GZA GeoEnvironmental, Inc.

FINAL
IPEC QUARTERLY LONG-TERM GROUNDWATER MONITORING REPORT
QUARTER ONE 2009
(REPORT NO. 5)
INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

PREPARED FOR:

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Re: **FINAL IPEC Quarterly Groundwater Monitoring Report**
Quarter One 2009 (Report No. 5)
Indian Point Energy Center
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Dear Mr. Donahue:

GZA GeoEnvironmental of New York (GZA) is pleased to provide this Quarterly Groundwater Monitoring Report for Indian Point Energy Center located at 450 Broadway, Buchanan, NY.

We trust that this information satisfies your present needs. Should you need any additional information, please do not hesitate to call us at (781) 278-3805.

Very truly yours,

GZA GEOENVIRONMENTAL OF NEW YORK

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TABLE OF CONTENTS

Page

1.0 EXECUTIVE SUMMARY 1-1

2.0 SCOPE OF WORK 2-1

2.1 Groundwater Elevation Measurement 2-1
2.2 Groundwater Sampling 2-1
2.3 Vapor Containment Building Foundation Drain Sampling 2-2
2.4 Preventative Maintenance 2-3
2.5 Confirmatory Sample Collection 2-3

3.0 DATA EVALUATION 3-1

3.1 Groundwater Mass Flux 3-1
3.1.1 Groundwater Mass Flux Computation 3-1
3.1.2 Quarterly Groundwater Mass Flux Calibration 3-2
3.2 Groundwater Sampling 3-4
3.2.1 Groundwater Sampling Results 3-5
3.3 Radionuclide Release Rates 3-5
3.4 SSCs and Property Boundary Monitoring 3-6
3.4.1 Previous Q4-2008 Investigation Level Exceedances 3-8
3.4.2 Q1-2009 Boundary Investigation Levels 3-10
3.4.3 Q1-2009 SSC Investigation Levels 3-10
3.4.4 Conclusions - Boundary and SSC Leak Detection Monitoring 3-13
3.5 Plume Natural Attenuation Monitoring 3-14
3.6 Unit 2 Spent Fuel Pool Integrity Analysis 3-15
3.6.1 Individual Downgradient Monitoring Well Tritium Analyses 3-16
3.6.2 Individual Upgradient Monitoring Well Tritium and Tracer Analyses (MW-31 and MW-32) 3-19
3.6.3 Tritium Plume Total Activity Analysis 3-21
3.6.4 Collection Box Data 3-25
3.6.5 Minimum Detectable Leak Rate 3-27
3.6.6 Conclusions – Unit 2 SFP integrity 3-27

4.0 CONCLUSIONS AND PLANNED ACTIVITIES 4-1

TABLES

Table 1 Groundwater Sampling Methods, Equipment, Frequency, and Depths
Table 2 2009 1st Quarter Low Tide Groundwater Elevations
Table 3 2009 1st Groundwater Analytical Results and Averages
Table 4 2009 1st Quarter Groundwater Analytical Results
Table 5 Historic Groundwater Analytical Results

FIGURES

Figure 1 Site Location Plan
Figure 2 Site Plan
Figure 3 Lower Hudson Valley Geologic Map
Figure 4 Current and Potential Future SSC Source Locations
Figure 4A Unit 3 – Cross-Section C-C"
Figure 5 1st Quarter 2009 Shallow and Deep Groundwater Contours
Figure 5A 1st Quarter 2009 Long-Term Transducer Monitoring Evaluation Map
Figure 6 1st Quarter 2009 Average Tritium Activity Map
Figure 7 1st Quarter 2009 Average Strontium-90 Activity Map
Figure 7A Sr-90 Baseline Analysis – Unit 1 Defueling Evaluation
Figure 8 1st Quarter 2009 Average Cesium, Cobalt, and Nickel Activity Map

APPENDICES

Appendix A: Limitations
Appendix B: Transducer Installation Logs
Appendix C: Chains of Custody
Appendix D: 1st Quarter 2009 Sampling Data Sheets
Appendix E: Post-Q1 2009 Mid-Quarter Sampling Data Sheets
Appendix F: Dose Calculations
Appendix G: Unit 2 Tritium Plume Trend Analyses
Appendix H: Recent Tracer Testing Data
Appendix I: Leak Collection Box Data
Appendix J: Lafarge Well LAF-002 Refurbishment
Appendix K: Groundwater Level Transducer Redeployment

1.0 EXECUTIVE SUMMARY

On behalf of Entergy Nuclear Northeast, Inc., GZA GeoEnvironmental of New York (GZA) has completed the Q1 2009 quarterly groundwater monitoring for the Indian Point Energy Center (IPEC). The radionuclide concentrations measured during Q1 2009 were combined with previous quarterly data[1] to compute rolling average concentrations reflective of groundwater contaminant levels over the past twelve months. These data were multiplied by the associated individual groundwater flux values, derived from the Precipitation Mass Balance Model, to compute yearly average radionuclide release rates to the Discharge Canal and Hudson River. The Conceptual Site Model (CSM) continues to be validated through: 1) the ongoing verification of the Precipitation Mass Balance Model calibration, as based on groundwater elevation data collected in 2007, 2008, and 2009[2]; 2) the behavior of both the Unit 1 Strontium plume and the Unit 2 Tritium plume; and additional tracer data collected in 2008/2009.

Based on the quarterly groundwater sampling data for Q1 2009, GZA concludes that groundwater contaminants continue to migrate toward the Hudson River to the West, and have not migrated off the Site to the North, East or South.

The Q1 2009 data indicate that the Unit 2 Tritium and Unit 1 Strontium plumes contain radionuclide levels that are generally at or below those measured during previous quarterly monitoring events. We therefore conclude that no new leaks to groundwater have been detected in the Structures, Systems and Components (SSCs) monitored, with two exceptions. The first exception involves the temporary, increased leakage from the Unit 1 Spent Fuel Pool Complex (SFPs), as anticipated during the final removal of the residual fuel rods for ISFSI storage. This additional leakage during defueling was verified by the Long Term Monitoring Program, with measurement of a pronounced increase in radionuclide levels in the groundwater immediately downgradient of the Unit 1 SFPs. The second exception involves the detection of leakage from valves associated with the waste distillation tanks, which contain elevated levels of Tritium, located to the east of the Unit 1 Fuel Storage Building (FSB). While these valves are located within the FSB and the leak was initially detected visually and quickly repaired, this leakage was also independently detected by the Long Term Monitoring Program, with the measurement of a pronounced increase in Tritium levels in the groundwater proximate to these tanks. These data continue to support the validity of the current CSM for use as a basis for Long Term Monitoring Program design.

Based on the Q1 2009 data, as well as that collected during previous quarters, it currently appears that the Tritium I.L.s originally established are somewhat too sensitive relative to natural seasonal/precipitation-driven transient variations in radionuclide activities, as well as the variability inherent in the laboratory analyses. Relative to Strontium from the Unit 1 SFPs, the increases in activity in a number of monitoring points, due to the recent defueling activities, limit our ability to establish Strontium baseline levels for assessment of new I.L.s pursuant to the Monitored Natural Attenuation (MNA) of this plume. It is anticipated that this additional Strontium activity will take a number of quarters to flush through the groundwater flow system

1 In cases where samples were taken in addition to the quarterly samples (e.g., mid-quarter samples associated with refueling events or confirmatory samples to evaluate potentially false results), the additional sample data was included in the yearly averages. Prior to the Q1 09 report, the results of the mid-quarter and confirmatory samples were not included in the yearly average calculation.

2 The formulation and basis for the Precipitation Mass Balance model, as well as the overall CSM, is presented in the Hydrogeologic Site Investigation Report, January 7, 2008, prepared by GZA GeoEnvironmental, Inc, on behalf of Enercon Services, Inc., for Entergy Nuclear Northeast, Indian Point Energy Center, 450 Broadway, Buchanan, NY 10511.

and attenuate to reasonably stable levels. .As such, the existing I.L.s will continue to be used until sufficient data is collected to allow re-evaluation.

The data further indicate that the Unit 1 and Unit 2 plumes have remained relatively stable over this monitoring period, and thus are exhibiting an overall slowly decreasing trend in radionuclide levels, when the plumes are viewed in their entirety and past release events and expected seasonal variability in the sampling data are accounted for. Furthermore, the overall, continued reduction in Tritium levels in the Unit 2 plume is consistent with a conclusion that the Unit 2 SFP had ceased leaking after the transfer canal "pin hole leak" was repaired in late 2007. As such, the Unit 2 Tritium plume satisfies the requirements for Monitored Natural Attenuation (MNA). In addition to reaching this conclusion through visual inspection of the limited available data, as in previous quarterly reports, more quantitative data analyses have been conducted for inclusion in this Q1 2009 quarterly report[3] (see **Section 3.6**). The results of these more quantitative analyses support the previous, more qualitative analyses; i.e., that the existing data are consistent with a conclusion that the Unit 2 SFP is no longer leaking. Although these data do not definitively rule out the possibility of a remaining small leak, and while it is not possible to quantify the size of the minimum detectable leak with any degree of certainty, we believe that the maximum leak rate from the Unit 2 SFP that could potentially remain undetected by the groundwater monitoring system is less than 10 to 30 gpd. The primary difficulty in definitively establishing if <u>any</u> leaks remain in the Unit 2 SFP is associated with the episodic release of Tritium from that stored in the subsurface via natural and anthropogenic retention mechanisms[4]. The validity of the CSM, which incorporates these storage mechanisms, is now even more certain given the additional tracer test analyses provided herein. Therefore, the ultimate confirmation of the above conclusions will require monitoring over a number of years so as to demonstrate continued depletion of Tritium from the retention mechanisms and allow ranges in seasonal variation to be adequately reflected in the monitoring data.

While it is not yet possible to conclude that no leaks of any size remain in the Unit 2 SFP, it is also likely that if a small leak does exist, it is <u>not</u> getting worse with time, as based on liner evaluations previously conducted by Entergy[5]. It is further emphasized that while a leak of 10 to 30 gpd should be large enough to be readily detectable with the existing Long Term Monitoring Program, this amount of Tritium release to the river is still small compared to that which is currently permitted for release to the river through the Discharge Canal.

Overall, GZA believes that continued monitoring will further demonstrate decreasing long term trends in groundwater contaminant activities over time, for both the Unit 1 and Unit 2 plumes, given the source interdictions completed to date by Entergy.

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3 The results of these more quantitative analyses have previously been presented to the NRC during the Deviation Memo Closeout Meeting of August 18 and 19,2009. Additional analyses were then also performed in response to NRC suggestions presented at that meeting. The preparation and finalization of this quarterly report was delayed so as to include these additional analyses. Given the timing of the NRC meeting, some data beyond that associated with Quarter 1 became available and was therefore used to increase the robustness of the associated analyses and is thus included herein.
4 These retention mechanisms are discussed along with the CSM in the previously cited Hydrogeologic Site Investigation Report.
5 As part of the overall Unit 2 SFP liner integrity evaluation, Entergy undertook testing of a number of welds relative to the potential for ongoing corrosion, such as due to Microbial-Influenced Corrosion (MIC). It was concluded that there was no evidence of ongoing corrosion.

2.0 SCOPE OF WORK

During Q1 2009, GZA performed groundwater monitoring activities at IPEC in Buchanan, New York (Site) as part of IPEC's overall Long Term Groundwater Monitoring Program (LTMP) at the Site[6]. The overall foundation for the development and execution of this LTMP is based on the CSM, a description of which is contained within GZA's Hydrogeologic Site Investigation Report[7]. The scope of work completed for this quarter's monitoring is described in the Sections below. Refer to **Figures 1 and 2** for a Site Location Plan and Site Plan. **Figure 3** provides a Lower Hudson Valley Geologic Map and **Figure 4** summarizes Current and Potential Future SSC Source Locations.

2.1 Groundwater Elevation Measurement

GZA currently maintains transducers and dataloggers as part of the monitoring instrumentation located across the Site[8]. These instruments record groundwater elevation and temperature measurements at regular time intervals[9]. Transducer installation logs are presented in **Appendix B**.

Following the quarterly sampling, GZA downloaded groundwater elevation data collected by the pressure transducers over the duration of the quarter. Using these data, GZA developed Site groundwater elevation contours at low river tide conditions for the upper and lower portions of bedrock. These data are presented on **Table 2** and **Figure 5** for the December 8, 2008 low river tide.

The groundwater contour map is used to compute groundwater flow gradients, which are used to provide ongoing calibration of the Precipitation Mass Balance Model (as used in IPEC's radiological dose computations – see **Section 3.1**). It is anticipated that sufficient seasonal groundwater elevation data will have been collected through the middle of 2009 to verify the suitability of the model for dose computation. As such, it is currently our intent to substantially reduce the scope of groundwater elevation data collection after that time.

2.2 Groundwater Sampling

During Q1 2009, GZA collected groundwater samples for radionuclide analysis from scheduled sampling intervals within select monitoring installations ("wells") as shown in **Table 3**. In addition, GZA split groundwater samples from select locations between Entergy, the Nuclear Regulatory Commission (NRC), and the New York State Department of Environmental Conservation (NYSDEC). Chains of Custody for samples collected by GZA are presented in **Appendix C**.

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6 Refer to the "Final Quarterly Long-Term Groundwater Monitoring Report Q2–Q4 2007 (Report No. 1)," dated May 2008 for Site background information and a description of the environmental setting.

7 Hydrogeologic Site Investigation Report, January 7, 2008, prepared by GZA GeoEnvironmental, Inc, on behalf of Enercon Services, Inc., for Entergy Nuclear Northeast, Indian Point Energy Center, 450 Broadway, Buchanan, NY 10511.

8 It is anticipated that subsequent to the Q2 2009 quarterly monitoring report, the transducer monitoring program will be reduced to only a select set of locations that will continue to be routinely monitored with groundwater level transducers.

9 Currently, transducers record groundwater elevation and temperature readings on a 20 minute time interval. However it is anticipated that during the later half of 2009, this time interval may be adjusted.

GZA used different types of pumping equipment depending upon the sampling method and the characteristics of the individual monitoring installation[10]. **Table 1** lists the monitoring installations sampled, the sampling depths and elevations within sampling installations, and the sampling method and equipment used.

In general, GZA implemented two basic methods of sampling to collect representative groundwater samples: the Low Flow method and a modified well volume purge method. The Low Flow method allows collection of representative groundwater samples from discrete sampling zones within a monitoring installation, while limiting the accumulation of wastewater[11]. As agreed by Entergy Nuclear Northeast, the NRC, NYSDEC, and GZA, the modified traditional purge method[12] allows for the collection of a representative groundwater sample from a monitoring installation after purging 1.5 volumes of water. We implemented this method in wells where low flow sampling was not practical[13]. Sampling Data Sheets summarizing water quality data and sampling information are presented in **Appendix D**.

With all of the above sampling methods, GZA used dedicated sampling equipment, including polyethylene and/or nylon tubing and submersible electric pumps to the extent practical. The use of dedicated sampling equipment limits the possibility of cross-contamination between monitoring installations and/or individual multi-level samples within a single installation. Refer to **Table 1** for a summary of the sampling methods, equipment, frequency, and depths employed during this quarter's groundwater monitoring round.

