two of the four annulus risers 180 degrees apart. All four annulus risers will be configured to support simultaneous camera operation. One annulus riser will be configured to support a portable (negative) ventilation system.

One SMP at Tank 6 riser 3 will be removed, placed into a container, and stored South West of Tank 7 (near FBD-4) until an engineering evaluation can be completed for disposition. An evaluation of the SMP storage was performed and concluded that due to the short duration of this storage, it will not change the radiological profile of the grout addition area. A further evaluation was made not to add more FARMS Area TLD's.

2.0 Grout Sequencing and RCO Survey Strategy

2.1 Annulus Bulk Filling

- 2.1.1 **RWP:** Due to each riser being configured with a plate and separate access ports, all risers will be sealed during grouting activities and ventilation (negative) will be required prior to starting grouting. Grout placement activities will be performed under SRWP 13-FTF-003. Activities requiring removal of ventilation systems from risers and camera installation/removal activities will be performed under JSRW 13-FTF-170.
- 2.1.2 **Posting:** Each riser will be posted based on general area posting; currently RA/CA. Any changes in radiological conditions, to include posting changes, shall be reported to RCO FLM.
- 2.1.3 **Dose rate survey:** RCO will monitor dose rates via remote EPD readout on the exhaust HEPA filter every 4 hours during grouting activities and document results on VSIDS. **If EPD readings reach 50 mrem/hr @ contact, then notify RCO FLM and perform a contact and 30 cm dose rate with portable survey instrument (R0-2, R0-20) and document on VSIDS. If a dose rate of 80mrem/hr@30 cm is obtained, then contact PIC, RCO FLM and SOM and implement HRA controls and post per RCO procedures.**

NOTE: If the remote EPD readout system becomes inoperable, RCO Inspectors shall perform HEPA filter monitoring per portable survey instruments. Survey frequency shall be established per RCO FLM.

- 2.1.4 Contamination survey:** RCO will perform contamination surveys on all annulus risers prior to grouting activities each day, and any time the slick line has been cleaned out, usually at the end of each day. All results shall be document on VSDS. Notification of RPD FLM is required if any increase in contamination above baseline is detected.
- 2.1.5 Air sampling:** The ventilation exhaust will be monitored with a MAP air sampler and will be probed every 4 hours during grouting activities. Action limits will be anything above 3,000 d/m α and 30,000d/m $\beta\gamma$. Notification of RCO FLM is required if above action limits are exceeded.

2.2 Primary Bulk Filling

- 2.2.1 RWP:** Due to each riser being configured with a plate and separate access ports, all risers will be sealed during grouting activities and ventilation will be required prior to starting grouting. Work will be performed using JSRWP 13-FTF-170 during initial riser access work due to High Radiation dose rates. RPD will perform an evaluation of HRA controls for open riser work once grouting activities have been initiated. Activities such as camera install/remove, ventilation (Demister) install/remove and tremie change out will be performed under JSRWP.
- 2.2.2 Posting:** Each primary tank riser will be posted based on general area posting; currently RA/CA. Any changes in radiological conditions, to include posting changes, shall be reported to RCO FLM.
- 2.2.3 Dose rate survey:** RCO will monitor dose rates via remote EPD readout on the exhaust HEPA filter every 4 hours during grouting activities. **If EPD readings reach 50 mrem/hr @ contact, then notify RCO FLM and perform a contact and 30cm dose rate with portable survey instrument (R0-2, R0-20) and document on VSDS. If a dose rate of 80mrem/hr@30cm is obtained, then contact PIC, RCO FLM and SOM and implement HRA controls and post per RCO procedures.**

NOTE: If the remote EPD readout system becomes inoperable, RCO Inspectors shall perform HEPA filter monitoring per portable survey instruments. Survey frequency shall be established per RCO FLM.

