Quarterly Remedial Action Progress Report

Second Quarter 2005

PSEG Nuclear, LLC, Salem Generating Station

August 2005

ARCADIS
Infrastructure, environment, buildings

Environment, Health, and Safety
130 Money Island Road, Salem, NJ 08079

PSEG
Services Corporation

CERTIFIED MAIL

August 9, 2005
PTS05015

Kent Tosch
Manager
New Jersey Department of Environmental Protection
Radiation Protection Programs
Bureau of Nuclear Engineering
33 Arctic Parkway
Trenton, New Jersey 08625

Dear Mr. Tosch:

QUARTERLY REMEDIAL ACTION PROGRESS REPORT, SECOND QUARTER 2005
PSEG NUCLEAR, LLC, SALEM GENERATING STATION

PSEG Services Corporation (PSEG) has prepared this Quarterly Remedial Action Progress Report (RAPR) to provide a summary of groundwater remediation activities conducted since the submission of the previous RAPR in May 2005 at the PSEG Nuclear, LLC Salem Generating Station (the Station). The Station is located on Artificial Island in Hancock's Bridge, Salem County, New Jersey. The Station location and layout are presented on **Figures 1** and **2**, respectively. Groundwater remediation activities are being conducted to address tritium detected in shallow groundwater adjacent to and south of Salem Unit 1.

Project Background

In April 2004, a Remedial Investigation Report (RIR) was submitted to the New Jersey Department of Environmental Protection Bureau of Nuclear Engineering (NJDEP-BNE) presenting the details and results of groundwater investigation activities that were conducted following the discovery of tritium in groundwater adjacent to Salem Unit 1. The results of the remedial investigation indicated that the source of tritium detected in groundwater was the Spent Fuel Pool, the tritium release to the environment has been stopped, and that tritium has not migrated to the property boundary above the New Jersey Groundwater Quality Criterion (GWQC) for tritium.

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The remedial investigation produced a comprehensive body of knowledge that was used as the basis for developing a remedial action strategy designed to hydraulically contain the further migration of tritium in groundwater and to reduce the concentration of tritium in groundwater. In July 2004, a Remedial Action Work Plan (RAWP) was prepared and submitted to the NJDEP-BNE presenting the proposed remedial action for achieving these objectives. The RAWP, which proposed the operation of a groundwater extraction system, was approved by the NJDEP in November 2004. In April 2004, prior to the submittal of the RAWP, PSEG conducted a groundwater extraction pilot study designed to demonstrate the effectiveness of groundwater extraction for achieving the remedial objectives. The pilot study proved to be effective and a full-scale groundwater extraction system was subsequently installed.

The following sections present the details and results of activities conducted since the submittal of the May 2005 RAPR, document the progress of remedial actions conducted to date, and provide a discussion of upcoming activities projected for the next reporting period.

Continued Groundwater Monitoring

Groundwater monitoring activities consist of the periodic collection of groundwater samples from the 36 Station monitoring wells. A summary of the Station monitoring well details are included in **Table 1** and their locations are presented on **Figure 2.** Pursuant to the schedule presented in the previous RAPR and subsequent conversations with the NJDEP, the monitoring wells are sampled according to an adaptively managed schedule whereby wells that have been established to have tritium levels that do not exceed ambient levels (including the Vincentown Wells) are sampled semi-annually, wells screened within the shallow water bearing unit but located such that tritium would not be reasonably expected to migrate to them are monitored on a quarterly basis; and, wells that monitor groundwater quality within the groundwater extraction zone and at the property boundary are monitored on a monthly basis. Groundwater monitoring at Well AQ, which was installed within a cofferdam cell, has ceased. Additionally Wells AP and Z have been sampled at a temporarily increased frequency (biweekly) to facilitate further evaluation of the increased concentrations of tritium observed in groundwater samples collected from the AP well in February 2005. The sampling program is designed to ensure representative data are collected that meet the objectives of the investigation and provide the information necessary to evaluate plume migration and capture.

Groundwater samples are submitted to Salem Chemistry for analysis and samples indicating tritium concentrations less than 20,000 picocuries per liter (pCi/L) are sent to Maplewood Testing Services for more refined analysis. Historically, groundwater samples were analyzed for tritium, major cations and anions (e.g., sodium and boron), and gamma-emitting isotopes. Boron monitoring has ceased as was stated in the last RAPR (Q1 2005). The large volume of analytical data collected to date indicates that plant related gamma-emitting isotopes have not been detected in groundwater samples

collected during the groundwater investigation, and thus have not migrated any significant distance beyond the seismic gap.

An update of analytical results for groundwater samples from the Site monitoring wells through June 2005 are summarized in **Table 2** and are presented on **Figure 3**. Historic analytical results were presented in the RIR and previous RAPRs. Included on **Figure 3** are the extent of tritium in groundwater at the completion of the remedial investigation (Baseline Plume), which was completed in April 2004, the extent of tritium in groundwater in December 2004 in the eighth month of the pilot groundwater remediation activities, and the current extent of tritium in groundwater. Based on a review of the three maps, it is apparent that the mass of tritium in groundwater has been reduced by the remedial efforts completed to date. Details regarding these activities are included in this report.

Specific details regarding the analytical results for the groundwater samples are presented in the following sections. The analytical results for the monitoring wells were evaluated based on the water-bearing zone in which the monitoring wells are screened. The three primary water-bearing units being investigated beneath the Station are: 1) the Vincentown Formation; 2) the shallow, water-bearing unit within the limits of the cofferdam; and, 3) the shallow, water-bearing unit outside of the limits of the cofferdam.

Tritium Analytical Results for the Vincentown Formation

Groundwater quality for wells screened in the Vincentown Formation, which consist of Well K, Well L, Well P, Well Q, and Well V, is currently monitored on a quarterly or semi-annual basis. Groundwater samples collected from these wells are analyzed for tritium and gamma-emitting isotopes. Analytical results of groundwater samples collected from Wells P and Q indicate concentrations of tritium below the laboratory detection limits. Tritium has only been detected at a concentration above laboratory detection limits once (July 2004) in groundwater from Well L; however, the tritium concentration was well below the New Jersey Groundwater Quality Criteria. Analytical results of groundwater samples collected from Wells V and K have never indicated tritium concentrations greater than 402 pCi/L and 1,170 pCi/L, respectively and both are near their respective minima.

Analytical results of groundwater samples collected from the monitoring wells screened in the Vincentown Formation indicate that the release of water from the Spent Fuel Pool has not migrated beyond the shallow water-bearing unit.

Tritium Analytical Results for Wells Installed Within the Limits of the Cofferdam

Wells screened in the shallow, water-bearing unit within the limits of the cofferdam consist of Well M, Well N, Well O, Well R, Well AC, Well AE, Well AI, Well AM, Well AN, and Well AO. As expected, based upon their location relative to the Salem Unit 1

seismic gap, analytical results of groundwater samples collected from these wells indicate the highest tritium concentrations in groundwater at the Station. Well AC is located directly southeast of the Salem Unit 1 seismic gap and has indicated tritium concentrations as high as 15,000,000 pCi/L. Analytical results of more recent groundwater samples collected from this well indicate tritium concentrations of approximately 26,300 pCi/L, just slightly above the NJDEP GWQC for tritium. The decrease in tritium concentrations at Well AC is further confirmation that the release of water from the Spent Fuel Pool has been stopped and the operation of the seismic gap drain and the groundwater extraction system (discussed later in the report) are effectively reducing concentrations of tritium in groundwater.

Trend charts of historic tritium concentration for select wells are presented on **Figure 4.** Analytical trends for wells screened within this unit exhibiting tritium concentrations above NJDEP GWQC continue to show generally decreasing trends. This provides an indication that tritium concentrations are decreasing within this unit since the elimination of the source through the operation of the Unit-1 seismic gap drain and operation of the groundwater extraction system. As expected, some wells completed within the cofferdam have shown increasing and indefinite trends as a result of the changes to the groundwater flow field caused by the start-up of the full-scale system. It is expected that these trends will stabilize and become decreasing as seen in many of the pumping wells.

Tritium Analytical Results for Wells Installed Beyond the Limits of the Cofferdam

The wells installed in the shallow, water-bearing unit beyond the limits of the cofferdam are Well S, Well T, Well U, Well W, Well Y, Well Z, Well AA, Well AB, Well AD, Well AF, Well AG (Shallow and Deep), Well AH (Shallow and Deep), Well AJ, Well AL, Well AP, Well AQ, Well AR, Well AS, and Well AT. These wells are screened either just above the clay confining unit that separates the shallow water-bearing unit from the Vincentown Formation, or in the interval indicating the highest tritium concentrations at the time of the Supplemental Investigation completed in August 2003. Note that one anomalous detection occurred in Well T in February which to date has not been repeated. It is believed that this detection is the result of laboratory cross-contamination. Additionally as shown on **Figure 4** an increased concentration of tritium was detected in Well AP in March, and confirmed by subsequent samples. PSEG responded by reactivating the mobile groundwater extraction unit to spot remediate the area. This approach has proved effective in decreasing concentrations at Well AP. It is believed that the increased concentrations are a result of the differential pumping rates between the wells near the edge of the cofferdam (Wells S and AD) and the wells closer to the river (Wells AS and AT). The result has been a more southerly groundwater flow direction than had been anticipated. Contingency plans were developed to allow for the connection of Wells AP and W to the system in the event that flow towards the river became an issue of concern. Additionally Well Z has been monitored at an increased frequency during the evaluation of this issue. **Table 3** presents the planned monitoring schedule thorough August of 2005.

The trends for tritium concentrations for wells screened in the shallow, water-bearing unit indicate that groundwater extraction associated with the groundwater extraction system has demonstrated the ability to achieve the remedial action objectives (i.e., reduce the mass of tritium in groundwater). The current distribution of tritium in groundwater (June 2005) is presented on **Figure 3**, along with the distribution of tritium prior to the initiation of the pilot study (March 2004) and in December 2004 during the eighth month of the pilot study. As shown on **Figure 3**, the mass of tritium in groundwater has continued to decrease through the operation of the groundwater extraction pilot study system and operation of the full-scale system.

Groundwater Extraction

In accordance with the RAWP, groundwater extraction activities completed to date consisted of the operation of the pilot-study from April 26, 2004 to February 11, 2005 and operation of the full scale system from February 16, 2005 to present.