2.3 Vapor Containment Building Foundation Drain Sampling

GZA attempted to collect water samples from three manholes (B-1, B-6, and MH-5) on-Site to characterize discharge from foundation drains around and below the Unit 2 and 3 Vapor Containment Structures (the drains include both the foundation drains around the building periphery ("curtain drains") as well as those around the sumps near the middle of the structures). These drains are being used as an integral part of the early leak detection monitoring network. However, due to plant security precautions, GZA was unable to access these sampling points. The manholes at these catch basins are currently welded shut, as they were during the previous quarter (Q4 08). Entergy recently modified the covers of these three manholes to allow access to these sampling locations without compromising plant security and samples were collected from these locations during the Q2-2009 sampling round.

Prior to Q3 08, GZA was able to sample the east drain line in manhole MH-5 to capture drainage from the Unit 2 Vapor Containment Foundation Drains. GZA also previously sampled the east drain line in manhole B-1 to capture drainage from the Unit 3 Vapor Containment South Curtain Drain. In addition, GZA sampled the manhole B-6 during earlier sampling quarters to capture drainage from the Unit 3 Vapor Containment North Curtain Drain and Reactor Sump Foundation Drain[14].

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10 Refer to Section 4.3 of the Final 2007 Quarterly Long-Term Groundwater Monitoring Report No. 1, dated May 2008, for sampling method and equipment selection rationale.

11 As described in: Low-Flow Sample Collection, GZA, 7/18/2007

12 As described in: Modified Traditional Groundwater Sample Collection, GZA, 7/18/2007

13 When external factors (such as well-surface-flooding from stormwater runoff or overland flow of plant component leaks) might have infiltrated the top of the well and impacted ambient groundwater conditions at a specific sampling location, GZA typically purged three to five volumes of water (using the modified traditional purge method) prior to collection of a sample to attempt to obtain a representative groundwater sample.

14 During early attempts to collect a discrete sample specifically representative of the east drain line in B-6, this catch basin was used as a clean water discharge point for some unidentified plant work. As a result, the height of the water within the manhole was

2.4 Preventative Maintenance

GZA performed general wellhead maintenance tasks, such as housekeeping of well vaults and roadboxes, and replacement of dedicated sampling equipment, tubing and transducers.

In addition, LaFarge well LAF-002 (also initially referred to as MW-2), located at the LaFarge Gypsum Property to the south of Indian IPEC, was refurbished between November 24th and 25th, 2008. This well has been incorporated as a boundary well within the Long Term Monitoring Program at the request of the NRC. A description of the refurbishment activities is provided in **Appendix I** Mid-Quarter Sample Collection

During the spring of 2008, Indian Point Energy Center began moving spent fuel in Unit 1. Therefore, samples in addition to those collected for the routine quarterly sampling round were obtained from selected wells associated with Unit 1 to increase the monitoring frequency proximate to these events. Following the Q1 09 sampling event, additional groundwater samples were collected from MW-42-49, MW-50-66, MW-53-120, and IP1-CSS during the approximate halfway point between sampling quarters. The results of the mid-quarter samples collected after Q1 2009 are presented in **Section 3.4** along with the quarterly data. Sampling Data Sheets summarizing water quality data and sampling information are presented in **Appendix E**.

2.5 Confirmatory Sample Collection

During the Q1-2009 sampling event, positive detections of cesium were reported within MW-66-21 and MW-67-173. Historically Cesium has not been detected within these two sampling intervals. Following the Q1 09 sampling event, additional groundwater samples were collected from these two sampling intervals during the approximate halfway point between sampling quarters to evaluate these detections of Cesium. The results of the confirmatory samples collected after Q1 2009 are presented in **Section 3.4** along with the quarterly data. Sampling Data Sheets summarizing water quality data and sampling information are presented in **Appendix E**.

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above the drain lines, which only permitted collection of a composite sample. By mid-year 2008, these discharge operations had ceased, and during the Q2 2008 attempt to collect a sample from this location, GZA observed no flow of water through this drain. It is possible that flow within this drain is being restricted by sediment further upgradient in the drain.

3.0 DATA EVALUATION

The Long Term Monitoring Program was designed to provide data to address four main objectives:

- Monitor groundwater flow rate and radionuclide concentrations to both detect and characterize current and potential future off-Site groundwater contaminant migration to the Hudson River, both via direct groundwater discharge to the river and through infiltration into the Discharge Canal, from abnormal radionuclide releases of liquid effluents, so as to allow computation of potential radiation dose to the public from these releases;
- Monitor groundwater proximate to Systems, Structures and Components (SSCs) which exhibit a credible probability of resulting in a visually undetected release of radionuclides to the subsurface carrying an activity level of significance;
- Monitor groundwater along the property boundary to confirm that contaminated groundwater is not migrating off of the property to locations other than the river; and
- Monitor the groundwater plumes identified on-Site to demonstrate overall reductions in total activity over time as is consistent with the requirements of Monitored Natural Attenuation (MNA)[15], the selected remediation for the IPEC Site.

These objectives are consistent with and fully encompass the guidance provided in the NEI Groundwater Protection Initiative (GPI). The following sections provide data analyses to address these four objectives.

3.1 Groundwater Mass Flux

The following sections describe the computation of groundwater flow (mass flux) through the Site using the Precipitation Mass Balance Model and the continuing verification of the calibration of this model based on the most current quarterly groundwater elevation monitoring data.

3.1.1 Groundwater Mass Flux Computation

As presented in the Hydrogeologic Site Investigation Report, the groundwater flow in both the upper and lower flow zones is toward the power block area from the North, East and South, with subsequent discharge to the Hudson River to the West. A corollary to this conclusion is that there is no groundwater flow, and thus no off-Site radionuclide migration from the power block area to the North, East or South. Groundwater flow associated with infiltration from the watershed may be as deep as 350 feet, but still ultimately discharges to the river.

To estimate groundwater flow (i.e., groundwater mass flux) beneath the Site, an analytical groundwater flow model was constructed based on a Precipitation Mass Balance Model using the Q2 2007 (reference) data set. This model is based on the precept that, on a long term average, the groundwater flowing through and discharging from the aquifer is equal to the watershed infiltration recharge. The Precipitation Mass Balance Model was also calibrated to groundwater fluxes based on a Darcy's Law Model with gradients also derived from Q2 2007

15 The selection of MNA as the remedial strategy for the Site is discussed further in the Hydrogeologic Site Investigation Report.

(June 1, 2007) groundwater elevation contours[16]. This calibration not only verified the reasonableness of the overall groundwater flow rates predicted by the Precipitation Mass Balance Model, but also allowed further discretization of the groundwater flow into upper and lower flow zones as well as flow volumes upgradient and downgradient of the Discharge Canal.

The mass balance approach recognizes that the only substantial source of recharge to the aquifer is areal recharge derived from precipitation. The previous ten year average for precipitation measured at the Site is 36 inches per year. Based on a USGS infiltration study[17] as well as the model calibration cited above, approximately 29 percent of the precipitation falling on pervious surfaces over the Site watershed area results in infiltration recharge to the groundwater. This computation indicates that the groundwater recharge rate is approximately 10.5 inches per year for the 2008/2009 monitoring period.

Applying this information to the pervious surfaces within the six individual groundwater flow zones shown on **Figure 4**, it is estimated that approximately 5.2 gpm of groundwater flows into the Discharge Canal from the upper and lower zones. In addition, approximately 5.8 and 7.7 gpm of groundwater flows into the Hudson River from the upper and lower zones, respectively. Furthermore, the mass balance model accounts for storm water discharge[18] to both the Discharge Canal and directly to the Hudson River which are estimated to be 44 and 4 gpm, respectively. These flows can be further subdivided into flow zones as shown in the table in **Appendix F.**

3.1.2 Quarterly Groundwater Mass Flux Calibration

As indicated above, the Precipitation Mass Balance Model was calibrated to groundwater fluxes computed based on a Darcy's Law Model. The calibration compared the total groundwater flow values for each of the six flow zones computed independently[19] using the Precipitation Mass Balance Model and the Darcy's Law Model. The initial calibration was performed using gradients derived from contours of groundwater elevation measured on June, 1 2007, as described in the Hydrogeologic Site Investigation Report.

As part of the initial portions of the Long Term Monitoring Program[20], this calibration is being evaluated quarterly to verify that seasonal changes in groundwater elevations do not materially impact the calibration. Therefore, quarterly groundwater elevations measured with pressure transducers at representative low river tides[21] have been used to construct groundwater elevation contours for the upper groundwater flow zone (water table contours) and the lower

16 Refer to the Hydrogeologic Site Investigation Report prepared by GZA and dated January 7, 2008.

17 USGS. Water Use, Ground-Water Recharge and Availability, and Quality of Water in the Greenwich Area, Fairfield County, Connecticut and Westchester County, New York, 2000-2002.

18 The storm drains also include groundwater discharges from the foundation drains for Unit 2 and Unit 3 VC Buildings.

19 The two models use different sets of input parameters which are not dependent or related to each other. The groundwater flow computed using the Precipitation Mass Balance Model is based on yearly precipitation amounts and the proportion of this precipitation that results in infiltration recharge to the groundwater. The Darcy's Law Model, on the other hand, is based on the measured groundwater flow gradients (as computed from groundwater elevation contours) and estimates of the formation hydraulic conductivity.

20 It is anticipated that eight quarters of seasonal groundwater elevation data should be sufficient to capture sufficient seasonal and yearly groundwater flow variation to verify the validity of the current calibration. It is anticipated that once these data are obtained, the model will be recalibrated to the data set that yields the largest groundwater flow values, so as to be conservative. The scope of groundwater elevation data collection will be reduced at that point (currently anticipated after Q2 2009 data collection).

21 Previous evaluations (provided in the Hydrogeologic Site Investigation Report) have shown that the shape of the groundwater contours is relatively unchanged at different times of the tidal cycle. However, the use of low tide contours provides the greatest transient gradients (larger than the average gradient) and therefore result in a computed groundwater flux from the Site that is biased high. Computation of radionuclide release rates to the river based on these data will therefore also have a high bias (i.e., they will be conservative).

flow (potentiometric head contours), as shown in **Figure 5** for Q1 2009. As summarized on the table included below, similar calibration analyses were performed for previous quarterly monitoring (2nd, 3rd, and 4th quarters of 2007, and 1st, 2nd, 3rd, and 4th quarters of 2008)[22, 23].

Figure 5 shows that the deep zone groundwater contours continue to be a subdued reflection of the upper zone groundwater contours. This demonstrates that the anthropogenic effects at the Site are generally shallow. The groundwater flows computed using the Darcy's Law Model in each of the six flow zones, for each of the available quarterly data sets, are compared to the flows used in the calibrated Precipitation Mass Balance Model (see table below).

	PRECIPITATION MASS BALANCE MODEL (GPM)	DARCY LAW MODEL (GPM)							
	Q2 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009
Totals	**18.8**	**18.8**	**18.4**	**18.2**	**20.6**	**25.7**	**23.7**	**23.5**	**23.5**
Northern Clean Zone	1.4	0.7	0.7	0.5	0.9	0.4	0.4	0.4	0.5
Unit 2 North Zone	0.6	0.8	0.9	0.8	1.3	0.5	0.6	0.6	0.6
Unit 1/2 Zone	2.8	2.3	1.7	2.1	3.2	2.5	1.9	3.2	2.9
Unit 3 North Zone	3.2	4.5	4.4	4.1	5.5	6.6	5.1	4.6	5.0
Unit 3 South Zone	3.5	2.6	2.8	2.7	2.2	5.4	5.8	4.5	4.6
Southern Clean Zone	7.4	7.9	7.9	8.1	7.6	10.3	9.9	10.2	9.9

The new data for Q1 2009 continues to show that the overall groundwater flow through the Site during 2008 and the first quarter of 2009 is greater than previously computed for 2007 by approximately thirty percent. While the 2008 yearly rainfall was higher than that for 2007, it was only about five percent higher. However, it must also be noted that the computed quarterly flows are based on groundwater elevations measured at one time during the quarter. As such, the frequency/intensity of the rainfall just prior to this snapshot measurement has an impact on the flow computation beyond just its contribution to the total yearly or quarterly rainfall; i.e., heavy rain before a measurement round will tend to result in a high bias in the elevation measurements[24], and thus higher computed flow values. To attempt to quantify this transient impact, the rainfall was totaled for one week, two weeks and one month prior to each groundwater elevation measurement round, and then each amount was converted to an equivalent monthly rainfall rate. The maximum of these three values for each quarter was then compared to the average monthly rainfall amount, which was based on averaging monthly rainfall totals over the last thirteen years. For the three 2007 quarters, the maximum monthly

22 See Quarterly Reports prepared by GZA including: Final 2007 Quarterly Report dated May 1, 2008; Quarter 1 2008 Quarterly Report dated May 15, 2008; Quarter 2 and 3 2008 Quarterly Report dated February 6, 2009 and Quarter 4 2008 Quarterly Report dated September 1, 2009.
23 There was no formal 1st quarter monitoring event in 2007 given that the Long Term Monitoring Program had not yet been initiated.
24 While heavy rainfall will elevate transient groundwater levels in all types of geologic deposits, its impact on fractured bedrock regimes such as exists at IPEC is particularly rapid and large due to the low storativity.

rate was between 0.2 and 1.8 inches/month below the average. For the four 2008 and the 1st 2009 quarters, the maximum monthly rate was between 1.0 and 1.8 inches/month above the average. These data may therefore explain the 30% higher computed quarterly flow rates for 2008 and 2009 when the total rainfall in 2008 was only 5% greater than in 2007. In addition, the process of drawing groundwater elevation contours from the individual data points evolved over time after 2007 as new information pursuant to the influence of plant structures on the groundwater flow field became available. This evolving process resulted in some changes to the general shapes of the contours, which impacted computed gradients and thus the flow rates. As also shown in the table, the increased flow is manifested in a zone-specific manner, with the more southerly zones primarily showing the greatest increases. This is also as would be expected given that the Unit 1 and Unit 2 foundation drains capture a large portion of the more northerly flow prior to it reaching the river. As such, these drains limit the increase in groundwater elevation due to rainfall events.

While the increased flow in 2008 and 2009 (as compared to the reference flow of Q2 07) may initially appear substantial, if used for the dose computation[25], it would have a more limited impact on the dose magnitude. This muted impact primary results from the highest activities being found in the Zone 1 / 2 area where the computed flows have not shown as great an increase as in the more southerly, cleaner areas (less than 15% increase over the quarters measured to date). Given the overall small variability of flow over the seasons monitored to date, as well as the overall recognition that the computed doses to the river are a small fraction of the permitted amounts, GZA believes that recalibrating the Precipitation Mass Balance Model, as used to compute groundwater flux through the Site as part of the radionuclide dose computation, is not warranted at this time. Once sufficient seasonal data has been collected (anticipated after the Q2 2009 sampling round), the model will be recalibrated to the quarterly data set that yields the largest groundwater flow values, so as to be conservative.

Once the final data are obtained (anticipated after the Q2 2009 sampling round) and the model is recalibrated, the scope of groundwater elevation data collection will then be reduced. Groundwater contours will no longer be drawn and the dose computations will be based on the recalibrated Precipitation Mass Balance Model. However, to continue to validate the applicability and appropriateness of the Precipitation Mass Balance Model, a subset of the existing set of transducers will be maintained and monitored quarterly as part of the Long Term Monitoring Program. The primary objective of maintaining these transducers is to provide ongoing confirmatory data that demonstrate substantial changes to the on-site groundwater flow field have not taken place and thus verify that the basic assumptions inherent in the model continue to remain valid. The transducer locations selected for this monitoring are provided on **Figure 5A** of this quarterly report, and the rational for the selection of these specific individual transducer locations is provided in **Appendix J**.

