Environmental Surveillance & Oversight Program

2014 Radiological Monitoring of Surface Water Project

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Environmental Quality Control
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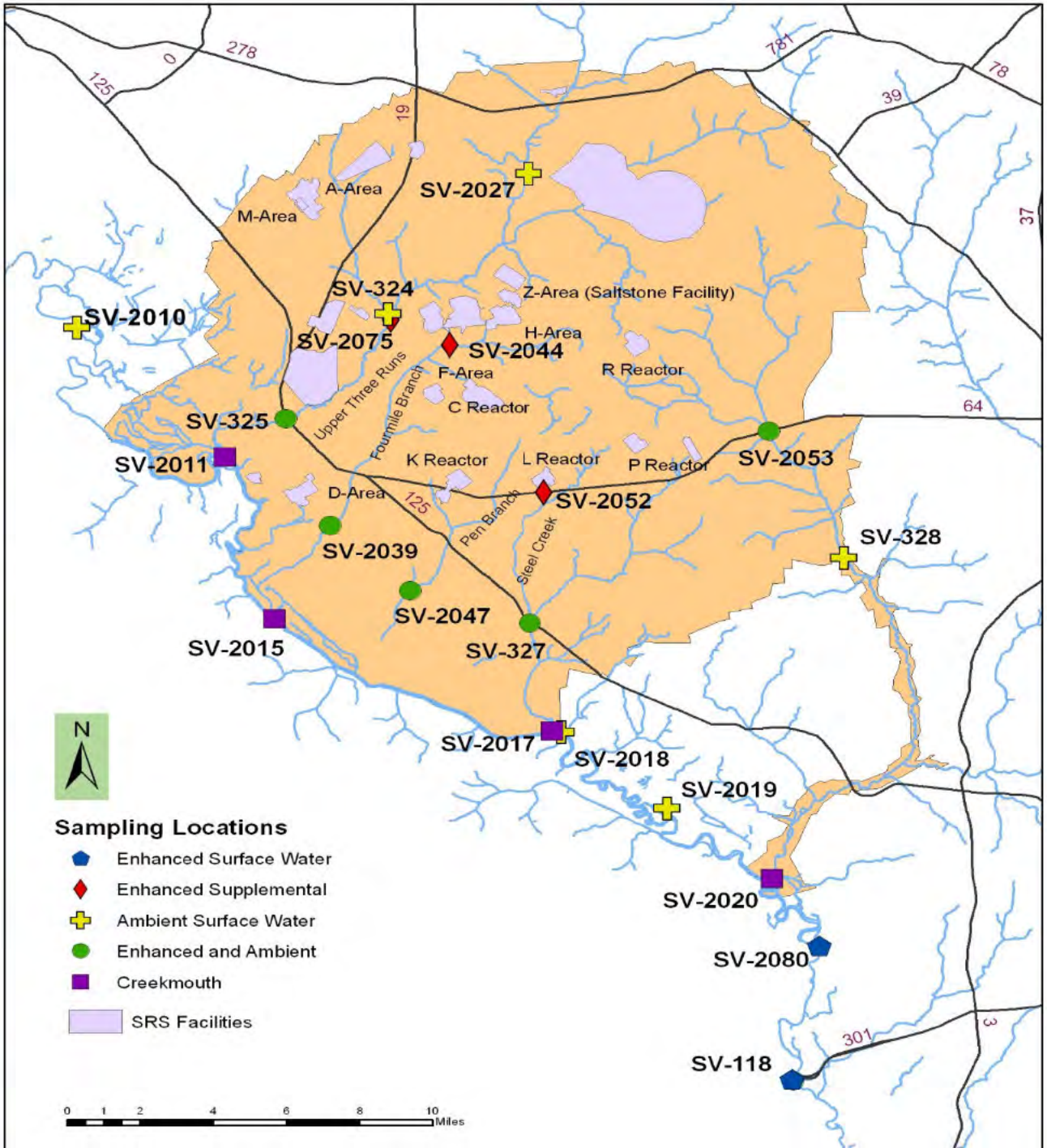
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

ESOP Surface Water Monitoring


SV-2027
A-Area
M-Area
SV-324
Z-Area (Saltstone Facility)
SV-2010
SV-2075
H-Area
SV-2044
F-Area
R Reactor
Upper Three Runs
Fourmile Branch
C Reactor
SV-325
SV-2011
K Reactor
L Reactor
P Reactor
SV-2053
D-Area
SV-2052
Pen Branch
Steel Creek
SV-2039
SV-328
SV-2047
SV-2015
SV-327
SV-2017
SV-2018
SV-2019
SV-2020
SV-2080
SV-118
N
Sampling Locations
Enhanced Surface Water
Enhanced Supplemental
Ambient Surface Water
Enhanced and Ambient
Creekmouth
SRS Facilities
0 1 2 4 6 8 10 Miles

Enhanced Monitoring Network

- Collected and analyzed Monday, Wednesday, and Friday.
- Used to provide early notification to downstream drinking water users of potential tritium releases.
- Consists of one 30 minute (SV-118 Composite) and eight 10 minute quick scan samples.
- Seven composite ambient locations plus two additional grab samples collected from Hwy 301 (SV-118) and Johnson's boat landing (SV-2080) on the Savannah River.
- Enhanced monitoring sample results are non-reportable.

Enhanced Monitoring Network (cont)

Enhanced monitoring network

- 24 bottle carousel sampler at Highway 301 location (SV-118) collects hourly samples
- Provides temporal sampling over 48 or 72 hour period
- If SV-118 concentrations are above specified action limits, emergency notification protocol implemented
  - SV-118 carousel bottle between 5,000 and 10,000 pCi/l, "courtesy" notification sent
  - SV-118 composite > 5,000 or SV-118 grab, SV-2080 grab, or carousel bottle > 10,000, "official" notification sent

Early Notification to Downstream Surface Water Users

- An experiment was performed at the B/J Purrysburg plant to determine travel times for tritium releases on the Savannah River.
- Travel time calculation is approximately 58 hours to reach B/J intake at Purrysburg plant.
- At B/J intake, tritium concentrations were diluted approximately 50% of concentrations at Hwy 301 bridge.

Tritium Courtesy Notification

From:
To: Tritium Notification Courtesy
Date and time:
Subject: Tritium Notification Courtesy

Two tritium peaks were detected in samples collected on October 29, 2013.

October 25th and 26h
Bottle #1 (6453.73 pCi/L) at 1100, 1200 and 1300 hrs
Bottle #2 (3336.85 pCi/L) at 1400, 1500 and 1600 hrs
Bottle #10 (4100.25 pCi/L) at 1100, 1200 and 1300 hrs
Bottle #11 (5146.38 pCi/L) at 1400, 1500 and 1600 hrs
Bottle #12 (3313.60 pCi/L) at 1700, 1800 and 1900 hrs

The Highway 301 (Friday, October 25, 2013 @1100 hrs to Monday, October 28, 2013, @1000 hrs) composite value was 1915.80 pCi/L.

All on-site stream results were within normal limits.

These tritium levels are the result of a 10-minute quick-scan and are not considered official data. Each bottle represents a three-hour sampling period with one sample collected per hour. Please let me know if you have any questions.

Questions?