Full-Scale System

Based on the results of the pilot study, a full-scale system was designed and installed. The objectives of the full-scale system, are the following: 1) to maintain hydraulic containment of the tritium plume; and, 2) to reduce tritium concentrations in groundwater.

The present full-scale system consists of the extraction of groundwater from Wells S, AB, AD, AJ, AN, AS and AT. Well AO continues to be secured to prevent interference with diesel fuel oil recovery operations and Well S has been operating intermittently as a result of its low yield. Groundwater extracted from the wells is processed in accordance with the Station's United States Nuclear Regulatory Commission (USNRC) license and plant procedures.

The full scale system is periodically shut down to service the integrators used to monitor system output. Ten such shut downs occurred during this reporting period resulting in less than 15 days of system down time.

Mobile Groundwater Extraction Unit

In response to increased concentrations of tritium detected in well AP beginning in March 2005, the Mobile Groundwater Extraction unit was reactivated to recover groundwater from Well AP. The effectiveness of the use of the Mobile Groundwater Extraction Unit was evaluated through increased monitoring of groundwater at this well. In the event that more frequent pumping is required from Well AP provisions were made in the design of the system to allow Well AP to be connected to the groundwater extraction system.

Following extraction, groundwater held in the mobile unit is re-circulated for approximately two hours and sampled for characterization. Following characterization, the groundwater is disposed of in accordance with the Station's United States Nuclear Regulatory Commission (USNRC) license and plant procedures. **Table 4** presents the details of each mobile system discharge cycle.

Reactivation of the mobile unit was effective in removing the groundwater with elevated concentrations of tritium from Well AP. As of June 21 the concentration had decreased from 106,000 pCi/L (June 6) to 46,400 pCi/L and, as of July 6 the concentration had decreased to below Salem Chemistry's analytical detection limits.

Total System Effluent Data and Evaluation

The full scale system became operational on February 16, 2005. The system operated in various configurations as part of the shakedown process for approximately the first month. The full scale system discharges continuously in accordance with the Station's NRC permit allowing the full-scale system to be more effective and efficient than the pilot-scale system. As of June 30, 2005, the full scale system has recovered greater than 1.4 million gallons of groundwater. This is equivalent to an average recovery rate of just over 10.7 gallons per minute or nearly 15 times the recharge rate for the extraction area (assumed to be 0.7 gallons per minute). **Table 5** presents a summary of the full-scale system discharges through June 30, 2005.

Water-Level Data and Evaluation

Water-level measurements from the extraction and select observation wells have been monitored to demonstrate that the full-scale groundwater extraction system has hydraulically contained the migration of tritium in groundwater. To demonstrate this effectiveness, water levels are periodically collected and evaluated.

Figures 5 presents the groundwater surface contours on March 19, 2004 under static (non-pumping) conditions prior to the start of the pilot study. The groundwater flow under static conditions is in a generally southwesterly direction towards the Delaware River. **Figure 6** presents the groundwater surface contours on July 7, 2005 during operation of the full scale groundwater extraction system. From **Figure 6** it is apparent that the system is effectively controlling the plume by hydraulically containing the area where elevated tritium in groundwater exists.

Cumulative Curies Removed

The various groundwater recovery activities conducted to date have been successful in recovering tritium from groundwater at and down gradient of the Salem Unit-1 seismic gap.

Full-Scale System

As summarized in **Table 5,** approximately 0.41 curies of tritium have been recovered from the operation of the groundwater extraction full-scale system through June 30, 2005. **Figure 7** summarizes the results of the groundwater remediation activities conducted using the well field. As of June 30, 2005 greater than 1.2 curies had been removed by the well field. The effectiveness is emphasized by the decrease and stabilization in system effluent concentrations since the activation of the full scale system in February of 2005. System effluent concentrations are presently around 51,000 pCi/L.

Other Remedial Actions

In addition to the operation of the groundwater extraction systems, seismic gap drains in Salem Unit 1 and Unit 2 have been have been used to drain the water from these gaps. The following sections provide a brief overview of these activities.

Operation of the Seismic Gap Drain

The permanent drains installed in the Salem Unit 1 and 2 seismic gaps facilitate the periodic collection and characterization of groundwater accumulating in the seismic gaps. The operation of these gap drains creates an inward gradient towards the gaps facilitating the recovery of water from a low accessibility area. To date, periodic operation of the seismic gap drain in Unit 1 has resulted in the recovery of approximately 23,000 gallons of tritiated water. As summarized in **Table 7,** the concentrations of tritium in the water recovered in the Unit 1 drain have been significantly higher than those detected in groundwater samples collected from Well AC and Well AM located to the southeast and southwest of the seismic gap, respectively. The Unit 1 seismic gap drain is effectively containing residual Spent Fuel Pool water in the seismic gap, and will ultimately result in the reduction of tritium concentrations in groundwater adjacent to the seismic gap. As shown on **Figure 13,** a total of approximately 3.5 curies of tritium has been recovered from the operation of the Unit 1 seismic gap drain through June 30, 2005. Concentrations have become more stable since the activation of the full scale groundwater extraction system and are presently in on the order of 37,000,000 pCi/L, down from a peak of greater than 100,000,000 pCi/L.

Analytical results for water samples collected from the Unit 2 seismic gap drain do not indicate concentrations of constituents that would indicate a similar release occurred from the Unit 2 Spent Fuel Pool. As evidenced by the lack of short-lived gamma-emitting isotopes, samples collected from Unit 1 gap drain do not indicate an ongoing or recent release of spent fuel pool water, Unit 2 gap drain water contains no plant gamma activity. Water samples will be obtained from both gap drains on a periodic basis to evaluate the water that has accumulated in the respective seismic gaps, and to provide a backup warning of a potential release of spent fuel pool water, with the primary method still remaining the monitoring of the SFP tell-tale drains.

Upcoming Activities

Activities projected for the Third Quarter of 2005 (July through September) include the following:

- Refine the procedures and protocols as necessary to adaptively manage the operation and sampling of the full scale groundwater extraction system;
- Periodic download of data from permanent data-logging pressure transducers installed in 14 wells throughout the area to demonstrate that groundwater extraction is effectively maintaining hydraulic control;
- Continued groundwater monitoring activities;
- Update the groundwater monitoring program;
- Continued operation and evaluation of data obtained through the full-scale groundwater extraction system; and,
- Submittal of the RAPR for the third quarter of 2005. The RAPR will document the progress of the full-scale groundwater extraction system.

If you have any questions or comments regarding the contents of this report, please do not hesitate to contact me at (856) 878-6920.

Sincerely,

John Ronafalvy for

Jeffrey Pantazes
Manager –
Permitting & Technical Services

C Ron Nimitz- NRC
NRC – Salem Resident Inspector
NRC – Document Room

Table 01. Well Construction Details, PSEG Nuclear, LLC, Salem Generating Station, Hancock's Bridge, New Jersey.

Well ID	Installation Date	Construction Details	Diameter (inches)	Total Depth (feet bgs)	Monitoring Interval (feet bgs)	Monitored Hydrogeologic Unit	MP Elevation (feet RPD)	MP Elevation (feet amsl)	Northing (NAD 83)	Easting (NAD 83)
Well K	Feb-03	Sch-40 PVC	2	80.0	70.0 - 80.0	Vincentown[1]	102.00	12.08	231,435	199,697
Well L	Jan-03	Sch-40 PVC	2	80.0	70.0 - 80.0	Vincentown[1]	101.46	11.54	230,933	199,263
Well M	May-03	Sch-40 PVC	1	20.0	10.0 - 20.0	Cofferdam[2]	102.17	12.25	230,843	199,546
Well N	Jan-03	Sch-40 PVC	2	20.0	10.0 - 20.0	Cofferdam[2]	101.65	11.73	230,777	199,661
Well O	Jan-03	Sch-40 PVC	2	20.0	10.0 - 20.0	Cofferdam[2]	101.33	11.41	230,804	199,839
Well P	Mar-03	Sch-40 PVC	2	80.0	70.0 - 80.0	Vincentown[1]	101.13	11.21	230,336	200,000
Well Q	Mar-03	Sch-40 PVC	2	80.0	70.0 - 80.0	Vincentown[1]	106.59	16.67	230,645	201,196
Well R	Jun-03	Sch-40 PVC	1	19.0	9.0 - 19.0	Cofferdam[2]	102.35	12.43	230,906	199,640
Well S[4]	May-03	Sch-40 PVC	2	34.7	24.7 - 34.7	Shallow[3]	99.04	9.12	230,711	199,613
Well T	Jun-03	Sch-40 PVC	2	31.2	21.2 - 31.2	Shallow[3]	104.13	14.21	231,575	199,575
Well U[4]	May-03	Sch-40 PVC	2	32.2	27.2 - 32.2	Shallow[3]	98.57	8.65	231,370	199,618
Well V[4]	Jun-03	Sch-40 PVC	2	79.5	69.5 - 79.5	Vincentown[1]	98.74	8.82	231,355	199,548
Well W[4]	Jun-03	Sch-40 PVC	2	35.0	25.0 - 35.0	Shallow[3]	98.26	8.34	230,777	199,450
Well Y	Sep-03	Sch-40 PVC	2	37.0	27.0 - 35.0	Shallow[3]	101.81	11.89	230,771	199,343
Well Z	Sep-03	Sch-40 PVC	2	37.5	27.5 - 37.5	Shallow[3]	101.86	11.94	230,681	199,399
Well AA[4]	Sep-03	Sch-40 PVC	2	36.0	26.0 - 36.0	Shallow[3]	99.07	9.15	230,603	199,541
Well AB[4]	Oct-03	Sch-40 PVC	2	42.0	32.0- 42.0	Shallow[3]	98.93	9.01	230,623	199,677
Well AC[4]	Sep-03	Sch-40 PVC	2	24.0	14.0 - 24.0	Cofferdam[2]	98.77	8.85	230,724	199,725

Notes:

MP Measuring Point
bgs Below ground surface
RPD Relative to plant datum
amsl Relative to mean sea level (NAVD 1988)
[1] Monitoring well is screened in the Vincentown Formation.
[2] Monitoring well is screened in the shallow, water-bearing unit at a location within the limits of the cofferdam.
[3] Monitoring well is screened in the shallow, water-bearing unit at a location outside the limits of the cofferdam.
[4] The surface completions of Monitoring Wells S, U, V, W, AA, AB, AC, and AD were converted from above-grade to flush-grade in February 2004.