3.2 Groundwater Sampling

The following sections describe the groundwater sampling results and associated QA/QC protocols.

25 The dose computations are currently all performed with the flows computed for the Q2 2007 data set. It is noted that the increase in the Q1 2009 groundwater flow in the Unit ½ zone, which encompasses the majority of the radionuclide migration to the river, is only 5% higher than the reference flow. Therefore the total dose computed with this slightly higher groundwater flow would still only be a small fraction of the permitted value. Therefore, the current dose computations have again been based on the Q2 07 data.

3.2.1 Groundwater Sampling Results

Groundwater samples collected on behalf of Entergy during Q1 2009 were analyzed for radionuclides including Tritium, Sr-90, Cs-137, Co-60, and Ni-63 at GEL Laboratories[26]. **Table 3** presents the Q1 2009 analytical results specific to Tritium, Sr-90, Cs-137, Co-60, and Ni-63. The rolling yearly averages, which are calculated using all the valid data from the previous year [Q2 08 through Q1-09] including mid-quarter and confirmatory samples, are also presented in **Table 3**[27]. **Table 4** presents minimum detection concentrations (MDC), standard deviation, and I.L.s assigned to each well for the Q1-2009 analytical results. **Table 5** presents historic Site groundwater analytical data. Isopleth maps of rolling averages for Tritium and Sr-90 are presented in **Figures 6** and **7**, respectively. **Figure 8** presents a data map of rolling averages for Cs-137, Co-60, and Ni-63.

An overall evaluation of the sample handling, shipment and analytical procedures, indicate that the quality assurance quality control protocols have been met for Q1 09, and the analytical results should be useable. This conclusion is further supported by a review of the Q1 2009 analytical data, as compared to previous historical trends. Refer to **Section 5.2.2** of the Final 2007 Quarterly Long-Term Groundwater Monitoring Report No. 1 for further details pursuant to quality assurance quality control protocols.

3.3 Radionuclide Release Rates

The calibrated Precipitation Mass Balance Model-derived groundwater flows within each of the six flow zones are multiplied by yearly rolling average radionuclide levels within each zone (computed separately for upper and lower flow zones as well as upgradient and downgradient of the Discharge Canal) to compute groundwater radionuclide release rates to the Discharge Canal and Hudson River. Storm drain flows computed based on yearly precipitation rates are multiplied by radionuclide concentrations measured in the storm drains to compute the associated storm drain radionuclide release rates to the Discharge Canal and Hudson River[28]. The selection of specific monitoring locations for each of the six zones is described in the January 25, 2008 Memorandum – Synopsis of Long Term Monitoring Plan Bases. The radionuclide release rates from the groundwater and storm drains to the Discharge Canal and Hudson River for Q1 2009 are shown in the table below[29].

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26 It should be noted that samples were analyzed for gamma emitters via gamma spectroscopy. Although only Co-60 and Cs-137 are reported, gamma spectroscopy could detect and identify other gamma emitters if they became present in groundwater.
27 An overall evaluation of the Q2 2008 sample analytical procedures employed by the laboratory for this round of samples indicated that the quality assurance quality control protocols had not been met for some samples and therefore a portion of the analytical results for Q2 2008 was not useable for calculation of the rolling averages. Therefore, only the useable data from Q2-2008 was included in the calculations for the rolling averages.
28 The storm drains also include groundwater discharges from the foundation drains for Unit 2 and Unit 3 VC Buildings.
29 These release rates include the discharge from the Unit 2 VCB footing drains, but not from the Unit 1 NCD and SFDS (which are otherwise accounted for).

	GROUNDWATER AND SURFACE WATER TO RIVER (CI/YR)	GROUNDWATER AND SURFACE WATER TO CANAL (CI/YR)
Northern Clean Zone*	4.15E-04	0.00E+0**
Unit 2 North Zone	4.17E-04	2.87E-02
Unit ½ Zone	7.82E-03	3.22E-03
Unit 3 North Zone	3.06E-03	1.16E-03
Unit 3 South Zone	1.04E-03	4.22E-03
Southern Clean Zone*	4.21E-03	0.00E+0***

* Activity in the Northern Clean Zone is attributable to an assumed Tritium background concentration of 150 pCi/L in the groundwater. The remaining radionuclides were assumed to not be present in this streamtube. Radionuclide release rate in the Southern Clean Zone is calculated from activity measured in monitoring wells MW-40 and MW-51.
** The radionuclide release rate to the Discharge Canal from the Northern Clean Zone is zero because the Discharge canal does not extend far enough to the north to be downgradient of the Northern Clean Zone.
*** The radionuclide release rate to the Discharge Canal from the Southern Clean Zone has been computed to be zero because groundwater in this zone appears to flow under the Discharge Canal and directly to the river. This conclusion has been reached given that the surface water level in the Discharge Canal is, on average tidally, equal to the proximate groundwater elevation, both of which are above the water level elevation in the Hudson River. This approximation results in a conservatively high dose estimation.

Release rates are then used by Entergy to calculate the radiological dose to the environment via the Discharge Canal and the Hudson River using the procedure outlined in the Liquid Radioactive Effluents (0-CY-2740) document, prepared by Entergy and dated January 12, 2007.

3.4 SSCs and Property Boundary Monitoring

The Long Term Monitoring Program has been designed to also provide rapid detection of potential leaks from SSCs which exhibit a credible probability of resulting in a visually undetected release of radionuclides to the subsurface. The monitored SSCs are shown on **Figure 4** and a description of the specific monitoring installations associated with each SSC are provided in the January 25, 2008 Memorandum – Synopsis of Long Term Monitoring Plan Bases. In addition to monitoring the SSCs, on-Site and off-Site wells are used to monitor the property boundaries for unanticipated radionuclide migration across these boundaries. Again, the rationale underpinning the selection of wells designated for this purpose is provided in the above cited Memorandum. These monitoring protocols are consistent with the NEI Groundwater Protection Initiative.

As discussed with the NRC during our Groundwater Protection Initiative meeting on August 12 and 13, 2008, Entergy has initiated a program of increased sampling frequency (in addition to the quarterly samples) at select wells during/following activities that could potentially result in the increased likelihood of an undetected release to the subsurface. During the Q1 2009 monitoring period, there were no activities that required increased sampling. However, mid-quarter samples were still collected to better define the residual impacts of the Unit 1 fuel removal procedure[30]. In addition, and as also requested by the NRC, a cross section has also

30 As part of the process for final fuel removal from Unit 1, IPEC began increasing the water level in the pools to Elevation 55' starting on April 23, 2008, with completion on the 25th. As anticipated based on previous work, increased leakage at high water was observed, particularly from the transfer canal. IPEC believes that the leakage is through the concrete into the Chemical

been developed through the Unit 3 area to supplement **Figure 4** and further demonstrate the relationship of site groundwater flow patterns and monitoring well placement relative to the individual Unit 3 SSCs (similar cross sections were previously developed for Units 1 and 2, as presented in the Hydrogeologic Site Investigation Report). This new Unit 3 cross section C-C' is included in this quarterly report as **Figure 4A**. As agreed with the NRC during the Deviation Memo Closeout Meeting of August 18 and 19, 2009, and as supported by the Unit 3 cross section, Entergy has agreed to add an additional multi-level monitoring installation to be located near the south west corner of the Unit 3 Transformer Yard, downgradient of MW-46. The current sampling of U1-NCD and U1-SFDS will also be continued as part of the Long Term Monitoring Program.

I.L.s were established for the associated monitoring wells to set quantitative radionuclide concentrations above which further action would be undertaken. As part of the ongoing groundwater monitoring program, the reported analytical concentrations are compared against the I.L.s shown in the table below. I.L.s are currently computed each year based on yearly averages of all the valid groundwater sampling analytical results of the previous year including aliquot, confirmatory, and mid-quarter sample results[31,32,33]. The I.L.s generally described on the following page and presented in **Table 4** are established for comparison with 2009 analytical results based on the quarterly samples collected and analyzed in 2008.

WELL ID	INVESTIGATION LEVELS (I.L.S)		
	TRITIUM PCI/L	SR-90 PCI/L	OTHER PLANT-RELATED RADIONUCLIDES
Off-Site Boundary Wells (LAF-002)	any detection*	any detection*	any detection*
On-Site Boundary Wells (MW-40, MW-51, MW-52, and MW-107)	1,000**	2**	any detection*
Riverfront Boundary Wells (MW-60, MW-62, MW-63)	2,000**	2**	any detection*
All Other Wells	>2x average***	>2x average***	>2x average***

* A radionuclide is positively detected when the result is greater than or equal to the MDC and 3 times the 1 sigma uncertainty.

** The values of 1000 and 2000 pCi/L for H-3 and 2 pCi/L for Sr-90 have been chosen to be low enough to result in timely detection of a new release or change to an existing release and still be outside the normal expected range of sample results at these locations, to the extent possible with the currently available data over time.

*** Any positively detected radionuclide that has a result greater than 2 times the average from the previous year. The IL is not reached until an H-3 result is greater than 1000 pCi/L or a Sr-90 result is greater than 2 pCi/L.

In the event that the analytical results of a groundwater sample exceed the designated I.L., the following series of actions will be considered:

Systems Bldg 33' area given increased Sphere Valve Gallery sump pump activation on the 14' level. During fuel removal, IPEC continued to add water to maintain the pool level at 55' until October when all the fuel was removed and the pools were drained. Given the anticipated increased leakage, GZA collected Unit 1 "Mid-Quarter" groundwater samples from monitoring wells U1-CSS, MW-42-49, MW-50-66, and MW-53-120 on May 12 & 13, 2008, September 5 & 8, 2008, and November 17 & 19 2008 to evaluate the associated subsurface impact of fuel removal activities. These wells were again sampled as part of the Q1-2009 sampling round, with additional Mid-Quarter samples subsequently taken between March 16 and March 18, 2009.

31 Previously ILs were calculated based on the analytical results from the quarterly sampling rounds and excluded mid-quarter and confirmatory sample analytical results in the calculation.

32 If a confirmatory analytical result confirms the original analytical result is false, then only the confirmatory result is utilized in the yearly IL calculation. If a confirmatory analytical result confirms the original result is valid, then both the original and the confirmatory result are utilized in the yearly IL calculation.

33 If an aliquot analytical result confirms the original analytical result is false, then only the aliquot result is utilized in the yearly IL calculation. If an aliquot analytical result confirms the original result is valid, then the average of the original and the aliquot result are utilized in the yearly IL calculation.

- Contact the laboratory to verify that all quality control checks were satisfactory, sufficient sample volume was used; required MDC's were met, etc.;
- Re-analyze aliquots of the original sample;
- Re-sample the location to verify the result;
- Increase the frequency of sampling for this location;
- Initiate an investigation utilizing Entergy's corrective action program and related resources as appropriate (e.g. site engineering / radiation protection); and
- Initiation of source/ground water remediation techniques commensurate with the potential dose impact analyses and good environmental stewardship.

3.4.1 Previous Q4-2008 Investigation Level Exceedances

As indicated in the Q4 2008 Quarterly Monitoring Report, a comparison of the Q4 2008 and Post Q4 08 Mid-Quarter analytical results to their respective I.L.[34] values shows that the I.L.s were initially met in four samples. One of these samples (MW-67-39) was reanalyzed, and the results were found to no longer exceed the I.L.s[35]. The remaining three samples (MW-36-52, MW-42-49, and MW-54-58) are discussed individually in the sections below.

MW-36-52. The Q4 08 results at this location indicated the continuance of a developing trend of increasing Strontium levels. While the exact cause of the trend was unclear, it was inferred to be related to either: 1) a delayed response to the 2005 filling of the Unit 1 SFPs for fuel inspection; or 2) the April 2008 filling of the Unit 1 SFPs for final fuel removal, as is consistent with that further described below for MW-42-49 and MW-54-58. In any case, plausible potential causes were related to Unit 1 SFPs (the primary source of Strontium on the Site), which has had the remaining fuel and SFPs water removed. As such, the source has been terminated and it is anticipated that Strontium levels at this monitoring location will return to a downward trend with time. As anticipated, the Q1 09 results at this location did indicate a decrease in Strontium to levels consistent with 2007 levels and below the I.L. This anticipated downward trend will be continued to be monitored.

MW-42-49. Water levels in the Unit 1 SFPs were increased during late April 2008 as part of the process for final fuel removal for ISFSI storage. As anticipated based on previous work, increased leakage at high water levels was observed, particularly from the transfer canal. As such, it was expected that radionuclide levels would increase downgradient of Unit 1. Therefore, Mid Quarter samples were taken during the approximate halfway point following the Q2, Q3, Q4 2008 and Q1 09 sampling quarters. It was anticipated that increased radionuclide levels[36] would be observed shortly after raising of pool levels (i.e., in the post-Q2 Mid Quarter samples). However, the expected increase was not observed until the post-Q3 Mid Quarter samples. These samples yielded an abrupt Strontium level increase to three times the I.L. for

34 The I.L.s included in the Q4-2008 monitoring report were based on the yearly averages from 2007. The I.L.s for the Q1-2009 sampling event were adjusted based on the yearly averages from 2008.

35 The initial positive Cobalt-60 result for sample MW-67-39 was unexpected recognizing that the previous results for this location yielded non-detectable levels. The re-analysis of this sample yielded below detection limit concentrations of Cobalt-60. This is consistent with historically reported concentrations as well as that expected based on the CSM.

36 It was anticipated that Tritium levels would increase, but it was unclear if increased Strontium levels should be expected given Entergy's demineralization of the pools prior to raising the water levels. In fact, the previously enhanced demineralization, begun in April 2006, was resulting in a consistent decrease in Strontium levels in MW-42-49.

MW-42-49[37]. The Q4 08 sample results indicated a similarly abrupt decrease in Strontium levels to just below the I.L. at this location, but the post-Q4 08 sample yielded a small increase in Strontium levels that resulted in an approximately five percent exceedance of the I.L. The Q1 09 sample results indicated another increase in Strontium to levels greater than three times the I.L. with a corresponding increase in Cesium levels to greater than two times the I.L. and Nickel levels to just above the I.L. The post Q1 09 samples results also indicated increases in Cesium and Nickel levels but the Strontium levels decreased slightly compared to the Q1 09 results. It is anticipated that these increases in Cesium, Nickel and Strontium levels will decrease since the remaining fuel has been removed and the water drained from the Unit 1 SFPs. The post Q1 09 results at this location also indicated abrupt spike in Tritium levels to almost nine times the I.L. As described in more detail below, this increase in Tritium level is likely associated with leakage from the waste distillate tank valves located within the Unit 1 Fuel Storage Building (FSB). This location will be continued to be monitored to evaluate radionuclide trends.