- 2.2.4** Contamination survey: RCO will perform contamination surveys on all primary tank risers prior to grouting activities each day and any time the slick line has been cleaned out, usually at the end of each day. All results shall be document on VSDS. Notification of RPD FLM is required if any increase in contamination above baseline is detected.
- 2.2.5** Air sampling: The ventilation exhaust will be monitored with a MAP air sampler and will be probed every 4 hours during grouting activities. Action limits will be anything above 3,000 d/m α and 30,000d/m $\beta\gamma$. Notification of RCO FLM is required if above action limits are exceeded.

2.3 Cooling Coil Filling

- 2.3.1** RWP: Pre Grout activities performed the following; drained the chromate system, isolated Tank 5 and Tank 6 from the chromate system. Spool pieces will be installed in the Valve House at each cooling coil for grout introduction and work will be performed using SRWP 13-FTF-003. Activities requiring removal of ventilation systems from risers and camera installation/removal activities will be performed under JSRW 13-FTF-170.
- 2.3.2** Posting: Valve house will be posted based on general area posting; currently RA/CA. Any changes in radiological conditions, to include posting changes, shall be reported to RCO FLM.
- 2.3.3** Dose rate survey: Each chromate line will have been flushed with water prior to introduction of grout. Dose rates will be verified once water flushing has been performed. RCO will monitor dose rates on each line break prior to performing line breaks.
- 2.3.4** Contamination survey: RCO will perform contamination surveys on all line break locations and at each location where “connections” are made. All grout line connections will be bagged in clear plastic with absorbent pads. All results shall be document on VSDS. Notification of RCO FLM is required if any increase in contamination above baseline is detected.
- 2.3.5** Air sampling: No air sampling will be required to perform cooling coil grouting due to it being a closed system.

2.4 Tank Riser Filling

- 2.4.1 RWP:** Due to each riser being configured with a plate and separate access ports, all risers will be sealed during grouting activities and portable tank ventilation will be installed on each riser prior to grouting to be utilized as passive ventilation prior to starting riser grouting. Work will be performed using JSRWP 13-FTF-170. Activities requiring removal of ventilation systems from risers and camera installation/removal activities will be performed under JSRW 13-FTF-170.
- 2.4.2 Posting:** Each riser will be posted based on general area posting; currently RA/CA. Any changes in radiological conditions, to include posting changes, shall be reported to RCO FLM.
- 2.4.3 Dose rate survey:** RCO will monitor dose rates via remote EPD readout on the exhaust HEPA filter every 4 hours during grouting activities. **If EPD readings reach 50 mrem/hr @ contact, then notify RCO FLM and perform a contact and 30cm dose rate with portable survey instrument (R0-2, R0-20) and document on VSDS. If a dose rate of 80mrem/hr@30cm is obtained, then contact PIC, RCO FLM and SOM and implement HRA controls and post per RCO procedures.**

NOTE: If the remote EPD readout system becomes inoperable, RCO Inspectors shall perform HEPA filter monitoring per portable survey instruments. Survey frequency shall be established per RCO FLM.

- 2.4.4 Contamination survey:** RCO will perform contamination surveys on affected tank risers prior to grouting activities each day and any time the slick line has been cleaned out, usually at the end of each day. All results shall be document on VSDS. Notification of RCO FLM is required if any increase in contamination above baseline is detected.
- 2.4.5 Air sampling:** The ventilation exhaust will be monitored with a MAP air sampler and will be probed every 4 hours during riser grouting activities. Action limits will be anything above 3,000 d/m α and 30,000d/m $\beta\gamma$. Notification of RCO FLM is required if above action limits are exceeded.

If you have any questions, please contact Tommy Chalker @ 507-8439, Kirby Coggin @ 646-1800, Cindy Head at 507-2783 or 2-3586, or Mike Croft @ 507-2363.

Attachment A

FARMS location for Tank 5 and Tank 6 Grouting Activities

One additional FARMS Motor Air Pump (location #38) will be installed on the west side of Tank 5 and 7. All FARM air samples will be probed daily and changed out weekly to be sent to CCF for analysis.