Table 01. Well Construction Details, PSEG Nuclear, LLC, Salem Generating Station, Hancock's Bridge, New Jersey.

Well ID	Installation Date	Construction Details	Diameter (inches)	Total Depth (feet bgs)	Monitoring Interval (feet bgs)	Monitored Hydrogeologic Unit	MP Elevation (feet RPD)	MP Elevation (feet amsl)	Northing (NAD 83)	Easting (NAD 83)
Well AD[4]	Oct-03	Sch-40 PVC	6	43.0	33.0 - 43.0	Shallow[3]	98.99	9.07	230,684	199,607
Well AE	Oct-03	Sch-40 PVC	2	37.5	27.5 - 37.5	Cofferdam[2]	101.54	11.62	230,829	199,845
Well AF	Oct-03	Sch-40 PVC	2	45.0	35.0 - 45.0	Shallow[3]	101.61	11.69	230,491	199,702
Well AG-Shallow	Feb-04	Sch-40 PVC	1	24.2	14.2 - 24.2	Shallow[3]	99.29	9.37	230,496	199,508
Well AG-Deep	Feb-04	Sch-40 PVC	1	40.0	30.0 - 40.0	Shallow[3]	99.20	9.28	230,496	199,508
Well AH-Shallow	Feb-04	Sch-40 PVC	1	24.5	14.5 - 24.5	Shallow[3]	102.58	12.66	230,450	199,596
Well AH-Deep	Feb-04	Sch-40 PVC	1	40.0	30.0 - 40.0	Shallow[3]	102.70	12.78	230,450	199,596
Well AI	Jan-04	Sch-40 PVC	4	22.0	12.0 - 22.0	Cofferdam[2]	98.79	8.87	230,798	199,521
Well AJ	Jan-04	Sch-40 PVC	4	35.3	15.3 - 35.3	Shallow[3]	98.85	8.93	230,670	199,665
Well AL	Jan-04	Sch-40 PVC	2	25.3	15.3 - 25.3	Shallow[3]	99.13	9.21	230,594	199,806
Well AM	Jan-04	Sch-40 PVC	4	20.9	10.9 - 20.9	Cofferdam[2]	98.55	8.63	230,762	199,680
Well AN	Jun-04	Sch-40 PVC	4	25.0	10.0 - 25.0	Cofferdam2	98.76	8.84	230,727	199,735
Well AO	Jun-04	Sch-40 PVC	4	21.0	11.0 - 21.0	Cofferdam2	98.82	8.90	230,765	199,556
Well AP	Jun-04	Sch-40 PVC	4	40.0	15.0 - 40.0	Shallow3	98.65	8.73	230,694	199,464
Well AQ	Jun-04	Sch-40 PVC	4	45.0	20.0 - 45.0	Shallow3	99.05	9.13	230,526	199,540
Well AR	Jun-04	Sch-40 PVC	4	43.0	18.0 - 43.0	Shallow3	99.22	9.30	230,622	199,626
Well AS	Jun-04	Sch-40 PVC	4	41.5	16.5 - 41.5	Shallow3	99.44	9.52	230,566	199,604
Well AT	Jun-04	Sch-40 PVC	4	44.0	19.0 - 44.0	Shallow3	99.25	9.33	230,546	199,566

Notes:

MP Measuring Point
bgs Below ground surface
RPD Relative to plant datum
amsl Relative to mean sea level (NAVD 1988)

1 Monitoring well is screened in the Vincentown Formation.
2 Monitoring well is screened in the shallow, water-bearing unit at a location within the limits of the cofferdam.
3 Monitoring well is screened in the shallow, water-bearing unit at a location outside the limits of the cofferdam.
4 The surface completions of Monitoring Wells S, U, V, W, AA, AB, AC, and AD were converted from above-grade to flush-grade in February 2004.

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Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well K	10/04/04	485	156	100	--	--	No
Well K	11/03/04	598	148	98	1.6	1,270	No
Well K	12/06/04	< 4,520	4,520	1,370	--	--	No
Well K	01/10/05	480	152	98	2.12	1,200	No
Well K	02/01/05	602	139	93	--	--	No
Well K	03/03/05	711	146	98	--	--	No
Well K	04/05/05	740	147	97	--	--	No
Well K	05/09/05	473	155	100	--	--	No
Well L	10/04/04	< 159	159	91	--	--	No
Well L	11/03/04	< 142	142	84	--	--	No
Well L	12/06/04	< 4,520	4,520	1,280	--	--	No
Well L	01/10/05	< 158	158	93	--	--	No
Well L	02/01/05	< 148	148	87	--	--	No
Well L	03/07/05	< 158	158	94	0.832	2,400	No
Well L	04/06/05	< 152	152	90	--	--	No
Well L	05/17/05	< 150	150	88	--	--	No
Well M	10/04/04	3,040	144	126	--	--	No
Well M	11/03/04	2,818	143	125	--	--	No
Well M	12/06/04	< 4,520	4,520	1,390	--	--	No
Well M	01/19/05	36,200	2,650	2,830	--	--	No
Well M	02/09/05	42,300	4,660	3,240	--	--	No
Well M	03/02/05	53,300	3,360	3,400	<3.33	24.3	No
Well M	04/11/05	24,600	4,220	2,550	--	--	No
Well M	05/03/05	10,031	147	192	--	--	No
Well M[1]	06/06/05	14,400	4,220	2,550	--	--	No

Notes:

LLD	Lower Limit of Detection
mg/L	Milligrams per liter
pCi/L	Picocuries per liter
1	Reported analytical results are from Salem Chemistry. Maplewood results are pending.
<	Constituent was not detected above the indicated laboratory detection limit.
762	Constituent was detected above the laboratory method detection limit.
20,000	Constituent was detected above its New Jersey Groundwater Quality Criteria.
NA	Not Available - Deviation and/or LLD were not reported.
--	Constituent not analyzed.

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Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well N	10/25/04	10,619	157	206	--	--	No
Well N	11/23/04	9,150	149	187	--	--	No
Well N	12/27/04	7,660	4,060	1,720	--	--	No
Well N	01/12/05	9,550	154	195	--	--	No
Well N	02/22/05	9,442	146	186	--	--	No
Well N	03/15/05	9,712	153	195	0.11	18	No
Well N	04/19/05	9,781	147	193	--	--	No
Well N	05/17/05	9,060	148	185	--	--	No
Well N[1]	06/21/05	9,010	3,750	1,770	--	--	No
Well O	10/04/04	5,543	140	151	--	--	No
Well O	10/18/04	5,874	150	161	--	--	No
Well O	11/22/04	14,027	144	218	--	--	No
Well O	12/16/04	15,000	3,230	1,950	--	--	No
Well O	01/18/05	18,840	152	257	0.297	22.4	No
Well O	02/08/05	25,400	4,660	2,640	--	--	No
Well O	03/08/05	10,911	139	195	--	--	No
Well O	04/11/05	7,096	148	170	--	--	No
Well O	05/10/05	6,722	148	167	--	--	No
Well O[1]	06/07/05	4,050	3,460	1,420	--	--	No
Well P	10/05/04	< 149	149	87	--	--	No
Well P	11/03/04	< 147	147	87	0.955	1,690	No
Well P	12/14/04	< 3,230	3,230	1,010	--	--	No
Well P	01/11/05	< 162	162	95	1.02	1,580	No
Well P	02/09/05	< 148	148	88	--	--	No
Well P	03/03/05	< 158	158	92	--	--	No
Well P	04/12/05	< 149	149	89	--	--	No
Well P	05/10/05	< 148	148	87	--	--	No

Notes:

LLD	Lower Limit of Detection
mg/L	Milligrams per liter
pCi/L	Picocuries per liter
1	Reported analytical results are from Salem Chemistry. Maplewood results are pending.
<	Constituent was not detected above the indicated laboratory detection limit.
762	Constituent was detected above the laboratory method detection limit.
20,000	Constituent was detected above its New Jersey Groundwater Quality Criteria.
NA	Not Available - Deviation and/or LLD were not reported.
--	Constituent not analyzed.

ARCADIS

Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well Q	10/04/04	< 153	153	87	--	--	No
Well Q	11/03/04	< 150	150	88	0.312	1,960	No
Well Q	12/29/04	< 4,020	4,020	1,420	--	--	No
Well Q	01/31/05	213	142	89	--	--	No
Well Q	02/15/05	< 3,910	3,910	1,130	--	--	No
Well Q	03/15/05	< 151	151	91	0.302	1,730	No
Well Q	04/18/05	< 145	145	85	--	--	No
Well Q	05/16/05	< 151	151	88	--	--	No
Well R	10/11/04	1,710	143	110	--	--	No
Well R	11/08/04	1,696	151	115	--	--	No
Well R	12/27/04	< 4,053	4,053	1,290	--	--	No
Well R	01/19/05	2,420	159	129	--	--	No
Well R	02/09/05	2,450	150	123	0.122	45.1	No
Well R	03/15/05	2,704	147	125	--	--	No
Well R	04/11/05	2,742	157	132	--	--	No
Well R	05/03/05	2,755	151	128	--	--	No
Well R[1]	06/22/05	< 3,750	3,750	1,400	--	--	No
Well S	11/08/04	820,000	3,230	12,800	--	--	No
Well S	12/28/04	661,000	4,060	11,300	--	--	No
Well S	01/11/05	753,000	3,910	12,100	--	--	No
Well S	02/15/05	724,000	3,910	11,900	--	--	No
Well S	03/07/05	364,000	3,490	8,570	--	--	No
Well S	03/14/05	175,000	4,320	6,110	--	--	No
Well S	03/23/05	182,000	3,790	6,190	--	--	No
Well S	03/28/05	40,500	6,280	3,540	--	--	No
Well S	04/18/05	326,000	4,420	8,380	--	--	No

Notes:

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pCi/L	Picocuries per liter
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Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well T	10/11/04	< 155	155	91	--	--	No
Well T	11/09/04	< 148	148	87	--	--	No
Well T	12/21/04	< 3,910	3,910	1,340	--	--	No
Well T	01/10/05	< 165	165	96	--	--	No
Well T	02/01/05	137	135	83	0.638	945	No
Well T	03/03/05	< 152	152	90	--	--	No
Well T	04/05/05	< 148	148	90	--	--	No
Well T	05/09/05	< 144	144	86	--	--	No
Well U	10/04/04	< 146	146	87	--	--	No
Well U	11/03/04	165	148	91	--	--	No
Well U	12/06/04	< 4,520	4,520	1,160	--	--	No
Well U	01/10/05	< 157	157	93	--	--	No
Well U	02/08/05	< 149	149	91	0.377	156	No
Well U	03/03/05	< 147	147	88	--	--	No
Well U	04/05/05	< 142	142	86	--	--	No
Well U	05/09/05	< 148	148	90	--	--	No
Well V	10/04/04	340	146	92	--	--	No
Well V	11/03/04	224	143	89	--	--	No
Well V	12/06/04	< 4,170	4,170	1,360	--	--	No
Well V	01/10/05	394	151	96	--	--	No
Well V	02/08/05	307	152	95	--	--	No
Well V	03/03/05	157	156	95	0.436	431	No
Well V	04/05/05	294	141	89	--	--	No
Well V	05/09/05	244	155	96	--	--	No

Notes:

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ARCADIS

Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well W	10/11/04	9,947	147	194	--	--	No
Well W	11/08/04	8,920	150	186	0.487	309	No
Well W	12/14/04	5,560	3,230	1,390	--	--	No
Well W	01/10/05	6,292	150	165	0.681	273	No
Well W	02/01/05	7,340	159	178	--	--	No
Well W	03/02/05	5,756	150	158	<3.33	26.7	No
Well W	04/05/05	8,826	155	192	--	--	No
Well W	05/02/05	12,339	147	209	--	--	No
Well W[1]	06/06/05	9,010	3,460	1,720	--	--	No
Well Y	10/11/04	< 162	162	96	--	--	No
Well Y	11/08/04	< 151	151	88	--	--	No
Well Y	12/13/04	< 3,230	3,230	1,150	--	--	No
Well Y	01/10/05	< 162	162	94	0.801	1,160	No
Well Y	02/01/05	< 154	154	92	--	--	No
Well Y	03/07/05	< 149	149	89	--	--	No
Well Y	04/06/05	< 144	144	84	0.761	1,190	No
Well Y	05/25/05	< 155	155	92	--	1,230	No
Well Y[1]	06/07/05	< 3,460	3,460	1,090	--	--	No
Well Z	10/11/04	268	144	90	--	--	No
Well Z	11/08/04	339	155	98	0.491	548	No
Well Z	12/13/04	< 3,230	3,230	1,060	--	--	No
Well Z	01/10/05	249	159	99	--	--	No
Well Z	02/01/05	228	153	95	--	--	No
Well Z	03/07/05	192	153	94	0.535	688	No
Well Z	04/06/05	274	165	103	0.506	716	No
Well Z	05/25/05	< 149	149	91	--	635	No
Well Z[1]	06/07/05	< 3,460	3,460	1,110	--	--	No
Well AA	10/11/04	1,530	146	110	--	--	No
Well AA	11/08/04	1,927	152	118	0.590	147	No
Well AA	12/14/04	< 3,230	3,230	1,130	--	--	No
Well AA	01/11/05	6,640	151	168	--	--	No
Well AA	02/02/05	11,150	155	205	--	--	No
Well AA	03/07/05	20,751	142	260	0.036	152	No
Well AA[1]	04/06/05	35,700	4,220	2,970	--	--	No
Well AA[1]	05/02/05	22,800	3,320	2,310	--	--	No
Well AA[1]	06/06/05	16,400	3,460	2,100	--	--	No

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Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AB	10/04/04	152,000	3,320	6,000	--	--	No
Well AB	10/12/04	152,000	2,220	5,520	--	--	No
Well AB	10/18/04	142,000	3,230	5,340	--	--	No
Well AB	11/03/04	167,000	2,720	5,850	--	--	No
Well AB	11/08/04	156,000	3,230	5,650	--	--	No
Well AB	11/15/04	161,000	3,910	5,800	--	--	No
Well AB	11/29/04	163,000	2,650	5,730	--	--	No
Well AB	12/13/04	146,000	3,230	5,410	--	--	No
Well AB	01/11/05	142,000	3,910	5,330	--	--	No
Well AB	01/27/05	160,000	2,470	5,650	--	--	No
Well AB	01/31/05	156,000	4,560	5,770	--	--	No
Well AB	02/01/05	155,000	2,650	5,630	--	--	No
Well AB	02/08/05	141,000	4,660	5,560	--	--	No
Well AB	03/02/05	151,376	144	664	--	--	No
Well AB	03/07/05	160,000	3,490	5,770	--	--	No
Well AB	03/14/05	158,000	4,320	5,760	--	--	No
Well AB	03/23/05	163,000	3,790	5,830	--	--	No
Well AB	03/28/05	153,000	6,280	5,920	--	--	No
Well AB	04/18/05	135,000	4,420	5,470	--	--	No
Well AB	05/18/05	224,000	3,490	7,050	--	--	No
Well AB	06/22/05	97,300	3,750	4,460	--	--	No
Well AC	09/01/04	1,940,000	4,520	19,400	--	--	No
Well AC	01/11/05	699,000	3,910	11,600	--	--	No
Well AC	01/17/05	680,000	3,360	11,600	--	--	No
Well AC	02/09/05	614,000	4,660	11,200	--	--	No
Well AC	04/29/05	32,400	3,320	2,650	--	--	No
Well AC	05/25/05	34,100	3,320	2,760	--	--	No
Well AC	06/16/05	26,300	3,750	2,520	--	--	No

Notes:

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Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AD	03/02/05	672,000	3,670	11,700	--	--	No
Well AD	03/07/05	613,000	3,490	11,300	--	--	No
Well AD	03/14/05	717,000	4,320	12,100	--	--	No
Well AD	03/23/05	558,000	3,790	10,700	--	--	No
Well AD	03/28/05	42,200	6,280	3,640	--	--	No
Well AD	04/18/05	481,000	4,420	10,000	--	--	No
Well AD	05/18/05	449,000	3,490	9,320	--	--	No
Well AD	06/22/05	340,000	3,750	8,160	--	--	No
Well AE	10/18/04	5,375	150	156	--	--	No
Well AE	11/22/04	4,636	152	149	--	--	No
Well AE	12/16/04	< 3,230	3,230	1,200	--	--	No
Well AE	01/18/05	7,530	164	185	--	--	No
Well AE	02/08/05	10,100	147	192	0.099	10.8	No
Well AE	03/08/05	13,026	142	212	--	--	No
Well AE	04/11/05	8,832	157	192	--	--	No
Well AE	05/10/05	9,305	147	187	--	--	No
Well AE[1]	06/07/05	10,200	3,460	1,790	--	--	No
Well AF	10/12/04	< 151	151	90	--	--	No
Well AF	11/16/04	168	153	94	--	--	No
Well AF	12/21/04	< 3,910	3,910	1,130	--	--	No
Well AF	01/11/05	< 3,910	3,910	1,180	--	--	No
Well AF	02/08/05	< 154	154	94	0.644	843	No
Well AF[1]	03/14/05	< 4,320	4,320	1,240	--	--	No
Well AF	04/11/05	363	148	94	--	--	No
Well AF	05/09/05	245	143	89	--	--	No

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Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AG-Deep	10/05/04	8,613	156	190	--	--	No
Well AG-Deep	10/18/04	12,456	144	209	--	--	No
Well AG-Deep	11/04/04	7,424	139	167	--	--	No
Well AG-Deep	11/09/04	31,500	3,230	2,690	--	--	No
Well AG-Deep	11/15/04	11,993	150	209	--	--	No
Well AG-Deep	11/22/04	3,813	148	138	--	--	No
Well AG-Deep	11/29/04	8,860	2,650	1,580	--	--	No
Well AG-Deep	12/07/04	< 4,170	4,170	1,510	--	--	No
Well AG-Deep	12/14/04	6,910	3,230	1,500	--	--	No
Well AG-Deep	12/21/04	< 3,910	3,910	1,370	--	--	No
Well AG-Deep	12/28/04	5,710	4,060	1,570	--	--	No
Well AG-Deep	01/07/05	6,300	150	166	--	--	No
Well AG-Deep	01/11/05	8,700	143	180	--	--	No
Well AG-Deep	01/18/05	4,880	154	153	0.823	836	No
Well AG-Deep	01/26/05	4,040	141	139	--	--	No
Well AG-Deep	02/02/05	6,455	155	168	--	--	No
Well AG-Deep	02/09/05	6,310	149	162	--	--	No
Well AG-Deep	02/14/05	5,995	146	159	--	--	No
Well AG-Deep	02/22/05	9,570	155	107	--	--	No
Well AG-Deep	03/03/05	1,099	148	105	--	--	No
Well AG-Deep	03/07/05	937	155	106	--	--	No
Well AG-Deep	03/14/05	1,026	143	101	--	--	No
Well AG-Deep	03/23/05	1,203	149	107	--	--	No
Well AG-Deep	03/28/05	1,271	141	102	--	--	No
Well AG-Deep	04/05/05	764	169	113	0.390	1,060	No
Well AG-Deep	04/18/05	938	162	111	0.344	971	No
Well AG-Deep	05/03/05	1,380	149	109	--	958	No
Well AG-Deep	05/16/05	798	144	98	--	876	No
Well AG-Deep[1]	6/6/056	< 3,460	3,460	1,150	--	--	No