MW-54-58. The Q4 08 results indicated the Strontium levels at this location more than doubled its I.L., the first instance in which the I.L. was exceeded at this sampling location. This abrupt increase was anticipated to be the result of the increase in water levels in the Unit 1 SFPs, showing a predicted delayed response following that seen in the upgradient well MW-42-49. Consistent with the results at MW-54-58, all of the other sampling depths within this monitoring installation also showed a similar, but lower magnitude, response in Strontium levels during the Q4 08 sampling event. In addition, MW-53-120, the upper two sampling intervals in MW-57 and potentially MW-36-52, located within the identified Strontium plume upgradient of MW-54 and downgradient of MW-42, also all showed a marked increase in Strontium levels over the same general time interval (see **Figure 7A**). Since the source of these radionuclides has been terminated, it was anticipated that Strontium levels at this monitoring location would return to a downward trend with time. As anticipated, the Q1 09 results from this location indicate Strontium levels decreased to levels consistent with the past levels and below the I.L. This location will be continued to be monitored to evaluate the anticipated downward trend in Strontium levels.

MW-40 and MW-51. While there have been no Q4 08 IL exceedances at these two southern boundary locations, there appears to be a general correlation in Tritium peaks at multiple depth levels in both of these monitoring installations. Even though it is recognized that the peak Tritium levels detected are low (less that 350 pCi/L) and near the lower limit of detection, these data are being closely scrutinized on a routine basis given the sensitivity to any potential indication of migration past the southern power block boundary. The most appropriate metric to evaluate if these peaks could be due to groundwater migration of Tritium from the power block area is the relative groundwater elevations between these locations and the power block areas where Tritium contamination exists. As discussed at length in the CSM sections of the Site Investigation Report, southern boundary groundwater elevations are well above those in the power block area. As such, groundwater, and thus Tritium in the groundwater, cannot migrate from the power block to the south; in fact, groundwater is migrating in the opposite direction. This conclusion has continued to be validated each quarter though analyses of groundwater elevation contours (see **Figure 5** in the various quarterly reports). In addition, starting with this, the Q1 2009 quarterly report, an additional figure (**Figure 5A**) is being generated to specifically compare high importance transducer readings to historic maximum and minimum readings. The

37 As indicated, Strontium levels increased even though the SFPs were being aggressively demineralized. This result is not unexpected given that the increase in leakage rate, even at reduced Strontium levels, could result in increased groundwater Strontium levels due to additional partitioning from the solid subsurface materials back into the groundwater as well as the additional leakage rate as compared to the groundwater flow rate.

objective of this analysis is to demonstrate that substantial changes to the on-site groundwater flow field have not taken place and that the CSM remains valid. The MW-40 and MW-51 monitoring installations are included in this analysis.

Based on these analyses, as well as the substantial body of data developed over the last 5 years of investigation which underpin our CSM, we can state with a high degree of confidence that the low level peaks in the Tritium activities observed in these two monitoring installations are not due to groundwater migration from the power block area. However, we do not yet have a definitive explanation for the observed peaks. Further investigation into other potential mechanisms, such as atmospheric Tritium washout and seasonal laboratory bias are ongoing.

3.4.2 Q1-2009 Boundary Investigation Levels

A comparison of the Q1 2009 analytical results for the On and Off-Site Boundary Wells to their respective I.L. values shows that the I.L.s were not met for any of the monitoring locations. Therefore, there was no requirement to further investigate radionuclide activity in these wells.

MW-40 and MW-51. While there have been no Q1 09 IL exceedances at these two southern boundary locations, these data continue to be closely scrutinized on a routine basis given the sensitivity associated with the southern power block boundary (see further detail provided in **Section 3.4.1**). Based on these analyses, as well as the substantial body of data developed over the last 5 years of investigation which underpin our CSM, we can state with a high degree of confidence that the low level peaks in the Tritium activities observed in these two monitoring installations are not due to groundwater migration from the power block area. This conclusion has continued to be validated each quarter. However, we do not yet have a definitive explanation for the observed peaks. Further investigations into other potential mechanisms, such as atmospheric Tritium washout and seasonal laboratory bias are ongoing. As part of this effort, starting with this the Q1 2009 Quarterly Report, an additional figure (**Figure 5A**) is being generated to specifically compare high importance transducer readings to historic maximum and minimum readings. The objective of this analysis is to demonstrate that substantial changes to the on-site groundwater flow field have not taken place and that the CSM remains valid. The MW-40 and MW-51 monitoring installations are included in this analysis.

3.4.3 Q1-2009 SSC Investigation Levels

For the SSC monitoring wells, a comparison of the Q1 2009 and Post-Q1 Mid-Quarter analytical results to their respective I.L. values shows that the I.L.s were initially met in eight samples. Two of these samples (MW-66-21 and MW-67-173) were reanalyzed, and the results were found to no longer meet I.L.s[38]. The remaining six samples in which the I.L.s were met are discussed individually in the sections below. The following table summarizes the cases where the I.L.s were met and also presents the reanalyzed results.

38 The initial positive Cesium-137 results for samples MW-66-21 and MW-67-173 were unexpected recognizing that the previous results for these locations yielded non-detectable levels. As shown in the table, the re-analysis of these samples yielded below detection limit concentrations of Cesium-137. This is consistent with historically reported concentrations at these locations.

WELL ID	RADIONUCLIDE	RESULT (PCI/L)	REANALYZED RESULT (PCI/L)	INVESTIGATION LEVEL (PCI/L)
MW-30-84	Cs-137	8.97	NA*	Any detection***
MW-32-59	H3	17,800	NA*	10,031
MW-37-40	Sr-90	3.47	NA*	2.26
MW-42-49 (Q1 09) MW-42-49 (Post Q1 09)	Sr-90/Cs-137/Ni-63 H3/Sr-90/Cs-137/Ni-63	677/80,500/912 72,200/588/140,000/1,160	NA*	196/37,933/842 8,212/196/37,933/842
MW-53-82	H3/Sr-90	4,260/2.3	NA*	1,964/2
MW-62-138	Sr-90	2.46	NA*	2
MW-66-21	Cs-137	8.99	ND**	Any detection***
MW-67-173	Cs-137	13.4	ND**	Any detection***

* NA indicates that the sample was not reanalyzed.
** ND indicates that the radionuclide was not detected greater than or equal to the MDC and 3 times the 1 sigma uncertainty.
*** A radionuclide is positively detected when the result is greater than or equal to the MDC and 3 times the 1 sigma uncertainty.

MW-30-84. The Q1 09 results indicate Cesium was detected for the first time at this location since the LTMP was initiated (fall 2007). While the exact cause of this cesium detection is currently unclear, given the absence of Cesium in the samples analyzed during the past quarterly sampling events at this location, the absence of Cesium in the upper zone (MW-30-69) at this location during the Q1 09 sampling event, and the absence of Cesium in all the zones in proximate locations MW-31 and MW-32 during the Q1 09 sampling event, this Cesium detection is likely related to a false laboratory detection. Cesium levels at this location will be subject to added scrutiny during the upcoming quarterly monitoring round to evaluate this potential false positive Cesium detection.

MW-32-59. The Q1 09 results at this location indicate Tritium was detected at the highest concentration since the initiation of the LTMP (fall 2007) exceeding the I.L. by a factor slightly under two. The remaining four deeper zones at this location (32-85, 32-149, 32-173, and 32-190) did not indicate an increase of Tritium levels during the Q1 09 sampling event and have generally indicated decreasing Tritium trends. While the exact cause of this elevated Tritium detection at this location is currently unclear, it is likely related to the mobilization of stored Tritium within the shallow bedrock fractures near the Unit 2 SFP. This storage/retention mechanism was confirmed by the tracer test and described in the Hydrogeologic Site Investigation Report prepared by GZA and dated January 7, 2008. However, it is also recognized that this Tritium increase may be related to the Unit 2 ISFSI work (see **Section 3.6.4**). This location will therefore be subject to added scrutiny during the upcoming quarterly monitoring rounds to evaluate potential increasing trends in Tritium levels.

MW-37-40: The Q1 09 results at this location indicate Strontium was detected slightly above the I.L. Previous Strontium levels at this location have indicated a steady downward trend; however this sampling location is located downgradient of the Unit 1 SFPs and increases in radionuclide levels were expected due to the increase in water levels in the Unit 1 SFPs during late April 2008. Since the source of these radionuclides has been terminated, it is anticipated that Strontium levels at this monitoring location will return to a downward trend with time. This location will be subject to added scrutiny during the upcoming quarterly monitoring round.

MW-42-49. As discussed previously, recent quarterly and mid quarter sampling results at this location have indicated an increase in Cesium, Nickel, and Strontium levels. These radionuclide level increases are likely associated with a delayed response to the raising of the water levels in the Unit 1 SFPs and associated increased leakage. It is anticipated that the levels of these isotopes at this location will decrease since the remaining fuel has been removed and the water drained from the Unit 1 SFPs. Quarterly and post quarterly sampling will continued to be performed at this location to monitor the levels of these isotopes and the anticipated downward trend with time. To this end, and as discussed in **Section 3.5** - Plume Monitored Natural Attenuation, the behavior of the Strontium increases due to defueling of Unit 1 are being specifically monitored, as summarized on a new figure developed for this, the Q1 2009 quarterly monitoring report (**Figure 7A**).

The post Q1 09 results however also indicated a significant increase in Tritium levels at this location. Prior to the post Q1 09 results, Tritium levels at this location were generally stable with only one minor increase during the post Q3 08 sampling round. In addition, it is noted that the Tritium increase at this location came after the Strontium increase. If the Tritium increase was associated with the defueling of Unit 1, as is the Strontium increase, then it should have preceded the Strontium increase[39]. Given the above, Entergy undertook additional investigations to search for another SSC leak. A February 2009 leak in the valves associated with the waste distillation tanks located to the east of the Unit 1 Fuel Storage Building (FSB) was identified. These valves are located within the FSB and thus the leak, which was visually detected and then quickly repaired, was not reported as part of the GPI program. Reporting of such leaks, even if they occur within structures, is now subject to the internal GPI reporting program. Given that these valves have been repaired, it is anticipated Tritium levels will decrease and return to stable levels at this location. Quarterly and post quarterly sampling will continued to be performed at this location to monitor Tritium levels and the anticipated downward trend with time.

MW-53-82. The Q1 09 results at this location indicate Tritium was detected greater than two times the I.L. and Strontium was detected slightly above the I.L. The lower sampling interval (MW-53-120) at this location indicated Tritium and Strontium levels were consistent with past trends and did not indicate an increase. This location is located downgradient of the Unit 1 SFPs and consistent with the results at upgradient location MW-42-49, increases in radionuclide levels are expected as related to a delayed response to the previous increase in water levels in the Unit 1 SFPs during defueling, and the observed waste distillation tank valve leakage within the Unit 1 FSB. The analytical results from the upcoming quarterly monitoring round will be utilized to assess the potential upward trend of Tritium at this location. As discussed in **Section 3.5**, Plume Monitored Natural Attenuation, the behavior of the Strontium increases due to defueling of Unit 1 are being specifically monitored, as summarized on a new figure developed for this, the Q1 2009 quarterly monitoring report (**Figure 7A**).

MW-62-138. The Q1 09 results at this location indicate Strontium was detected slightly above the I.L. The analytical results from four (62-18, 62-37, 62-53, and 62-182) of the other seven sampling intervals at this location have also indicated recent slight increases (Q4 08 and Q1 09) in Strontium levels. This location is located downgradient of the Unit 1 SFPs and consistent with the results at upgradient location MW-42-49, increases in radionuclide levels are likely related to a delayed response to the increase of water levels in the Unit 1 SFPs. The analytical results

39 Unlike the other radionuclides associated with the Unit 1 SFPs, Tritium is conservative and thus does not partition out of the groundwater onto solid geologic and anthropogenic surfaces. Therefore, Tritium should more through the groundwater flow system and to monitoring wells more rapidly that Strontium and Cesium.

from the upcoming quarterly monitoring round will be utilized to assess an upward trend of Strontium levels at this location. To this end, and as discussed in **Section 3.5** - Plume Monitored Natural Attenuation, the behavior of the Strontium increases due to defueling of Unit 1 are being specifically monitored, as summarized on a new figure developed for this, the Q1 2009 quarterly monitoring report (**Figure 7A**).

U1-NCD AND U1-SFDS. As agreed with the NRC during the Deviation Memo Closeout Meeting of August 18 and 19, 2009, sampling of the Unit 1 North Curtain Drain (U1-NCD) and the Unit 1 Sphere Foundation Drain Sump (U1-SFDS) will be formally included as part of the Long Term Monitoring Program. These drains have historically been assumed to collect some groundwater contaminated with Tritium from the Unit 2 SFP. This conclusion was validated by the tracer test conducted as part of the hydrogeologic site investigation (see the Hydrogeologic Site Investigation Report prepared by GZA and dated January 7, 2008). The amount of quarterly sampling data is currently insufficient to set Tritium I.L.s for these drains. However, visual inspection of the existing data was performed and no noteworthy increases in Tritium levels were observed. In addition, given the location of these Unit 1 drains, they should also prove useful for monitoring Strontium levels associated with the Unit 1 defueling. As such, the data from these drains has also been included on **Figure 7A**.

Three critical conclusions can be drawn from the above summarized data and analyses: 1) the current CSM for the IPEC site provides a good basis for the design of the Long Term Monitoring Program; 2) the procedures and rational used for selecting monitoring locations for leak detection have been further validated given the clear detection of the confirmed Unit 1 SFPs increased leakage during fuel removal and the detection of Tritium leakage from the waste distillation tank valves within the Unit 1 FSB; and 3) increases in radionuclide levels following a documented leak take longer to materialize in the groundwater than might otherwise be expected.

3.4.4 Conclusions - Boundary and SSC Leak Detection Monitoring

Recognizing that measured activities in the Off-Site and On-Site Boundary Wells were below I.L. levels, this overall data set continues to demonstrate that radionuclides are migrating toward the Hudson River to the West, and are not migrating off of the property to the North, East or South, as expected given groundwater flow directions from the property periphery toward the power block area.

Given the analyses discussed above, there is also no compelling reason to believe that any new undetected leaks have developed in the SSCs monitored relative to Unit 2 or 3. With the exception of locations MW-32-59, MW-42-49, and MW-53-82, no Tritium levels met their I.L.s and the overall, continued reduction in Tritium levels in the Unit 2 plume[40] is consistent with a conclusion that the Unit 2 SFP had ceased leaking after the transfer canal "pin hole leak" was repaired in late 2007. The recent increase in Tritium levels at locations MW-42-49 and MW-53-82 are likely attributed to an observed leak in the waste distillation tank valving within the Unit 1 FSB rather than increased leakage from the SSCs associated with Unit 2 and 3. The increase of Tritium levels at location MW-32-59 is inferred, in part based on the recent tracer data, to be associated with Tritium stored in the subsurface via natural and anthropogenic retention mechanisms[41]. However, given the more recent behavior observed in the Unit 2 collection box

40 It is noted that there is no Tritium plume associated with Unit 3.
41 These retentions mechanisms are discussed along with the CSM in the previously cited Hydrogeologic Site Investigation Report.

data (see below), additional investigations/data evaluations will be performed to further rule out potential Unit 2 SFP leak mechanisms. Given the above, ultimate confirmation of the these conclusions will require monitoring over a number of years to demonstrate continued depletion of Tritium from the retention mechanisms and allow ranges in seasonal variation to be adequately reflected in the monitoring data. Finally, while not a groundwater monitoring issue, a crack leak collection device[42] is also routinely monitored as part of the overall ongoing Unit 2 SFP integrity analysis. The data indicate that very small amounts of water (on average < 2/100ths of a gpd) still drain from the shrinkage crack in the concrete. The volume of drainage is episodic with apparent peaks in the flow. A full explanation of the underpinning mechanism(s) has not yet been discerned, but the peaks do not clearly correlate with refueling outages. While work is still ongoing relative to this outstanding issue, water which exits this crack is fully contained and does not enter the subsurface.

Relative to the Unit 1 data, increased leakage was anticipated during final fuel removal from Unit 1 SFPs. This leakage was readily detected by the Long Term Monitoring Program. Overall, GZA believes that continued monitoring will further demonstrate decreasing long term trends in groundwater contaminant activities over time for both the Unit 1 and Unit 2 plumes given the source interdictions completed by Entergy.

Since inception of the Long Term Monitoring Program, it has been observed that I.L.s have been routinely exceeded in a number of cases where subsequent data have demonstrated that no new leaks have occurred. The majority of these cases occur where the radionuclide levels are generally low and/or near their detection limits. It appears that data variability, likely due to seasonal precipitation influences, is the primary cause of these false positives, particularly pursuant to Tritium. Analysis of the false positives indicate that, for these cases, I.L.s equal to twice the previous yearly average are clearly too low. Uncorrected, this condition is likely to prove detrimental over the long term relative to the overall intent of establishing the I.L.s for leak detection. While simply increasing the I.L.s to a greater multiple of the yearly average would likely be appropriate for these cases, it would result in I.L.s that are too high for locations with higher levels of residual contamination. Therefore, the basis upon which the I.L.s are computed needs to be re-evaluated in light of the natural transient variability of the groundwater system in response to precipitation events, etc. Therefore, while re-evaluation/re-setting of I.L.s is a clear goal, it is still premature given the lack of sufficient data. This is particularly true given the recent behavior in Strontium levels due to the Unit 1 defueling (see **Figure 7A**). As such, the current I.Ls will remain in effect while a sufficient data base is acquired to allow better quantification of the natural (non-leak related) variability in the data.

3.5 Plume Natural Attenuation Monitoring

The fourth and final objective of the Long Term Monitoring Program is to evaluate if the groundwater plumes identified on-Site demonstrate overall reductions in total activity over time, as is consistent with the requirements of MNA, the selected remediation for the IPEC Site[43].

Given the likely ages of the leaks identified and characterized during the hydrogeologic investigation, it is probable that the Unit 2 (Tritium) and Unit 1 (Strontium) plumes had reached steady state conditions prior to the beginning of the quarterly monitoring. Given that: 1) the

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42 Further discussion of the 2005 shrinkage crack leak in the SFP concrete wall that initiated the overall groundwater investigation, and the associated crack leak collection device installed to contain any residual leakage, can be found in the Hydrogeologic Site Investigation Report.
43 The selection of MNA as the remediation for the Site is more fully discussed in the Hydrogeologic Site Investigation Report.

identified leaks in the Unit 2 SFP have all been previously repaired (the last leak repaired in 2007), and: 2) the water in the Unit 1 West Pool underwent intensified demineralization (beginning in April 2006 with a reduction in Strontium levels of over 95 percent), one might expect that the plumes should have started to markedly attenuate with time. Both plumes have in fact generally shown significant levels of attenuation, when they are viewed in their entirety and past release events and expected seasonal variability in the sampling data are accounted for. However, the attenuation has not been rapid during time frames immediately subsequent to the source interdictions implemented by Entergy, as was previously predicted.

In the case of the Unit 2 Tritium plume, levels have dropped markedly from the highest levels measured during the two-year hydrogeologic investigation. However, the rate of Tritium decrease with time has decreased. This is as predicted due to natural geologic and anthropogenic retention mechanisms which have trapped and stored Tritium released during historic Unit 2 SFP leaks, and are now slowly releasing this Tritium to the groundwater flow regime after the physical leaks have been repaired. This conclusion is consistent with the original CSM presented in the Hydrogeologic Site Investigation Report, as further supported by the recent tracer data (see **Section 3.6**).

Relative to the Unit 1 Strontium plume, Strontium levels should drop much more slowly than Tritium levels. This is because, in addition to the retention mechanisms discussed above for Tritium, Strontium also undergoes partitioning whereby this radionuclide is adsorbed from the groundwater onto solid surfaces (both geologic and anthropogenic). When the input of Strontium to the groundwater is reduced (such as via fuel pool demineralization) the solid surfaces desorb Strontium back into the groundwater, thus maintaining Strontium levels. Strontium partitioning is therefore expected to substantially slow plume attenuation. Despite partitioning effects, some plume attenuation was observed in response to pool demineralization prior to defueling, particularly proximate to the pool (see **Figure 7A**, U1-NCD, U1-SFDS, MW-42, U1-CSS). However, defueling of Unit 1 resulted in a temporarily increase in the leakage rate of West Pool water into the formation. This was expected based on previous work on the Unit 1 SFPs, but was unavoidable given the requirement to raise the pool level for fuel rod removal. The increased leakage rate has resulted in a substantial increase in Strontium levels in the immediate vicinity of the fuel pool (U1-NCD, U1-SFDS, MW-42, U1-CSS) as well as initial indications of increases in the Strontium plume levels downgradient of the pool (MW-53, MW-55 MW-54, MW-57, MW-50 – see **figure 7A**)[44]. With time, it is expected that the levels proximate to the pool will decrease and levels downgradient of the pool will increase as this additional strontium contaminated water flushes through the groundwater flow system. It is expected that this flushing mechanism will be protracted given the aforementioned impact of partitioning on Strontium levels in the groundwater. However, over time it is expected that downgradient Strontium plume levels will resume an overall downward trend once this perturbation is finished passing through the system.

3.6 Unit 2 Spent Fuel Pool Integrity Analysis

As discussed above in the context of Long Term Monitoring Program Investigation Levels, as well as in previous Quarterly Reports, the groundwater data collected to date support the conclusion that there is no compelling reason to believe that any new leaks have developed in

44 As of late 2008, all the fuel rods have been removed from the Unit 1 SFPs and the pool water has been drained. As such, the Unit 1 SFPs is no longer an active source of radionuclides to the subsurface.

the Units 1, 2 and 3 SSCs[45]. However, as discussed in the Final Investigation Report[46], the Unit 2 Spent Fuel Pool (IP2-SFP) has had documented historic leaks, which have all been either repaired and/or contained. Given that the IP2-SFP does not have an integral leak detection system, as does the IP2-SFP, this SFP has undergone additional scrutiny relative to its integrity. While the data does not demonstrate that there are any ongoing leaks in the IP2-SFP, this conclusion has been reached in the preceding quarterly reports based on visual inspection of the relatively limited data sets for the monitoring wells downgradient of the IP2-SFP. Although the total number of data points at each sampling location still remains limited, GZA has performed a more quantitative evaluation of the data pursuant to IP2-SFP integrity for this, the Q1 2009 report[47]. As discussed below, this analysis has included the following lines of evidence:

- Analysis of the trend in individual Tritium levels for each monitoring well located downgradient of the SFP;
- Analysis of the trend in individual Tritium levels for monitoring wells MW-31 and MW-32; wells which are located upgradient of the SFP but which exhibited high flourescein concentrations during the tracer test[48];
- Analysis of the trend in total activity in the Tritium plume located downgradient of the SFP over time;
- Analysis of the mass balance between total Tritium released via the known leaks, the capacity for long term storage of Tritium within subsurface retention mechanisms and the rate of Tritium removal via groundwater flow directly and indirectly to the Hudson River; and
- Analysis of the leak collection box[49] data.

3.6.1 Individual Downgradient Monitoring Well Tritium Analyses

A Mann-Kendall analysis, as referenced in USEPA Guidance for Data Quality Assessment – Practical Methods for Data Analysis,[50] was performed on the Tritium levels measured at monitoring locations associated with the IP2-SFP and downgradient Unit 2 Tritium plume. This

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45 As noted above, additional leakage from IP1-SFPs was observed as anticipated when the pool water levels were raised to allow final removal of the remaining fuel rods. This additional leakage was expected given that previous work on these pools had detected existing leaks in the upper portions of the pool walls which are typically above the pool water level. As such, the increased leakage does not constitute a new leak, but rather an expected, short term condition required to effect final rod removal. The IP1-SFPs now contain no rods and the pool water has been drained. Therefore, continued leakage from these pools is no longer possible.
46 Hydrogeologic Site Investigation Report, January 7, 2008, prepared by GZA GeoEnvironmental, Inc, on behalf of Enercon Services, Inc., for Entergy Nuclear Northeast, Indian Point Energy Center, 450 Broadway, Buchanan, NY 10511.
47 It is noted that while the majority of the data used in this analysis are current through the Q1 2009 sampling event in January/February 2009, some subsequently collected data has also been incorporated in some cases.
48 As discussed in the Final Investigation Report, groundwater above the water table flows in the down-slope direction of the bedrock fractures. In the vicinity of the IP2-SFP, this unsaturated zone water flows to the east and south, rather than to the west as does the groundwater below the water table. This unsaturated groundwater flow direction was demonstrated during the tracer testing with the highest flourescein concentrations detected in the upper portions of MW-31 and MW-32 immediately after tracer injection, and is consistent with the bedrock fracture geology (see the Final Investigation Report for further discussion).
49 This stainless steel box was sealed to the concrete SFP wall, covering the shrinkage crack that was discovered weeping water during the dry cask crane foundation excavation in 2005. This box has been containing and collecting small amounts of water since that time.
50 USEPA Guidance for Data Quality Assessment – Practical Methods for Data Analysis, EPA QA/G9, QA00 UDATE; EPA/600/R-96/084, July, 2000

statistical technique was chosen because it is particularly well suited for data sets with a limited number of points. Each of the vertical monitoring intervals at each monitoring installation location was analyzed separately. In general, only data collected after final completion of the multi-level installation[51] was used. However, there were a number of exceptions to this generalization where open borehole and/or borehole packer testing data were also used. These data were incorporated where possible given the importance of early time data (proximate to when documented leaks were still active).

As a case in point, MW-30 provides a good example of where initial open borehole data and individual multi-level data can be compared with a high degree of confidence that the data are representative of the same location and depth within the bedrock formation. This particular borehole encountered two general flow producing zones: 1) the upper zone, at the top of the saturated portion of the borehole, and 2) the lower portion of the borehole. Both packer testing and heat trace borehole flow meter testing showed that the upper zone was far more productive than the lower zone. In addition, once the borehole was completed as a multi-level installation, it was clear from the pressure transducer data that there was a strong vertically downward piezometric head gradient in the borehole. Therefore, prior to multi-level completion, the groundwater entered the upper portion of the borehole, as driven by the higher head in these fractures, and flowed downward to exit through the fractures at the bottom portion of the borehole given their lower head[52]. As such, the open borehole existed in a condition where it was entirely full of groundwater from the bedrock fractures at the upper portion of the borehole. Therefore, when the open borehole was sampled, the water obtained would be nearly entirely groundwater from the upper fractures, independent of the depth from which the sample was taken[53]. Given that the multi-level sampling data showed that the upper portion of the groundwater contained the higher Tritium levels, as expected for a SFP leak from above, the open borehole sample would yield, if anything, Tritium levels which are somewhat too low relative to an upper multi-level sample. Therefore, the high Tritium levels observed in the early-time open borehole samples from MW-30 (up to 601,000 pCi/L) can be added to the data set subsequently obtained from the upper multi-level completion in MW-30[54]. A similar analysis was used relative to the open borehole data from MW-31 and MW-32. Graphs showing the variation in Tritium concentration over time, including results from open borehole, test packer

51 Each borehole was completed as a multi-level installation. These multi-level completions were designed to segregate the borehole length into individual sampling zones with depth. The sampling zones were generally established to coincide with the more productive zones of the fractured bedrock and overburden (both natural soils and backfill). These sampling zones were then isolated from each other with various types of seals placed in the open borehole. The objective of the seals is to prevent vertical flow through the borehole and thus establish the same conditions in the formation which existed prior to the drilling of the borehole. As such, the Tritium data is considered depth-discrete. It is noted that the multi-level installations at some monitoring locations were removed and replaced with upgraded systems, such as for the monitoring installation at MW-32.

52 While the bedrock borehole is open (prior to multi-level completion), the water level in the open hole is at an elevation corresponding to the weighted average of the piezometric heads in the individual fractures intersected by the hole. The weighted average borehole head is based on the product of the head and the hydraulic conductivity for the individual fractures. Therefore, groundwater in fractures with heads greater than this average flows out of the fractures into the borehole; conversely, water in the borehole flows into fractures which have individual heads less than the average. Therefore, in the case of MW-30 where the heads in the upper fractures are greater than those deeper in the hole, groundwater flows from the fractures into the upper portion of the borehole, then flows down the hole and exits through the lower fractures.

53 As groundwater is extracted from the open borehole, the entire saturated length of the borehole experiences the same reduced groundwater level due to the pumping, independent of where the pump is located. The degree of reduction in the water level depends on how fast the water is pumped from the borehole. As such, groundwater runs into the borehole to replace the water being removed. However, the groundwater only enters the borehole from fractures which are at heads greater than the head in the borehole while it is being pumped. In addition, the rate of groundwater entering the borehole from each fracture is also dependent on the hydraulic conductivity of the individual fractures as well as the magnitude of the head in the fracture relative to that in the borehole during pumping. The greater hydraulic conductivity and higher piezometric heads in the upper fractures of MW-30 results in the sampled groundwater coming almost entirely from these fractures independent of the location of the pump in the borehole.

54 As a corollary, the open borehole data for this location cannot be used to provide early time data for the lower portion of the borehole.

and post multi-level completion ("Waterloo samples") are presented as **Figures G-1**, **G-2** and **G-3** in **Appendix G**, for MW-30, 31 and 32, respectively. Additional graphs are also presented in the appendix for the other monitoring locations downgradient of the Unit 2 SFP (see **Figures G-4** through **G-14** for MW-33 through 37, 42[55], 49, 50, 53[55] 55 and 111)[56]. These wells only include post-multi-level completion data given the limited time frame between borehole drilling and completion of the installation.

The Mann–Kendall analyses for the individual monitoring points are summarized on **Table G-1** in **Appendix G**. The table includes the results of the analysis for each depth interval ("well") at each of the multi-level monitoring locations enumerated above. The table is color coded, with green shading designating wells showing a decreasing trend, yellow for no trend, and red for an increasing trend. Of the 33 intervals included on the table, two-thirds (22) show a decreasing trend. This group of wells also includes those located within the core of the plume with the highest Tritium concentrations (MW-30-69, 33 and 111, with current yearly average Tritium concentrations > 50,000 pCi/L). These high concentrations wells better represent overall plume behavior because they encompass a great percentage of the Tritium activity in the plume.