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Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AG-Shallow	10/05/04	11,088	154	207	--	--	No
Well AG-Shallow	10/18/04	16,353	143	233	--	--	No
Well AG-Shallow	11/04/04	15,313	150	231	--	--	No
Well AG-Shallow	11/09/04	22,100	3,230	2,320	--	--	No
Well AG-Shallow	11/15/04	21,200	3,910	2,390	--	--	No
Well AG-Shallow	11/22/04	20,300	4,220	2,350	--	--	No
Well AG-Shallow	11/29/04	21,300	2,650	2,220	--	--	No
Well AG-Shallow	12/07/04	23,700	4,170	2,480	--	--	No
Well AG-Shallow	12/14/04	23,300	3,230	2,330	--	--	No
Well AG-Shallow	12/21/04	23,700	4,020	2,700	--	--	No
Well AG-Shallow	12/28/04	22,200	4,060	2,380	--	--	No
Well AG-Shallow	01/07/05	28,800	3,910	2,610	--	--	No
Well AG-Shallow	01/11/05	33,200	3,910	2,770	--	--	No
Well AG-Shallow	01/18/05	29,400	3,950	2,630	--	--	No
Well AG-Shallow	01/26/05	21,600	149	267	--	--	No
Well AG-Shallow	02/02/05	29,700	4,660	2,810	--	--	No
Well AG-Shallow	02/09/05	27,200	4,660	2,710	--	--	No
Well AG-Shallow	02/14/05	24,300	3,910	2,480	--	--	No
Well AG-Shallow	02/22/05	11,929	154	211	--	--	No
Well AG-Shallow	03/03/05	6,994	158	174	--	--	No
Well AG-Shallow	03/07/05	7,239	136	164	--	--	No
Well AG-Shallow	03/14/05	7,693	143	171	--	--	No
Well AG-Shallow	03/23/05	9,248	147	187	--	--	No
Well AG-Shallow	03/28/05	9,399	141	183	--	--	No
Well AG-Shallow	04/05/05	9,357	143	187	0.175	240	No
Well AG-Shallow	04/18/05	3,472	152	138	0.144	426	No
Well AG-Shallow	05/03/05	6,858	151	169	--	236	No
Well AG-Shallow	05/16/05	2,493	146	121	--	876	No
Well AG-Shallow[1]	06/06/05	< 3,460	3,460	1,200	--	--	No

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Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AH-Deep	10/18/04	308	144	90	--	--	No
Well AH-Deep	11/15/04	< 3,910	3,910	1,328	--	--	No
Well AH-Deep	12/20/04	< 3,910	3,910	1,130	--	--	No
Well AH-Deep	01/11/05	487	154	100	0.235	250	No
Well AH-Deep	02/15/05	493	147	96	--	--	No
Well AH-Deep	03/08/05	529	146	96	--	--	No
Well AH-Deep	04/18/05	407	150	96	0.298	673	No
Well AH-Deep	05/16/05	492	146	95	--	654	No
Well AH-Deep[1]	06/07/05	< 3,460	3,460	1,090	--	--	No
Well AH-Shallow	10/18/04	420	159	101	--	--	No
Well AH-Shallow	11/15/04	< 3,910	3,910	1,235	--	--	No
Well AH-Shallow	12/20/04	< 3,910	3,910	1,130	--	--	No
Well AH-Shallow	01/11/05	658	163	107	0.446	61.3	No
Well AH-Shallow	02/15/05	633	146	97	--	--	No
Well AH-Shallow	03/08/05	614	147	97	--	--	No
Well AH-Shallow	04/18/05	319	146	92	0.138	216	No
Well AH-Shallow	05/16/05	249	150	93	--	277	No
Well AH-Shallow[1]	06/07/05	< 3,460	3,460	1,090	--	--	No
Well AI	12/27/04	13,120	153	222	--	--	No
Well AI	04/19/05	11,600	4,420	2,040	--	--	No
Well AI[1]	05/10/05	31,100	3,320	2,420	--	--	No
Well AI[1]	06/21/05	34,400	3,750	2,820	--	--	No

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		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AJ	10/18/04	54,800	3,230	3,560	--	--	No
Well AJ	11/16/04	193,000	3,910	6,440	--	--	No
Well AJ	12/28/04	144,000	2,820	5,450	--	--	No
Well AJ	01/12/05	366,000	3,910	8,540	--	--	No
Well AJ	02/14/05	331,000	3,910	8,260	--	--	No
Well AJ	03/02/05	218,000	3,670	5,710	--	--	No
Well AJ	03/07/05	155,000	3,490	5,670	--	--	No
Well AJ	03/14/05	172,000	4,320	6,120	--	--	No
Well AJ	03/23/05	70,400	3,790	3,720	--	--	No
Well AJ	03/28/05	152,000	6,280	5,880	--	--	No
Well AJ	04/18/05	139,000	4,420	5,490	--	--	No
Well AJ	05/18/05	122,000	3,490	4,900	--	--	No
Well AL	10/12/04	< 146	146	85	--	--	No
Well AL	11/16/04	< 3,910	3,910	1,126	--	--	No
Well AL	12/21/04	< 3,910	3,910	1,130	--	--	No
Well AL	01/11/05	< 157	157	92	--	--	No
Well AL	02/08/05	< 157	157	92	0.230	73.5	No
Well AL	03/14/05	< 146	146	87	--	--	No
Well AL	04/11/05	< 158	158	93	--	--	No
Well AL	05/09/05	< 150	150	88	--	--	No
Well AM	10/25/04	124,000	3,030	5,080	--	--	No
Well AM	11/23/04	116,000	4,220	4,940	--	--	No
Well AM	12/27/04	103,000	4,060	4,590	--	--	No
Well AM	01/12/05	108,000	3,910	4,660	--	--	No
Well AM	02/22/05	89,300	3,550	4,340	--	--	No
Well AM	03/15/05	76,900	4,320	4,100	--	--	No
Well AM	04/19/05	54,200	4,420	3,570	--	--	No
Well AM	05/17/05	58,400	3,490	3,480	--	--	No
Well AM[1]	06/21/05	53,800	3,750	3,420	--	--	No

Notes:

LLD	Lower Limit of Detection
mg/L	Milligrams per liter
pCi/L	Picocuries per liter
1	Reported analytical results are from Salem Chemistry. Maplewood results are pending.
<	Constituent was not detected above the indicated laboratory detection limit.
762	Constituent was detected above the laboratory method detection limit.
20,000	Constituent was detected above its New Jersey Groundwater Quality Criteria.
NA	Not Available - Deviation and/or LLD were not reported.
--	Constituent not analyzed.

Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AN	10/25/04	8,950	147	185	--	--	No
Well AN	11/23/04	6,245	144	158	--	--	No
Well AN	12/29/04	< 4,020	4,020	1,210	--	--	No
Well AN	01/12/05	6,180	159	169	--	--	No
Well AN	03/02/05	192,000	3,670	6,300	--	--	No
Well AN	03/07/05	171,000	3,490	5,940	--	--	No
Well AN	03/14/05	154,000	4,320	5,700	--	--	No
Well AN	03/23/05	172,000	3,790	6,030	--	--	No
Well AN	03/28/05	98,900	6,280	4,900	--	--	No
Well AN	04/18/05	149,000	4,420	5,650	--	--	No
Well AN	05/18/05	121,000	3,490	4,920	--	--	No
Well AN[1]	06/22/05	98,000	3,750	4,470	--	--	No
Well AO	10/25/04	2,305	139	116	--	--	No
Well AO	11/23/04	2,570	147	123	--	--	No
Well AO	12/27/04	< 4,060	4,060	1,370	--	--	No
Well AO	01/12/05	1,780	166	125	--	--	No
Well AO	03/07/05	158,000	3,490	5,710	--	--	No
Well AO	03/14/05	138,000	4,320	5,430	--	--	No
Well AO	03/23/05	192,000	3,790	6,570	--	--	No
Well AO	03/28/05	6,395	147	162	--	--	No
Well AP	10/11/04	777	151	102	--	--	No
Well AP	11/22/04	1,531	150	112	0.204	65	No
Well AP	12/14/04	< 3,230	3,230	984	--	--	No
Well AP	01/27/05	1,200	138	102	0.160	134	No
Well AP	02/01/05	2,680	153	128	--	--	No
Well AP	03/07/05	70,300	3,490	3,970	--	--	No
Well AP	04/05/05	100,000	4,220	4,730	--	--	No
Well AP	05/02/05	94,400	3,320	1,690	--	--	No
Well AP	06/06/05	106,000	3,460	4,630	--	--	No
Well AP	06/21/05	46,400	3,750	3,220	--	--	No
Well AP	07/06/05	< 3,490	3,490	1,090	--	--	No
Well AQ	10/26/04	201	144	89	--	--	No
Well AQ	11/16/04	218	147	91	--	--	No
Well AQ	12/21/04	< 4,280	4,280	1,300	--	--	No
Well AQ	01/27/05	225	135	84	--	--	No
Well AQ	02/02/05	< 148	148	90	0.448	1,100	No
Well AQ	03/14/05	367	145	92	--	--	No
Well AQ	04/12/05	247	143	89.0	--	--	No
Well AQ	05/09/05	248	151	94.0	--	--	No

Notes:

LLD	*Lower Limit of Detection*
mg/L	Milligrams per liter
pCi/L	Picocuries per liter
1	Reported analytical results are from Salem Chemistry. Maplewood results are pending.
<	Constituent was not detected above the indicated laboratory detection limit.
762	Constituent was detected above the laboratory method detection limit.
20,000	Constituent was detected above its New Jersey Groundwater Quality Criteria.
NA	Not Available - Deviation and/or LLD were not reported.
--	Constituent not analyzed.

Table 02. Groundwater Analytical Results, PSEG Nuclear, LLC, Salem Generating Station.

Well Identification	Sample Date	Tritium			Major Cations and Anions		Plant Related Gammas Detected
		Result (pCi/L)	LLD	Deviation	Boron (mg/L)	Sodium (mg/L)	
Well AR	10/26/04	589,000	3,030	11,000	--	--	No
Well AR	12/28/04	423,000	4,060	9,050	--	--	No
Well AR	01/27/05	336,000	2,470	8,140	--	--	No
Well AR	02/22/05	334,000	3,550	8,220	--	--	No
Well AR	03/14/05	204,000	4,320	6,510	--	--	No
Well AR	04/12/05	233,000	4,220	7,010	--	--	No
Well AR	05/10/05	215,000	3,620	6,420	--	--	No
Well AR[1]	06/21/05	227,000	3,750	6,670	--	--	No
Well AS	10/11/04	9,899	156	200	--	--	No
Well AS	11/16/04	14,400	3,910	2,090	--	--	No
Well AS	12/21/04	15,200	3,910	2,070	--	--	No
Well AS	01/27/05	14,000	143	224	0.459	186	No
Well AS	03/02/05	23,400	3,670	2,430	--	--	No
Well AS	03/07/05	40,100	3,490	3,020	--	--	No
Well AS	03/14/05	12,600	4,320	2,080	--	--	No
Well AS	03/23/05	72,400	3,790	4,050	--	--	No
Well AS	03/28/05	67,600	6,280	4,180	--	--	No
Well AS	04/18/05	75,700	4,420	4,140	--	--	No
Well AS	05/18/05	59,200	4,420	1,600	--	--	No
Well AS[1]	06/22/05	64,900	3,750	3,730	--	--	No
Well AT	12/28/04	< 4,060	4,060	1,260	--	--	No
Well AT	01/19/05	1,991	159	124	0.286	163	No
Well AT	03/02/05	40,200	3,670	3,030	--	--	No
Well AT	03/07/05	21,200	3,490	2,330	--	--	No
Well AT	03/14/05	58,400	4,320	3,660	--	--	No
Well AT	03/23/05	10,039	150	195	--	--	No
Well AT	03/28/05	7,973	148	176	--	--	No
Well AT	04/18/05	4,974	151	153	0.267	396	No
Well AT[1]	05/18/05	3,451	151	136	--	--	No
Well AT[1]	06/22/05	< 3,750	3,750	1,300	--	--	No

Notes:

LLD	Lower Limit of Detection
mg/L	Milligrams per liter
pCi/L	Picocuries per liter
1	Reported analytical results are from Salem Chemistry. Maplewood results are pending.
<	Constituent was not detected above the indicated laboratory detection limit.
762	*Constituent was detected above the laboratory method detection limit.*
20,000	Constituent was detected above its New Jersey Groundwater Quality Criteria.
NA	Not Available - Deviation and/or LLD were not reported.
--	Constituent not analyzed.