Of the 10 wells shaded in yellow (exhibiting no trend), only 5 provide valid representations (as shaded) of Unit 2 plume behavior:

- Three (MW-42-49, MW-42-78 and MW-53-82) are located downgradient of the Unit 1 SFPs, rather than the Unit 2 SFP, and are therefore are not yet expected to show a decreasing trend due to Unit 1 defueling[55] Therefore, these wells should not be used to infer conclusions relative to plume trends for Unit 2.
- Inspection of the graph for MW-36-24 (**Figure G-7**) shows a rapid and large decrease in Tritium concentrations at early times in this overburden (discharge canal backfill) well (from > 30,000 pCi/L to <3,000 pCi/L). This large decrease is followed by a number of small perturbations around a relatively flat trend. While it is visually clear that this well has shown a major decrease in Tritium levels since containment of the 2005 shrinkage crack leak, the Mann–Kendall analysis only evaluates number of increases relative to decreases and does not weight the analysis relative to the magnitude of the change. As such, visual inspection demonstrates that this location actually exhibits an overall decreasing trend.
- Inspection of the graph for MW-34 (**Figure G-5**) shows a distinctly increasing trend at early times, followed by a distinctly decreasing trend thereafter. Given the time frames and the downgradient location of this bedrock well, it is likely that the increasing trend delineates arrival of the leading edge of the plume generated by the 2005 shrinkage crack leak. The decreasing trend would then reflect dissipation of this plume after containment of this leak (this hypothesis is supported by similar trends in MW-33 and MW-35. As such, the MW-34 location actually exhibits a decreasing trend relative to plume behavior after containment of the 2005 shrinkage crack leak.

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55 MW-42 and MW-53 are located downgradient of the Unit 1 SFPs, rather than the Unit 2 SFP. However, these two wells were included in the analyses, as requested by NRC, due to the apparent contribution of Unit 2 SFP Tritium to the Unit 1 groundwater flow regime via vadose zone transport (see Figure 6). It is noted that any decreasing Tritium trend in this area due to the termination of leaks from the Unit 2 SFP could be masked by increased leakage of Tritiated water from the Unit 1 SFPs up through the completion of defueling in November 2008.

56 Monitoring locations MW-66 and MW-67, also located downgradient of the Unit 2 SFP, could not be included in the analyses because the data sets for these two wells do not yet include the required minimum number of data points (ten) for the Mann–Kendall analysis method.

It is noted that the five remaining "no trend" wells are all associated with the two monitoring locations MW-31 and MW-32. These two locations are actually not located downgradient of the Unit 2 SFP from a saturated groundwater flow standpoint. Rather, they are generally located up- and cross-gradient. The final well, MW-31-85, is also part of this group. This is the only well for which the Mann-Kendall analysis indicates an increasing trend. The increasing trend in this well, as well as the behavior of the other wells in MW-31 and MW-32 are discussed in the following section.

Based on the evaluation summarized above, the Mann-Kendall analyses of the individual depth intervals within the groundwater monitoring installations located downgradient of the Unit 2 SFP overwhelmingly support a conclusion that the Tritium plume has exhibited an overall decreasing trend with time since monitoring began.

3.6.2 Individual Upgradient Monitoring Well Tritium and Tracer Analyses (MW-31 and MW-32)

As discussed in the preceding section, individual wells clearly exhibiting no trend or an increasing trend are confined to monitoring locations MW-31 and MW-32. These two monitoring installations are located up- and cross-gradient from the Unit 2 SFP. While not downgradient of the SFP from a groundwater flow perspective, Tritium leakage from the SFP can still migrate to these locations via vadose zone transport above the water table along dipping bedrock fractures. During the site investigation work, a tracer test was performed which clearly demonstrated that water released proximate to the SFP foundations (adjacent to MW-30) does migrate to the east and south past MW-31 and MW-32 prior to entering the water table, and then flows with the groundwater through these wells and then to the river to the west. This vadose zone migration mechanism is discussed more fully in the Hydrogeologic Site Investigation Report.

In addition to the general persistence of Tritium throughout the Unit 2 plume[57] and the absents of a clear downward trend in Tritium concentrations with time at these two specific monitoring installations, the upper-most interval in both MW-31 and MW-32 have shown an abrupt increase in Tritium over the last two quarters (Q1 and Q2[58] 09). These data can be explained by either: 1) an ongoing small episodic (< 5L/day) leak in the IP2- SFP; 2) a "retention mechanism" in the saturated and unsaturated zones under the IP2-SFP that can retain substantial volumes of highly Tritiated water (e.g., historic SFP leakage) for substantial amounts of time[59]; and/or 3) a combination of the above[60]. While Tritium concentrations in the groundwater plume could be impacted by both an ongoing leak and the retention mechanisms cited above, tracer concentrations in the groundwater cannot be replenished by SFP leakage. Therefore, a

57 The Unit 2 Tritium plume has decreased in concentration relative to the samples taken just after identification of the 2005 shrinkage crack leak (the earliest samples taken from directly below the SFP yielded Tritium concentrations over 600,000 pCi/L, while more recent maximum concentrations have been below one-half of those initial concentrations), and continues to show a general trend of decreasing concentrations over time. However, the plume still exhibits concentrations greater than we can explain if there were no further Tritium inputs to the groundwater; i.e., the plume would attenuate more quickly than observed based on 1) Tritium's lack of partitioning to solid materials in the subsurface; 2) the crystalline nature and low storativity of the bedrock; and 3) the computed and observed groundwater transport rate.

58 While this document is the Q1 09 report, some post-Q1 sampling data became available prior to report finalization. As such, data germane to the discussion of Unit 2 SFP integrity was included herewith.

59 This hypothesized "retention mechanism" is supported by our understanding of the construction methods used for the IP2-SFP and adjacent structures, evaluations of contaminant concentration variability trends over short timeframes and precipitation events, as well as the original tracer test results, as further described in Sections 7.0 and 8.0 of the Hydrologic Site Investigation Report.

60 It is also recognized that the potential exists for a fourth potential source of Tritium; that is any other leak or spill above the upgradient portions of the Unit 2 Tritium plume.

targeted round of tracer test samples was taken with the Q3 08[61] groundwater samples to help explain the generally increasing Tritium concentrations measured in MW-31-85, The results of this tracer testing was provided in the Q3 monitoring report (this information is summarized in a June 14, 2010 memo[62] provided in **Appendix H**). Overall, the primary finding of this evaluation was that tracer was still present proximate to, and downgradient of, the Unit 2 SFP. In addition, while the concentrations were reduced in magnitude, they generally matched the relative trends exhibited previously (pursuant to variation between proximate locations and over depth at individual locations), and the general plume shape remained approximately the same, with additional elongation towards the river. Given that approximately one and a half years had elapse from the initial tracer injection to the acquisition of these samples, we calculate that in the absence of groundwater storage (retention) mechanisms, the tracer should have been flushed from the groundwater flow system by that time. These data therefore provided additional support for the originally hypothesized retention mechanisms.

Subsequently, additional tracer samples were collected in light of the above cited more recent Tritium peaks in MW-31 and MW-32. These data are summarized on **Table H-1** in **Appendix H**. As can be seen from this more recent data, tracer concentrations still persist in the groundwater, nearly 2.5 years after tracer injection. These tracer data, including the Q3 08 data cited above, were plotted with time along with the corresponding Tritium data on **Figure H-1**[63]. The recent peaks in Tritium concentrations in the most shallow levels of the wells cited above (MW-31-49 and MW-32-59) are clearly evident on **Figure H-1**. The figure also shows that tracer was not detected in MW-31-49 during the Tritium peak. While this could be viewed as inconsistent with the retention mechanism CSM, it is noted that this well samples a particularly large fracture in the uppermost portions of the bedrock[64]. As such, particularly high groundwater flow volumes through this well may have provided sufficient dilution to drive the most recent tracer concentrations below detection limit. In addition, it is further noted that Tritium has been released from the Unit 2 SFP from three separate known locations[65], while the tracer was released in only one location; potentially also explaining the Tritium peak with a lack of a tracer peak in this specific well. Conversely (and thus consistent with the retention mechanism CSM), while similar fracture conditions exist in MW-32-59, a tracer peak was observed, but only after a number of months had elapsed after the Tritium Peak. Therefore, a more delayed tracer peak may still arrive at MW-31-49. Notwithstanding this single potentially conflicting data point, it is equally important to note that a number of the other wells in this group have previously fallen below detection limits for tracer, and then subsequently rebounded back to detectable levels (e.g., MW-31-63, MW-31-85, MW-32-85 and MW-32-149). These data provide strong evidence that the hypothesized retention mechanism is operable, at least to some degree, because no new tracer has been released to the subsurface. Therefore, the rebound in tracer concentrations from non-detect, clearly supports introduction of additional tracer into the groundwater flow regime from a retained source in the vadose zone. In addition, the trend in the tracer concentrations for these four wells loosely follows the corresponding Tritium trend, most notably for wells MW-31-63, MW-31-85, MW-32-59 and MW-32-85.

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61 IPEC Quarterly Long-Term Groundwater Monitoring Report, Quarters Two and Three, Report No. 3, February 6, 2009.

62 An initial version of this memo was included in the Quarters Two and Three 2008 Monitoring Report, February 6, 2009.

63 Figure H-1 includes Tritium data going back to early 2007, while the tracer data included only goes back to August 2008. Earlier tracer data was not included because graphing the associated higher concentrations would have required a scale that would mask the trends in the lower concentration, more recent data. The additional, earlier tracer data is included in the 2008 Hydrogeologic Site Investigation Report.

64 See the hydraulic conductivity values on Figure H-1, as well as the geophysical logs in Appendix C of the 2008 Hydrogeologic Site Investigation Report.

65 Tritium was released between 1990 and 1992 on the east side of the SFP, in 2005 from the shrinkage crack on the south side of the pool and up until July 2007 from the pinhole leak on the north side of the pool. Tritium was only release one time in February 2006.next to the shrinkage crack leak (south side of pool).

Overall, the more recent tracer analyses are consistent with the previous tracer data, and the associated CSM presented in the Final Report. As such, the current demonstration that the tracer persists in the groundwater flow regime over even much longer time frames now provides even stronger support for the existence of "retention mechanisms," as posited by the existing CSM for the IPEC site. In fact, a direct analog for "contaminant storage in dead-end bedrock fractures" is provided by the high tracer concentrations found above the upper packer in the vadose zone in RW-1 (see Memo in **Appendix H**). Therefore, given that Tritiated water behaves much as the tracer does, it should be expected that once highly Tritiated water has been released from the SFP, it becomes "trapped" (held in storage) and is slowly released to the groundwater flow regime over substantial periods of time. These retention mechanisms therefore act as a continuing source to the groundwater and thus can explain the observed slow rate of Tritium concentration reduction in the Unit 2 plume. In addition, it would be expected that Tritium release from the retention mechanisms would be episodic, for example as associated with periods of increased infiltration from precipitation. Such episodic releases would be expected to result in the peaks in Tritium concentrations observed.

As requested by the NRC, we have also included the precipitation records for the timeframe graphed on **Figure H1** in an effort to correlate the Tritium/tracer peaks to rainfall events. Inspection of the precipitation plot between Dec-08 and Sep-09 shows a relative lack of rain during the beginning of this period and relatively more intense rainfall during the end of the period (starting about April/May-09). This trend generally appears to correspond to the low and high points of the Tracer/Tritium peaks. However, it is not at all clear that a similar correlation extends back in time before the Dec-08 time frame. Moreover, while it is widely recognized that chemical concentrations on sites contaminated with separate phase product are impacted by infiltration rates/groundwater elevation changes, it is rare to find a robust correlation. This is due to the spatial and temporal complexity of the mechanisms involved. Therefore, a high level of credibility in this observed short term tracer correlation is not warranted. However, despite all appropriate caveats on these limited data, the correlation does still appear to exist, at least to some limited extent. In addition, this interpretation is further supported by the general acceptance that variations in rainfall infiltration/groundwater elevations impact the rate and amount of vadose zone source contamination entering the groundwater flow regime. These data thus provide further support for the retention mechanism CSM posited herein. Therefore, the "peakiness" of the Tritium data over time, as well as the overall persistence of the Unit 2 Tritium plume do not, in and of themselves, demonstrate that the Unit 2 SFP must still be leaking. In fact, the currently observed behavior was predicted in the Final Investigation Report based on the then available data and the retention mechanism postulated within the overall CSM.

3.6.3 Tritium Plume Total Activity Analysis

As discussed above, the individual well trend data, when viewed collectively, support a conclusion that the Tritium plume concentrations have been decreasing with time since monitoring began. Another method to analyze plume behavior is to compute the total Tritium activity in the plume at multiple snapshots over time. This procedure[66] was implemented for each quarterly Long Term Monitoring sampling round from Q2 2007 to Q1 2009. In addition, the

66 The individual sampling point Tritium concentrations were multiplied by the groundwater volumes in representative zones (discretized over area and depth), as computed using soil and bedrock effective porosities developed from the pumping and tracer tests (see the Hydrogeologic Site Investigation Report for further information).

bounding Tritium concentrations from Figure 8.1 of the Hydrogeologc Site Investigation Report[67] have also been included as a starting point for the graph. These data are summarized as a histogram on **Figure G-15** in **Appendix G**. As can be seen from the figure, the total Tritium activity in the plume downgradient of the Unit 2 SFP has shown a distinctly decreasing trend over time. The total Tritium activity in the plume has decreased 38 percent since Q2 2007, and has decreased by 88 percent when compared to the bounding level Tritium concentrations. This general "first order" plume decay is what would be expected for a plume undergoing Monitored Natural Attenuation after source termination. These data indicate that the leaks in the Unit 2 SFP have been terminated and that Tritium levels will decrease, but at a decreasing rate, over time.

However, the later time data on the **Figure G-15** histogram can also be viewed as having reached a horizontal asymptote. This asymptote reflects a steady Tritium activity in the plume at a value of approximately 0.011 to 0.018 Ci[68]. Dose computations, summarized in **Appendix F**, show that the computed groundwater discharge of Unit 2 Tritium conservatively amounts to approximately 0.1 Ci/yr.[69] For the plume to continue to retain the same Tritium activity over time, 0.1 Ci/yr of Tritium has to be continually supplied to the plume to replace that being lost through discharge from the groundwater. One possibility is that an unidentified leak still remains in the Unit 2 SFP. With Tritium at approximately 30,000,000 pCi/L in the SFP, a leak rate directly from the pool of only approximately 10 L/day[70] would be sufficient to provide the required Tritium input to the groundwater.

While a constant plume Tritium activity unquestionably requires a Tritium input to the groundwater flow regime to balance the level of Tritium discharge, this fact does not demonstrate the existence of a leak in the SFP. As previously discussed, migration of stored Tritium from the vadose zone (retention mechanism) down into the groundwater flow regime could also supply the required Tritium input. For this mechanism to be plausible:

1. The amount of Tritium released from the known historic leaks must be large enough to continue to feed the plume after the leaks have been terminated;

2. The half-life decay of Tritium must be accounted for in computing the Tritium activity currently remaining from the terminated leaks;

3. There must be enough capacity in the retention mechanism (overburden pores and bedrock fractures) to store the Tritiated water; and

4. The amount of Tritium currently in storage must be relatively large compared to the yearly required release rate.

As discussed in more detail in the following subsections, these four required criteria appear to be met. It appears that more than sufficient Tritium has been released and can be stored to support a stable plume consistent with that currently observed. Moreover, the retention

67 Hydrogeologic Site Investigation Report, January 7, 2008, prepared by GZA GeoEnvironmental, Inc, on behalf of Enercon Services, Inc., for Entergy Nuclear Northeast, Indian Point Energy Center, 450 Broadway, Buchanan, NY 10511.

68 See note on Figure G-15 regarding variability in Tritium activity estimate based on value adopted for bedrock effective porosity.

69 This discharge rate includes groundwater discharge to the Discharge Canal, the Hudson River, the Unit 2 VCB footing drain, the Unit 1 NCD and SFDS (with the contribution of the Unit 1 SFPs leak added back in).

70 Given that the Unit 1 SFPs has recently been closed and drained, the approximately 0.05 Ci/yr historic addition of Tritium to the groundwater from this source has been terminated. It has been assumed that this loss of Tritium input to the plume will be balanced by a future reduction in the Tritium levels extracted by the NCD and SFDS, and therefore, the Unit 2 Tritium plume should remain stable.

mechanism should be able to continue to support steady state plume behavior for at least five to ten years.

Tritium Release Magnitude - There have been three documented leaks from the Unit 2 SFP. These leaks are briefly described below, with further detail provided in the Geohydrological Site Investigation Report. In each case, a value of 30,000,000 pCi/L was used for the initial Tritium activity of the pool water, which was then decreased based on half-life decay and the duration of the leak.

- The leak first discovered was the 1990 to 1992 crack leak on the east wall of the pool. The leak apparently started on October 1, 1990 with damage to the liner, and was repaired on June 9, 1992, shortly after it was discovered. The leak rate was estimated to be as much as 50 gpd, with a total release of 35,000 gal. Assuming a SFP Tritium activity level of 30,000,000 pCi/L, the activity released was approximately 4.2 Ci. This translates into a current residual activity of approximately 1.6 Ci once half-life decay is accounted for.
- The second leak identified was the 2005 shrinkage crack leak. Initially, the leak rate averaged as high as 1.5 l/day (peak of about 2 l/day), with much lower leak rates thereafter. This leakage from the crack was contained once it was discovered which has eliminated any further release to the environment. However, the crack likely opened up prior discovery. During this time, it is estimated that up to 0.06Ci of Tritium was released. This value was computed based on the volume of water estimated to have been released from the interstitial space between the liner and the concrete SFP walls. Given the relative recent occurrence of this leak, no half-life decay was applied to this value.
- The third leak identified was the weld imperfection (“pinhole”) in the north wall of the transfer canal. The weld dates back to the construction of the pool liner and it is therefore likely that the leak existed from at least 1980 until it was terminated in July 2007. The leak was characterized as a “1/8 inch pinhole”. Such a hole in a ¼ inch thick liner at a depth of 25 feet could leak at a rate of up to 2000 gpd. While the actual leak rate is not known, a value of 2000 gpd is clearly an overestimate because the required refilling rate would likely have been detected and investigated. For benchmarking purposes, a 1/32 inch diameter hole could leak up to 140 gpd, a value that would not necessarily be detectable during routine operation given that typical evaporations rates are estimated to be on the order of 200 gpd. Even reducing the leak to 50 gpd, a rate which is consistent with that estimated for the 1990 to 1992 leak, results in a release of approximately 28 Ci, after accounting for half-life decay. To be conservative in our analysis, this value was further reduced by an order of magnitude to 5 gpd, resulting in a residual Tritium activity of 2.8 Ci.

Based on the above three documented leaks, approximately 4.5 Ci of Tritium (after half-life decay) has been computed to have been released into the formation[71].

71 It is recognized that if the amount of leakage exceeds the storage volume, then the excess leakage would be released directly to the groundwater, and therefore could not be counted as a potential stored source. However, the computed storage volume, as described in the next subsection, far exceeds the adopted leakage volume. It is also recognized that some Tritium activity would have been released from storage (due to precipitation infiltration, etc.) during the period of ongoing leakage. While this volume would contribute to the historic plume, it would no longer be available as a source for future plume generation. Given that groundwater sampling data is not available prior to 2005, the rate of this historic Tritium release from storage cannot be determined. However, any reasonably likely degree of overestimation of the computed current storage volume should be accounted for within the

Tritium Storage capacity - As discussed in more detail in the Geohydrologic Site Investigation Report, Tritiated water released from the Unit 2 SFP must migrate through the vadose zone prior to entering the saturated groundwater flow regime. During migration to the groundwater table, the Tritiated water encounters a number of features, both naturally occurring (such as dead end fractures in the bedrock) and anthropogenic (such as backfill above concrete foundations and/or fractures created during construction blasting) where the water can become trapped and stored. Additional water, such as from infiltration of precipitation, entering these features over time can displace some of the Tritiated water causing it to resume its migration to the water table. Once this stored water enters the groundwater flow regime, it acts as a continuing source which “feeds” and maintains the plume[72].

For the retention mechanism SCM to be realistic, sufficient capacity must exist to store substantial amounts of Tritiated water for long time periods. To evaluate the sufficiency of the available capacity, the total volume of the probable storage was computed using the following data:

- Natural bedrock fractures in the unsaturated zone were computed to result in a bedrock porosity of 0.3%; of which 10% (0.03% porosity) were assumed to be dead ended and could provide storage capacity;
- Construction blasting was assumed to increase the natural fracturing of the bedrock proximate to foundations by a factor of 3, with 2/3s of these fractures being dead ended resulting in a storage porosity of 0.06%;
- A six inch soil backfill thickness with a porosity of 20% was assumed to be saturated above foundation working mats.

The above porosities were applied only to areas which could intercept Unit 2 SFP leakage prior to it reaching the water table. As such, zones utilized in the computation included:

- Bedrock only between elevation 51 (bottom of Unit 2 SFP) and the water table elevation;
- Bedrock only in areas above the upper portion of the plume which appear to be potential source areas;
- Backfill above structure mud mats only in areas east of VCB and above plume; and
- Soil in the immediate vicinity of MW-111.

As such, potential storage volume not considered, so as to be conservative, include:

- Any bedrock fractures or soil porosity within the saturated zone;
- Any capillary retention in vadose zone soils;
- Any mud mat not above the plume;
- Any mud mat west of the VCB;
- Anything above elevation 51’; and
- Anything downgradient of MW-111

uncertainty associated with the conservative final reduction in the assumed leak rate of the weld imperfection (i.e., from 50 gpd to 5 gpd).

72 In addition to storage in the vadose zone, storage can also occur in dead end fractures, etc in the saturated zone.

The above outlined computations resulted in an estimated storage capacity of 38Ci.

Tritium Storage Relative to Release Rate - As discussed above, the Tritium in storage must be large relative to the release rate needed to maintain the plume. Otherwise, the yearly reduction in the stored activity would quickly begin to deplete the storage, which would then be reflected in a decreasing release rate, and thus an attenuating total plume activity (i.e., not constant as potentially indicated by the histogram). The total estimated Tritium activity in storage has been computed to be at least 4.5 Ci. This is the lower of the values estimated for Tritium released (4.5 Ci) and storage capacity (38 Ci). This value is 45 times larger than the estimated Tritium release rate required to maintain the Unit 2 Tritium plume in its current state. As such, it appears that there is more than sufficient Tritium in storage to maintain the existing plume for at least ten years. That is, after ten years of 0.1 Ci/yr storage depletion, 35 times the annual depletion would still remain. Therefore, one would not expect to see a substantial decrease in rate of release from storage over that period of time, and thus the plume activity should remain stable.

3.6.4 Collection Box Data

As discussed more fully in the Hydrogeologic Site investigation report, once the 2005 shrinkage crack leak was found, leakage from the crack was thereafter contained and collected, and no longer could/can enter the subsurface environment. The containment currently consists of a stainless steel box ("Collection Box") which was sealed to the concrete wall over the crack area in February 2006[73]. This box is drained to a collection vessel where the volume is measured and routine samples are taken for analysis.

As shown on **Figure I-1**, the leak rate has been episodic with typical prolonged rates of < 20mL/day, separated by relatively shorter periods of higher leak rates (>200 mL/day). The periods of higher leak rate generally appeared to occur during the spring, at least initially. It is important to view this leak rate in the context of the total leak volume, which has only been approximately 100 liters (about 25 gallons) over the four years since the leak was discovered, or a little over two fluid ounces per day. Once the high leak rate just after initial crack discovery subsided, the rate has averaged only a little over one fluid once per day. It is also important to note that there have been no detections of short lived radionuclides in the leakage water after the 2005 discovery of the leakage[74]. In addition, while the Tritium activity increases with increased leak rate[75], the levels are well below the activity in the pool[76]. Therefore this water is not coming directly from the fuel pool, but rather, has been stored between the stainless steel liner and the concrete SFP wall. As discussed above, SFP water clearly entered this interstitial space during the 1990 to 1992 leak, as well as from the weld imperfection in the Transfer Canal liner (terminated in July 2007). A number of hypotheses have been developed over time to explain the continuing leakage, both with respect to generation of the water as well as its variable Tritium activity. However, no single hypothesis provides a completely compelling explanation encompassing all the data. The individual conceptual models include:

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73 Between the crack discovery in 2005 and installation of the permanent leak collection box in February 2006, temporary containment and collection systems were used.

74 During the earliest sampling events, Cesium 134 was initially detected. The Cesium 134 to Cesium 137 ratio implied an age for the water of 5 to 9 years. However, it is not clear that this sample wasn't contaminated with material from the wall surface, which could have been associated with historic cask wash pit leakage down along the wall. This joint between the cask wash pit floor and SFP wall has since been reconstructed and sealed.

75 It is also noted that Boron concentrations and gamma activity also increase with increased leakage rates.

76 While the Tritium levels in the pool are generally about 30,000,000 pCi/L, the maximum level in the leak water after the 2005 discovery has been 15,000,000 pCi/L with levels typically around 10,000,000.

- Initially, it was hypothesized that the higher leak rate periods occurred during refueling events, which also occur in the spring. Potentially, refueling could have caused the liner to flex, thus "squeezing" the interstitial space and expelling stored water out of the crack. However, refueling only occurs every other year, so the peak in 2007 would not be coincident with a refueling event.
- It also has been hypothesized that the spring melt and rainfall events could be responsible for the increased leak rate. This would require a mechanism[77] to allow infiltrating precipitation to flow through an upper elevation crack(s) in the concrete SFP wall (located at a higher elevation than the "2005 crack" at elevation 61') and pool in the interstitial space between the stainless steel liner and the wall. This water[78] could replenish the volume in the interstitial space, migrate to, and then flow out of the 2005 crack into the collection box. The spring peaks in the collection box also appeared to at least loosely correlate with episodic Tritium peaks in MW-31 and MW-32 (see **Figure G-2** and **G-3**), both hypothesized to be driven by variable infiltration events. More recent data, however, has shown that the leak rate peak in the spring of 2008 was subsequently followed by multiple peaks over the entire year. The increased number of peaks in 2008 was then followed by the 2009 which contained no peaks through late summer, even though we had a very wet late spring/early summer.
- The most recent collection box data from September 2009 has once again exhibited peaks in the leak rate. The two peaks observed appear to correlate with insertion of the HI-TRAC into the pool. The mechanism leading to the increased leakage is currently not understood but could be related to operations associated with dry cask storage. Current hypotheses Indicate the increased leakage could be related to: 1) the weight of the equipment outside the pool on the floor slab next to the SFP wall - the slab is structurally integrated with the wall so slab flexure could also flex the wall and liner; 2) the weight of the HI-TRAC on the liner floor within the pool; and/or 3) the potential increased water levels in the pool during HI-TRAC submergence. A number of dry cask tests were also performed in 2008, which could therefore be related to the relatively high number of lower level peaks that year.

Given the currently available data, a definitive explanation for the episodic leakage rate into the collection box has not yet been determined. Additional data is currently being collected to provide further insight into potential operable mechanisms. Independent of the mechanism(s)

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77 During the spring melt, it is likely that greater than average amounts of infiltrating water migrates over and through the vadose zone bedrock. However, this water should generally not be able to reach the Unit 2 SFP wall because the wall is separated from the bedrock by a "blast rock" backfill. The generally high hydraulic conductivity of this material allows rapid downward flow to the bottom of the backfill before the infiltrating water can reach the wall. As such, this infiltrating water should not enter cracks in the upper portion of the SFP wall. However, it is likely that during construction, the backfilling process took substantial time to complete. Rainstorms occurring during this period could easily have washed surface erosion materials (mud) into the partially backfilled excavation. This "mud" would form a low hydraulic conductivity layer on top of the backfill, between the bedrock and the wall, which would then be filled over with more blast rock backfill. In addition, layers of less conductive fill may have also been used as part of the backfilling process. If one of these low conductivity layers was positioned just below a crack in the wall, infiltrating water could pond on top of the layer and then flow into the crack. While this hypothesized conceptual model requires a number of coincident conditions, and could therefore be judged improbable, it is noted that this condition appears to exist at the MOB. In this case, infiltrating water is routinely observed to leak through the wall causing wet conditions in the building, even though the floor slab is well above the water table.

78 It was recognized that the infiltrating water would carry no Tritium activity and would have to mix with the water already in the interstitial space to gain the activity needed to match that of the leakage. This infiltration of clean water should not result in significant dilution of the stored water given the relatively small amount of total leakage to date as compared to the estimated volume of the interstitial space.

responsible, once water enters the collection box, this “leakage” is collected and properly disposed of and thus cannot enter the subsurface environment[79].

3.6.5 Minimum Detectable Leak Rate

To date, much investigative work has been completed on the Unit 2 SFP liner and a robust long term groundwater monitoring system has been installed. While there is no compelling data demonstrating that an undetected leak remains in the Unit 2 SFP, it is also clear that there can never be sufficient data to guarantee that this SFP is completely leak free – i.e., that no leak of any size still exists. Quantification of the maximum probable size of a leak that could remain undetected by the long term monitoring system was therefore undertaken. The objective of this work is to provide a conservative quantitative value which can be compared to permitted levels of Tritium discharge to the river through the Discharge Canal. This comparison can then provide insight into the potential dose significance of a potential undetected leak to the groundwater regime.

The amount of Tritium activity flowing in the groundwater plume to the river has been computed to be approximately 0.1 Ci/yr. For pool water at 30,000,000 pCi/L, this equates to leak rate of approximately 10 L/day, or about 2.5 gallons per day (gpd). Therefore, it would be expected that a new leak at a rate of 2.5 gpd would double the Tritium levels in the plume over time. A doubling of the Tritium levels should be detectable once most of the wells exhibit this trend. Therefore, the increasing trend in Tritium levels from a 2.5 gpd new leak may take an extended time to become evident.

Another metric that can provide potential insight into the minimum potential leak rate is the tracer study previously conducted at the IPEC site. Based on a computation accounting for tracer and Tritium source concentrations, as compared to their respective detection limits, it appears that a Tritium leak of on the order of 5 gallons should be detectable at MW-32 (the monitoring installation with the greatest response during the tracer test). Other monitoring installations proximate to the Unit 2 SFP would therefore be expected to require higher leak rates based on the tracer test. In addition, it is also noted that the tracer injection was all introduced into the formation over a very short period of time. Therefore, a higher leak volume would likely be required if it occurred over a longer period of time. Finally, conclusions based on the tracer testing are all contingent on the location of the single tracer injection relative to the monitoring well locations. Leaks in other SFP locations would be expected to behave differently.

Given the above data and analyses, and also accounting for the substantial level of uncertainty involved, we believe that a new leak of SFP water of a magnitude between 10 to 30 gpd should be detectable with the current Long Term Monitoring Program within a relatively few monitoring quarters.