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Table 3. Analytical Sample Schedule for Monitoring of Full-Scale Tritium Recovery System PSEG Nuclear, LLC, Salem Generating Station.

	Sampling Program Through May 31, 2005		Sampling Program Effective June 1, 2005			
Monitoring Well	Bi-Weekly	Monthly	Bi-Weekly	Monthly	Quarterly	Semi Annually
Well K		X				X
Well L		X				X
Well M		X		X		
Well N		X		X		
Well O		X		X		
Well P		X				X
Well Q		X				X
Well R		X		X		
Well S[2]		X		X		
Well T		X			X	
Well U		X			X	
Well V		X			X	
Well W		X		X		
Well Y		X		X		
Well Z		X	X	X		
Well AA		X		X		
Well AB[2]		X		X		
Well AC		X		X		
Well AD[2]		X		X		
Well AE		X		X		
Well AF		X			X	
Well AG-S	X			X		
Well AG-D	X			X		
Well AH-S		X		X		
Well AH-D		X		X		
Week AI		X		X		
Well AJ[2]		X		X		
Well AL		X			X	
Well AM		X		X		
Well AN[2]		X		X		
Well AO[1,2]						
Well AP		X	X	X		
Well AQ[3]		X				
Well AR		X		X		
Well AS[2]		X		X		
Well AT[2]		X		X		

ALL Sample collections include samples for Salem Chemistry screening for Tritium and Gamma

[1] Well out of service.

[2] Permanent System Pumping Wells

[3] Well is isolated and will not be sampled.

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Table 04. Mobile Groundwater Extraction System Operational Data and Tritium Analytical Results,
PSEG Nuclear, LLC, Salem Generating Station

Permit Number	Gallons Recovered	Date of Discharge	Tritium Results (pCi/L)
50159	1000	June 28, 2005	57,700
50170	500	July 1, 2005	68,600
50183	1000	July 22, 2005	30,900

Notes:
[1] concentration estimated based upon results of prior and following events
Site operational changes resulted in a temporary suspension of gap draining activities.
[1] resumed as of the preparation of this document

Table 05. Groundwater Extraction System Operational Data and Tritium Analytical Results,
PSEG Nuclear, LLC, Salem Generating Station

Sample Number	Release End Date	Volume Discharged	Tritium Results (pCi/L)
1	2/22/2005	137,810	36,200
2	3/1/2005	84,566	109,000
3	3/8/2005	2,687	66,500
4	3/10/2005	459	30,300
5	3/17/2005	178,372	53,900
6	3/24/2005	173,513	65,800
7	3/31/2005	143,437	72,800
8	4/7/2005	140,279	58,300
9	4/15/2005	270,445	65,300
10	4/20/2005	63,835	63,500
11	4/28/2005	99,244	61,900
12	4/28/2005	10,178	62,200
13	5/5/2005	27,366	60,100
14	5/12/2005	32,950	70,300
15	5/19/2005	23,013	59,900
16	5/26/2005	56,727	64,400
17	6/2/2005	40,437	54,400
18	6/9/2005	66,012	52,600
19	6/9/2005	80,460	60,400
20	6/16/2005	38,457	63,800
21	6/30/2005	113,247	51,500

Notes:
Groundwater extraction system activated on February 16, 2005

Table 06. Seismic Gap Drain Tritium Analytical Results, PSEG Nuclear, LLC, Salem Generating Station

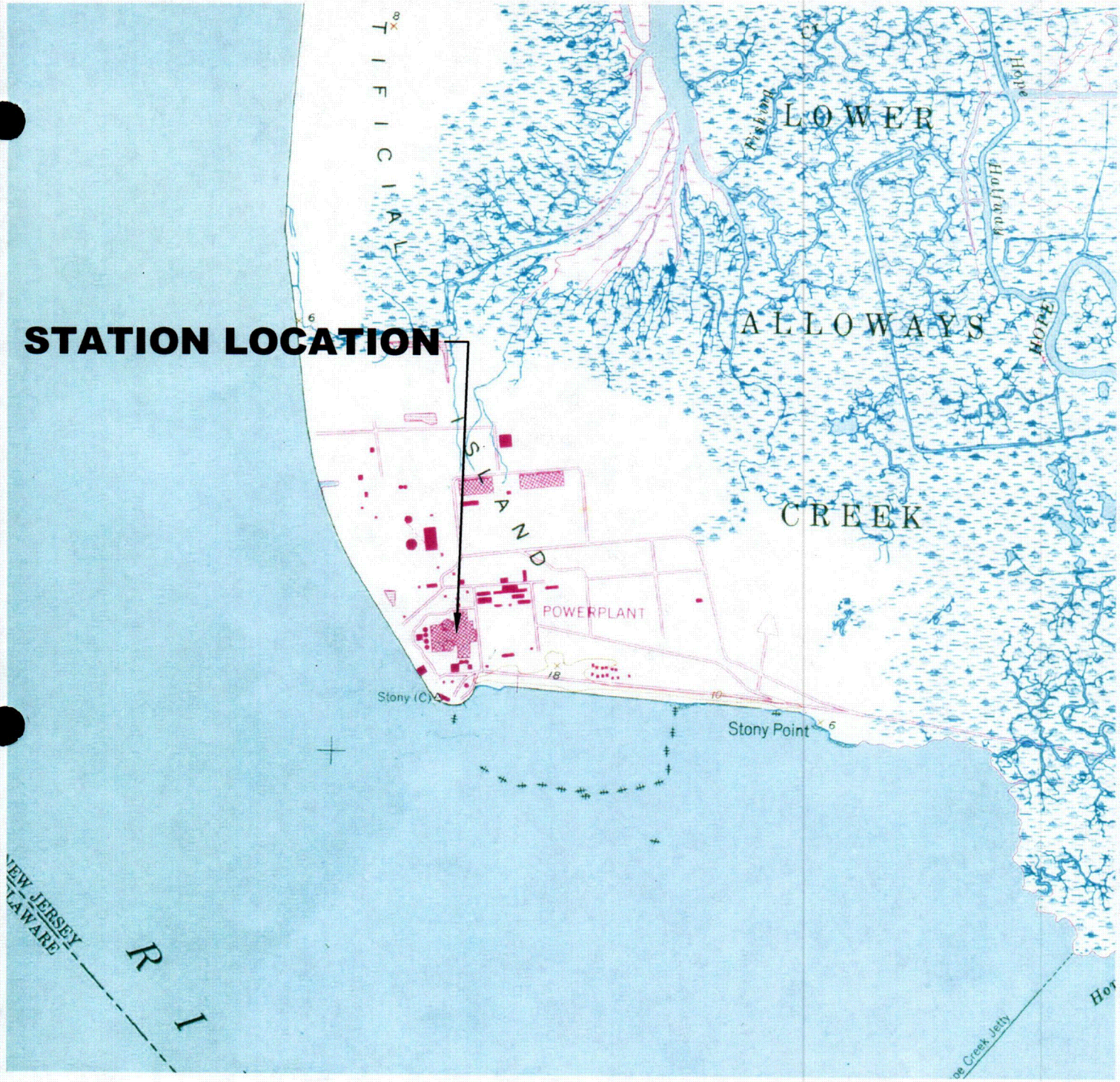
Gallons Recovered	Date of Operation	Tritium Results (pCi/L)
300	October 5, 2004	2,590,000
365	October 13, 2004	74,600,000
500	October 21, 2004	75,600,000
560	October 27, 2004	1,920,000
550	November 3, 2004	66,300,000
500	November 8, 2004	103,000,000
500	November 15, 2004	61,900,000
550	November 23, 2004	46,800,000
475	December 1, 2004	40,400,000
600	December 8, 2004	63,400,000
200	December 14, 2004	44,800,000
500	December 21, 2004	89,900,000
300	January 4, 2005	13,600,000
600	January 11, 2005	40,900,000
1000	January 19, 2005	17,700,000
500	January 24, 2005	57,900,000
525	February 2, 2005	46,700,000
500	February 9, 2005	53,800,000
500	February 25, 2005	895,000
500	February 28, 2005	59,400,000
500	March 9, 2005	31,800,000
500	April 1, 2005	39,300,000
475	April 13, 2005	34,600,000 [1]
500	April 21, 2005	29,900,000
500	May 11, 2005	25,600,000
450	May 19, 2005	33,400,000
600	May 25, 2005	37,400,000
475	June 9, 2005	35,800,000

Notes:

[1] concentration estimated based upon results of prior and following events

Site operational changes resulted in a temporary suspension of gap draining activities.

Draining activities had resumed as of the preparation of this document



SCALE 1:24000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRANGLE LOCATION

MN GN

10 ½° 187 MILS 0°21' 6 MIL

UTM GRID AND 1981 MAGNETIC NORTH

SOURCE: USGS 7.5 MIN. TOPOGRAPHICAL QUADRANGLE TAYLORS BRIDGE, DEL–N.J. 1948, PHOTOREVISED 1981.

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DRAWN	DATE	PROJECT MANAGER	DEPARTMENT MANAGER
M. WASILEWSKI	4/26/04	P. MILIONIS	D. FULTON
STATION LOCATION		LEAD DESIGN PROF. S. POTTER	CHECKED B. PIERCE
PSEG NUCLEAR, LLC SALEM GENERATING STATION ARTIFICIAL ISLAND HANCOCK'S BRIDGE, NEW JERSEY		PROJECT NUMBER NP000571.0004	DRAWING NUMBER 1

G:\APROJECT\PSE&G\Salem – Tritium\NP000571.0004 – Remedial Actions\CADD\RAPRs\RAPR – 3 –Q2 2005\FIG–01 – STATION LOCATION.DWG 8/03/2005 – 2:07:06 PM Layout: 8.5x11 H

C01

THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

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D-01

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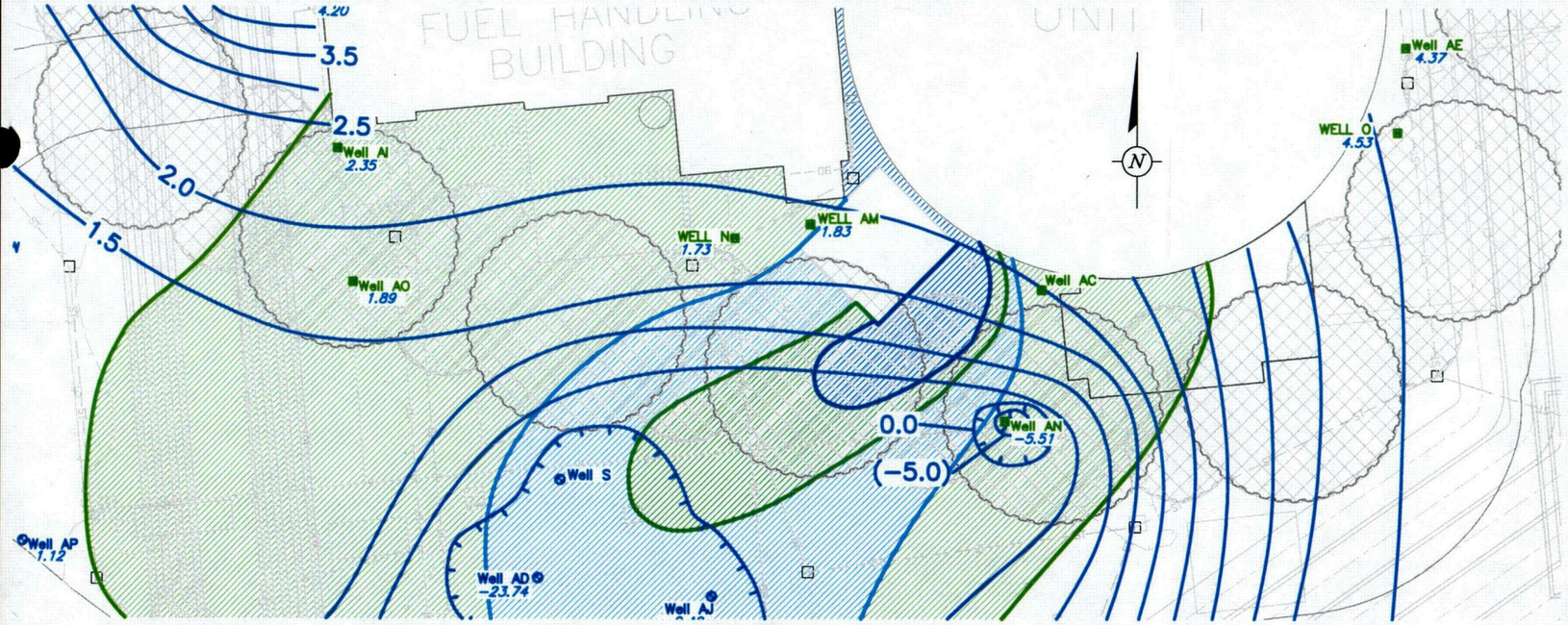
D-02



PLAN
SCALE: 1"=40'

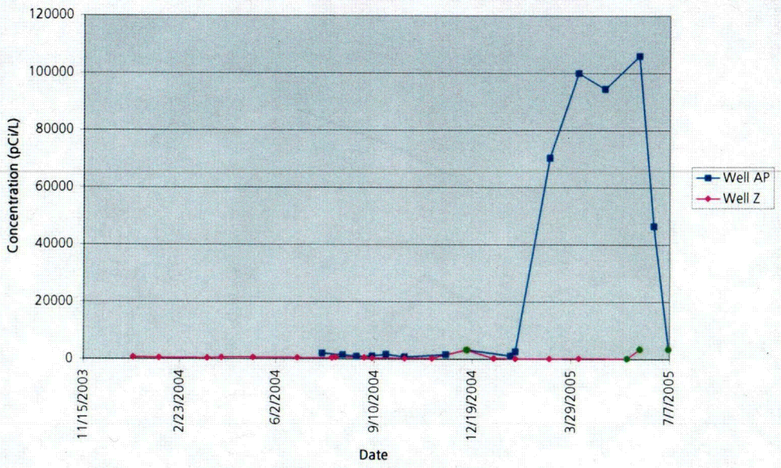
LEGEND:

- WELL R — MONITORING WELL SCREENED IN THE SHALLOW, WATER-BEARING UNIT WITHIN THE LIMITS OF THE COFFERDAM, 20 FEET DEEP- TYPICAL (WELLS M, N, O, R, AC, AE, AI AND AM).
- WELL S — MONITORING WELL SCREENED IN THE SHALLOW, WATER-BEARING UNIT OUTSIDE THE LIMITS OF THE COFFERDAM, 35 FEET DEEP- TYPICAL (WELLS S, T, U, W, Y, Z, AA, AB, AD, AF, AG(SHALLOW & DEEP, AH(SHALLOW & DEEP), AJ AND AL).
- WELL L — MONITORING WELL SCREENED IN THE VINCENTOWN FORMATION, 80 FEET DEEP- TYPICAL (WELLS K, L, P, Q AND V).
- 3.19 — GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL - NAVD 1988)
- 1.00 — GROUNDWATER ELEVATION CONTOUR (0.5 FOOT INTERVAL)
- GROUNDWATER FLOW DIRECTION
- LIMIT OF GROUNDWATER WITH TRITIUM ABOVE 1,000,000 pCi/L
- LIMIT OF GROUNDWATER WITH TRITIUM ABOVE 500,000 pCi/L
- LIMIT OF GROUNDWATER WITH TRITIUM ABOVE 100,000 pCi/L
- LIMIT OF GROUNDWATER WITH TRITIUM ABOVE THE NEW JERSEY GROUNDWATER QUALITY CRITERION (20,000 pCi/L)
- PROPERTY BOUNDARY
- BLOW DOWN PIPING
- LIQUID "RAD" WASTE LINE
- SERVICE WATER PIPING
- CIRCULATING WATER OUTLET PIPING
- CIRCULATING WATER INLET PIPING
- STORM SEWER PIPING
- CATCH BASIN
- MANHOLE (STORM SEWER)
- SHEET PILE - EXTENDS FROM ABOVE THE WATER TABLE THROUGH THE KIRKWOOD FORMATION
- SHEET PILE - DOES NOT EXTEND TO AN ELEVATION ABOVE THE WATER TABLE.
- AFST — AUXILIARY FEEDWATER STORAGE TANK
- PWST — PRIMARY WATER STORAGE TANK
- RWST — REFUELING WATER STORAGE TANK

NOTE:

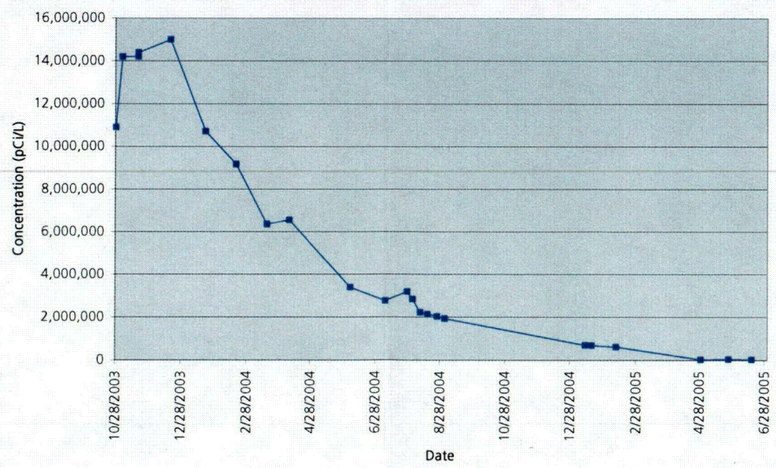
1. THE MEAN TIDE LEVEL OF THE DELAWARE RIVER AT ARTIFICIAL ISLAND IS 0.11 FT (NAVD 1988)
2. CONTOUR INTERVAL FOR WATER LEVELS LESS THAN -0.5 FEET MSL IS LOGARITHMIC.

Historic Tritium Analytical Results for Well AP and Well Z

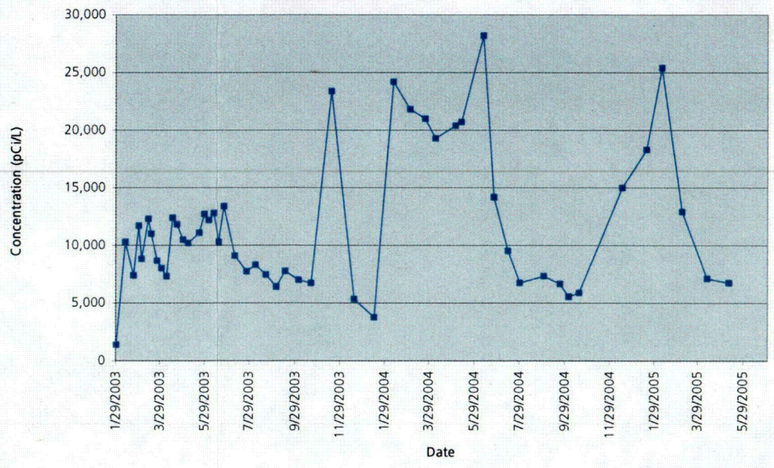


● INDICATES TRITIUM CONCENTRATIONIS BELOW THE LABORATORY DETECTION LIMIT

Historic Tritium Analytical Results for Well AC



Historic Tritium Analytical Results for Well O



NO.	DATE	REVISION DESCRIPTION	BY / CKD

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6 Terry Drive
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PSEG NUCLEAR, LLC
SALEM GENERATING STATION

ARTIFICIAL ISLAND
HANCOCK'S BRIDGE, NEW JERSEY

DRAWN	DATE	PROJECT MANAGER	DEPARTMENT MANAGER
M. WASILEWSKI	7/27/05	P. MILIONIS	M. BEDARD
		LEAD DESIGN PROF. S. POTTER	CHECKED C. SHARPE
		PROJECT NUMBER	DRAWING NUMBER

HISTORIC TRITIUM ANALYTICAL TRENDS FOR SELECT WELLS

NP000571.0004

4

C02

THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

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"WATER TABLE ELEVATION CONTOURS PRIOR TO SYSTEM START-UP MARCH 19, 2004"

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D-03

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DRAWING NO. 6

"WATER TABLE ELEVATION CONTOURS DURING OPERATION OF THE PERMANENT SYSTEM JULY 7, 2005"

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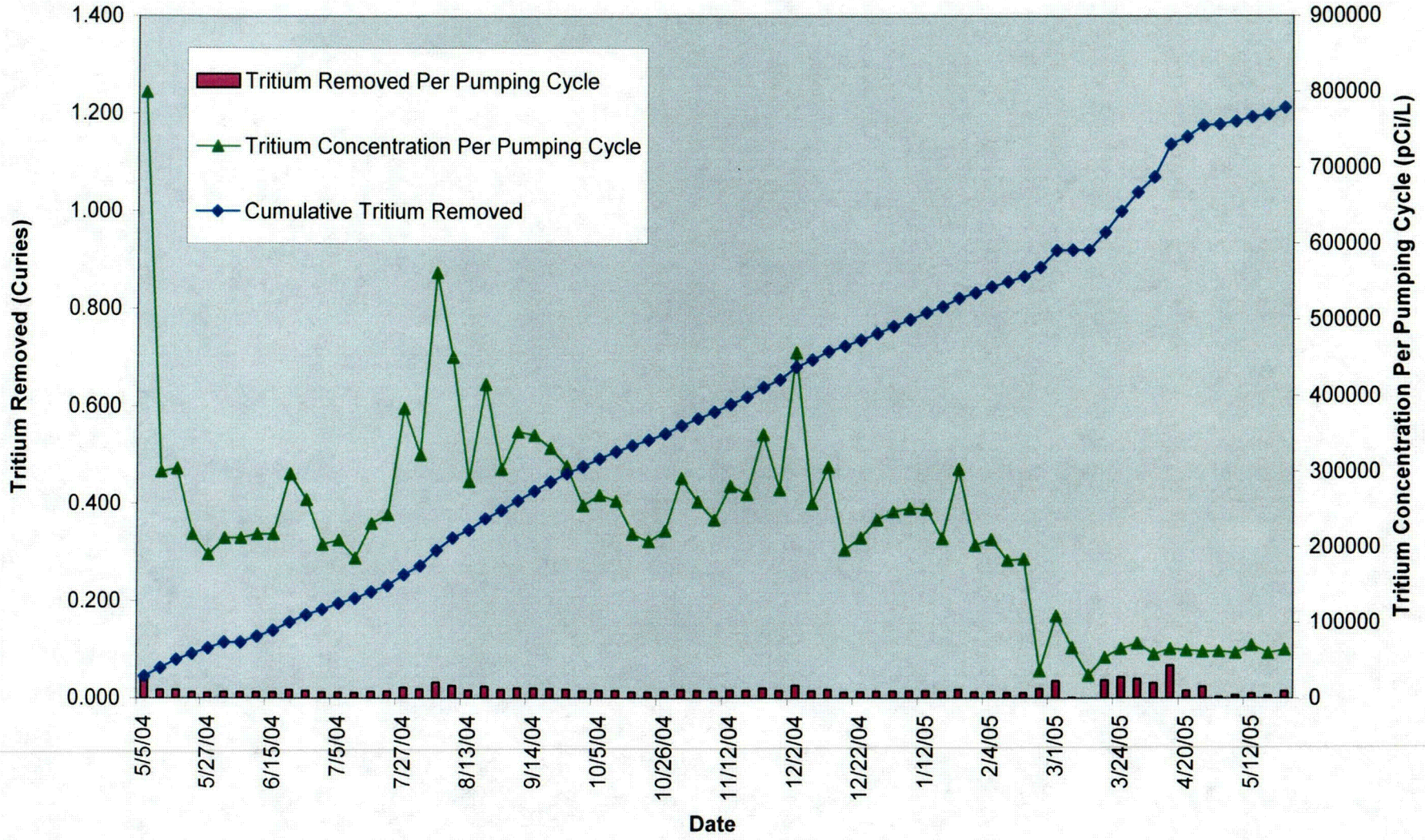
PSEG Nuclear, LLC Salem Generating Station - Unit 1
Tritium Recovered Through Well Field Operation



ARCADIS

PSEG NUCLEAR, LLC
SALEM GENERATING STATION
ARTIFICIAL ISLAND
HANCOCK'S BRIDGE, NEW JERSEY

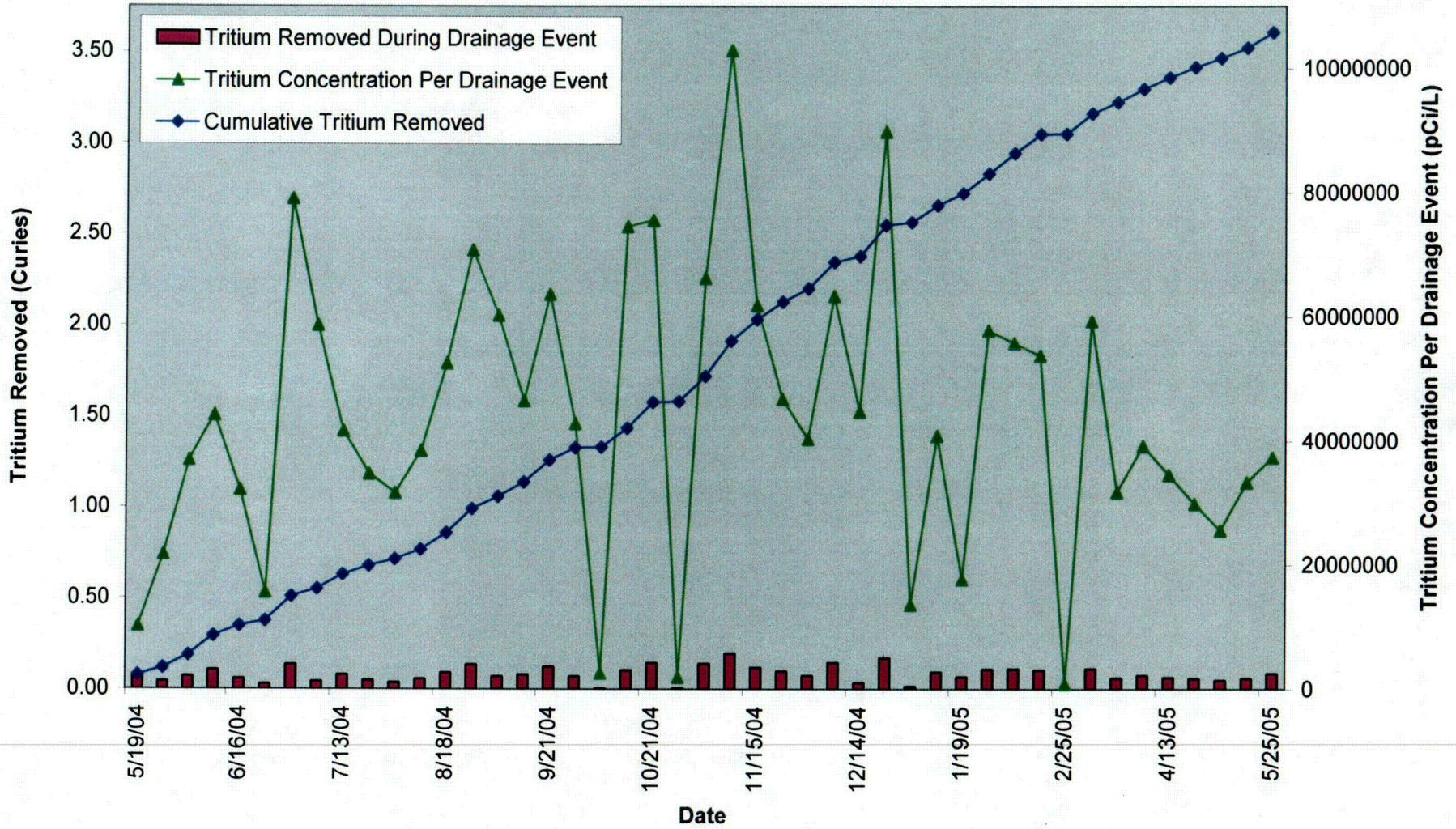
DRAWN	DATE	PROJECT MANAGER	DEPARTMENT MANAGER
M. WASILEWSKI	7/27/05	P. MILIONIS	M. BEDARD
		LEAD DESIGN PROF. S. POTTER	CHECKED B. PIERCE

HISTORIC TRITIUM RECOVERED THROUGH WELL FIELD OPERATION

PROJECT NUMBER	DRAWING NUMBER
NP000571.0004	7

603

PSEG Nuclear, LLC Salem Generating Station - Unit 1
Tritium Recovered Through Seismic Gap Drain Operation



ARCADIS

PSEG NUCLEAR, LLC
SALEM GENERATING STATION
ARTIFICIAL ISLAND
HANCOCK'S BRIDGE, NEW JERSEY

HISTORIC TRITIUM RECOVERED THROUGH SEISMIC GAP DRAIN OPERATION

DRAWN	DATE	PROJECT MANAGER	DEPARTMENT MANAGER
M. WASILEWSKI	7/27/05	P. MILIONIS	M. BEDARD
		LEAD DESIGN PROF. S. POTTER	CHECKED B. PIERCE
		PROJECT NUMBER NP000571.0004	DRAWING NUMBER 8

C04