3.6.6 Conclusions – Unit 2 SFP integrity

Overall, the preponderance of the data demonstrate that the Tritium activity in the plume has decreased substantially since groundwater monitoring began. However, it is also apparent that the rate of decrease is slower than would be expected if no additional Tritium was being

79 While this leakage cannot enter the environment, it is possible that other unidentified cracks exist in the SFP concrete wall which could release similarly generated water into the subsurface formation.

released into the groundwater flow regime. The original CSM, as outlined in the Hydrogeologic Site Investigation Report, includes a "retention mechanism" that stores Tritiated water from historic liner leaks in the vadose zone, and then gradually and episodically releases some of this Tritium to the groundwater over time. The currently available data and analyses summarized herein, particularly including the most recent tracer data, provide further confirmation of the existence of this mechanism. This retention mechanism is expected to be capable of continuing to support the existing plume activity for at least five to ten years into the future, without any additional contribution of Tritium from a continuing or new leak in the Unit 2 fuel pool. Therefore, the existing Tritium plume behavior does not provide a compelling argument that there is a continuing leak in the Unit 2 SFP. Given this conclusion and the recognition that Entergy has terminated all identified leaks in the Unit 2 SFP, the Unit 2 Tritium plume satisfies the requirements for Monitored Natural Attenuation (MNA).

However, it is also recognized that there could still be a small continuing leak in the SFP that is also providing Tritium to the plume in addition to that released from the retention mechanism. The most recent data from the leak collection box indicates that pool water may be migrating around/through the liner and recharging the interstitial space between the liner and the SFP concrete wall. While any water that is released through the 2005 shrinkage crack in the wall is captured, contained and disposed of, and thus can not impact the groundwater, there may be other additional cracks in the wall which are not contained. If such additional cracks exist, it would not be unlikely that interstitial water could escape and eventually enter the groundwater regime (after also recharging the retention mechanism).

While a continuing leak from the Unit 2 SFP cannot be ruled out, if such a leak(s) exists, it is small. Based on the analyses summarized above, we believe that the maximum leak rate from the Unit 2 SFP that could potentially remain undetected by the groundwater monitoring system is less than 10 to 30 gpd. It is also likely that if a small leak exists in the liner, it should not get worse with time, as based on liner evaluations previously conducted by Entergy[80]. It is further emphasized that while a leak of 10 to 30 gpd should be large enough to be readily detectable with the existing Long Term Monitoring Program, this amount of Tritium release to the river is still small compared to permitted levels of Tritium discharge to the river through the Discharge Canal.

80 As part of the overall Unit 2 SFP liner integrity evaluation, Entergy undertook testing of a number of welds relative to the potential for ongoing corrosion, such as due to Microbial-Influenced Corrosion (MIC). It was concluded that there was no evidence of ongoing corrosion.

4.0 CONCLUSIONS AND PLANNED ACTIVITIES

Evaluation of data collected during Q1 2009 has shown the following:

- While I.L.s have been met at a number of locations, there is no evidence of new leaks from the Systems, Structures, or Components monitored, with the exception of the anticipated additional leakage from the Unit 1 SFPs and the recently observed leakage from the waste distillation tank valves within the Unit 1 FSB. Based on past work, additional leakage was expected during the raising of water levels in the Unit 1 SFPs for final fuel removal to ISFSI storage. The leakage from the Unit 1 SFPs was initially detected as pronounced increases in Strontium and Cesium in the monitoring locations closest to Unit 1. The recent leakage from the waste distillation tank valves was independently[81] identified based on an increase in Tritium levels in monitoring installations proximate to the tanks. As such, these data support the validity of the current CSM for use as a basis for Long Term Monitoring Program design.
- Based on the Q1 2009 data, as well as that collected during previous quarters, it currently appears that the Tritium I.L.s originally established are somewhat too sensitive relative to natural seasonal/precipitation-driven transient variations in radionuclide activities, as well as the variability inherent in the laboratory analyses. Relative to Strontium from the Unit 1 SFPs, the increases in activity in a number of monitoring points, due to the recent defueling activities, limit our ability to establish Strontium baseline levels for assessment of new I.L.s pursuant to the Monitored Natural Attenuation (MNA) of this plume. It is anticipated that this additional Strontium activity will take a number of quarters to flush through the groundwater flow system and attenuate to reasonably stable levels. .As such, the existing I.L.s will continue to be used until sufficient data is collected to allow re-evaluation of I.L. levels for the radionuclides of interest.
- The new data for Q1 2009 continue to show that the computed overall groundwater flow through the Site is greater than that previously computed for the 2007 reference data set. While the 2008 yearly rainfall was higher than that for 2007, it was only slightly higher. It appears that high frequency/intensity rainfall just prior to the 2008 and 2009 quarterly measurements may explain, at least in part, the higher computed flows. In addition, the process of drawing groundwater elevation contours evolved over time after 2007 as new information pursuant to the influence of plant structures on the groundwater flow field became available. This evolving process resulted in some changes to the general shapes of the contours, which impacted computed gradients and thus the flow rates. However, given the overall small variability of flow over the seasons monitored to date, as well as the recognition that the computed doses to the river are a small fraction of the permitted amounts, GZA believes that recalibrating the Precipitation Mass Balance Model, as used to compute groundwater flux through the Site as part of the radionuclide dose computation, is not warranted at this time. Once sufficient seasonal data has been collected (anticipated after the Q2 2009 sampling round), the model will be recalibrated to the quarterly data set that yields the largest groundwater flow values, so as to be conservative.

81 The valve leakage was initially identified during visual inspection rounds and quickly repaired. However, given that the leak was within the Unit 1 FSB structure, it was not documented in the GPI program. This valve leak and repair subsequently came to light within the GPI program during investigations into the cause of the abrupt increase in Tritium levels in MW-42. Reporting of such leaks has now been included in the GPI program operations.

- Additional, more quantitative analyses have been completed to further investigate the integrity of the Unit 2 SFP. These analyses provide further support for the original conclusion that the Unit 2 SFP is no longer leaking. This conclusion, along with the observed decreases in Tritium levels within the plume, satisfy the requirements for Monitored Natural Attenuation (MNA). However, these analyses cannot definitively rule out the possibility of a remaining small leak. While it is not possible to quantify the size the minimum detectable leak with any degree of certainty, we believe that the maximum leak rate from the Unit 2 SFP that could potentially remain undetected by the groundwater monitoring system is less than 10 to 30 gpd.
- Given the currently available data, a definitive explanation for the episodic leakage rate into the Unit 2 SFP collection box has not yet been determined. Additional data is therefore currently being collected to provide further insight into potential operable mechanisms. This ongoing work is currently focused on HI-TRAC operations associated with dry cask storage.
- It is not yet possible to conclude that no leaks of any size remain in the Unit 2 SFP. However, if a small leak does exist, it is unlikely to get worse with time, as based on liner evaluations previously conducted by Entergy[82]. It is further emphasized that while a leak of 10 to 30 gpd should be large enough to be readily detectable with the existing Long Term Monitoring Program, this amount of Tritium release to the river is still a small fraction of that which is currently permitted for release to the river through the Discharge Canal.
- The overall Sr-90 activity within the Unit 1 plume had generally been stable or decreasing in response to the West Pool demineralization activities conducted by Entergy beginning in 2006. However, the final defueling of the Unit 1 SFPs has resulted in a substantial increase in Strontium levels proximate to the SFPs, as well as initial indications of increases in the Strontium plume levels downgradient. This is as was predicted given the requirement to temporarily raise the pool levels for rod removal, thus increasing leakage rate from the SFPs[83]. With time, it is expected that the levels proximate to the pool will decrease and levels downgradient of the pool will increase as this additional strontium contaminated water flushes through the groundwater flow system. It is expected that this flushing mechanism will be protracted given the aforementioned impact of partitioning on Strontium levels in the groundwater. However, over time it is expected that downgradient Strontium plume levels will also resume an overall downward trend once this perturbation is finished passing through the system.

Based on the results and evaluation of the Q1 2009 groundwater monitoring within the context of the Long Term Monitoring Program, IPEC plans to continue routine groundwater sampling and related maintenance. This work will be conducted in accordance with the IPEC Radiological Groundwater Monitoring Program IP-SMM-CY-110, and will incorporate the enhancements suggested by the NRC as described herein.

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82 As part of the overall Unit 2 SFP liner integrity evaluation, Entergy undertook testing of a number of welds relative to the potential for ongoing corrosion, such as due to Microbial-Influenced Corrosion (MIC). It was concluded that there was no evidence of ongoing corrosion.

83 As of late 2008, all the fuel rods have been removed from the Unit 1 SFPs and the pool water has been drained. As such, the Unit 1 SFPs is no longer an active source of radionuclides to the subsurface.

TABLES

Table 1 **Groundwater Sampling Methods, Equipment, Frequency, and Depths**

Table 2 **2009 1st Quarter Low Tide Groundwater Elevations**

Table 3 **2009 1st Groundwater Analytical Results and Averages**

Table 4 **2009 1st Quarter Groundwater Analytical Results**

Table 5 **Historic Groundwater Analytical Results**

TABLE 1
GROUNDWATER SAMPLING METHODS, EQUIPMENT, FREQUENCY AND DEPTHS
INDIAN POINT ENGERGY CENTER
BUCHANAN, NY

Well ID[1]	Sampling Method	Sampling Eqnipment Used	Projected 2009 Sampling Frequency[2]	SAMPLING INTERVAL[3]				SAMPLING DEPTH[4]	
				Ft Below Top of Casing		Elevation in Feet msl			
				Top	Bottom	Top	Bottom	Feet Below TOC	Elevation in Feet msl
MW-30-69	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	67.3	71.3	8.4	4.4	69.3	6.4
MW-30-84	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	77.3	85.4	-1.6	-9.5	83.8	-8.1
MW-31-49	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	34.8	49.3	40.8	26.3	48.8	26.8
MW-31-63	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	55.3	63.8	20.3	11.8	63.3	12.3
MW-31-85	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	69.8	85.4	5.8	-9.6	84.8	-9.2
MW-32-59	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	28.3	61.3	48.8	15.8	58.8	18.3
MW-32-85	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	79.3	92.8	-2.2	-15.7	85.3	85.3
MW-32-131	Waterloo Low Flow	Waterloo Multilevel System	Inactive	125.8	138.3	-48.7	-61.2	130.8	-53.7
MW-32-149	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	125.8	156.8	-70.2	-79.7	149.3	-72.2
MW-32-173	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	165.8	174.3	-88.7	-97.2	172.8	-95.7
MW-32-190	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	180.3	193.9	-103.2	-116.8	190.3	-113.7
MW-33	Low Flow	Peristaltic Pump	Annually	8.0	30.0	10.6	-11.7	16	2.8
MW-34	Low Flow	Peristaltic Pump	Inactive	5.0	30.0	13.5	-11.5	16.5	2.0
MW-35	Low Flow	Peristaltic Pump	Annually	6.5	30.0	12.1	-11.4	15.0	3.6
MW-36-24[5]	Low Flow	Peristaltic Pump	Quarterly	11.0	24.0	0.8	-12.2	17.0	-5.2
MW-36-41	Low Flow	Peristaltic Pump	Inactive	36.0	41.0	-24.2	-29.2	37.0	-25.2
MW-36-52	Low Flow	Peristaltic Pump	Quarterly	48.0	53.0	-36.2	-41.2	50.0	-38.2
MW-37-22	Low Flow	Peristaltic Pump	Quarterly	12.0	22.0	3.0	-7.0	17.0	-2.0
MW-37-32	Low Flow	Peristaltic Pump	Quarterly	28.0	32.5	-13.0	-17.5	29.0	-14.0
MW-37-40	Low Flow	Peristaltic Pump	Quarterly	38.5	40.5	-23.5	-24.5	39.0	-24.0
MW-37-57	Low Flow	Peristaltic Pump	Quarterly	52.0	57.0	-37.0	-42.0	55.0	-40.0
MW-38	Low Flow	Peristaltic Pump	Inactive	5.0	40.0	9.3	-25.7	25.4	-11.1
MW-39-67	Waterloo Low Flow	Waterloo Multilevel System	Bi-Annually	65.0	70.5	15.0	9.5	67.0	13.0
MW-39-84	Waterloo Low Flow	Waterloo Multilevel System	Bi-Annually	76.5	85.0	3.5	-5.0	83.5	-3.5
MW-39-102	Waterloo Low Flow	Waterloo Multilevel System	Bi-Annually	93.0	103.0	-13.0	-23.0	101.5	-21.5
MW-39-124	Waterloo Low Flow	Waterloo Multilevel System	Bi-Annually	115.0	126.5	-35.0	-46.5	124.0	-44.0
MW-39-183	Waterloo Low Flow	Waterloo Multilevel System	Bi-Annually	169.5	186.0	-89.5	-106.0	182.5	-102.5
MW-39-195	Waterloo Low Flow	Waterloo Multilevel System	Bi-Annually	193.0	198.6	-113.0	-118.4	195.0	-115.0
MW-40-27	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	18.2	35.2	55.0	38.0	26.7	46.5
MW-40-46	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	44.2	53.7	29.0	19.5	46.2	27.0
MW-40-81	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	64.7	84.2	8.5	-11.0	80.7	-7.5
MW-40-100	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	93.2	106.7	-20.0	-33.5	100.2	-27.0
MW-40-127	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	125.2	136.7	-52.0	-63.5	127.2	-54.0
MW-40-162	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	158.7	190.3	-85.5	-116.9	161.7	-88.5
MW-41-40	Low Flow	Peristaltic Pump	Bi-Annually	22.0	42.0	32.9	12.9	36.0	18.9
MW-41-63	Modified Well Vol. Purge	Waterra Pump	Bi-Annually	59.0	64.0	-4.1	-9.1	61.0	-6.1
MW-42-49	Modified Well Vol. Purge	Submersible Pump	Quarterly	31.0	51.0	38.7	18.7	41.0	28.7
MW-42-78	Modified Well Vol. Purge	Waterra Pump	Quarterly	69.0	79.0	0.7	-9.3	74.0	-4.3
MW-43-28	Low Flow	Submersible Pump	Bi-Annually	8.0	28.0	40.8	20.7	23.0	25.8
MW-43-62	Low Flow	Submersible Pump	Bi-Annually	42.0	62.0	6.8	-13.2	54.0	-5.2
MW-44-66	Modified Well Vol. Purge	Submersible Pump	Quarterly	52.0	67.0	41.5	26.5	63.0	30.5
MW-44-102	Modified Well Vol. Purge	Waterra Pump	Quarterly	79.0	104.0	14.5	-10.5	80.0	13.5
MW-45-42	Modified Well Vol. Purge	Peristaltic Pump	Quarterly	27.5	42.5	26.2	11.2	37.0	16.6
MW-45-61	Modified Well Vol. Purge	Peristaltic Pump	Quarterly	51.5	61.5	2.2	-7.8	58.0	-4.4
MW-46	Modified Well Vol. Purge	Submersible Pump	Quarterly	6.0	30.0	12.1	-11.9	10.5	7.6
MW-47-56	Low Flow	Submersible Pump	Inactive	36.0	56.0	34.3	14.3	52.0	18.3
MW-47-80	Modified Well Vol. Purge	Waterra Pump	Inactive	70.0	80.0	0.3	-9.7	72.0	-1.7

TABLE 1
GROUNDWATER SAMPLING METHODS, EQUIPMENT, FREQUENCY AND DEPTHS
INDIAN POINT ENGERGY CENTER
BUCHANAN, NY

Well ID[1]	Sampling Method	Sampling Eqnipment Used	Projected 2009 Sampling Frequency[2]	SAMPLING INTERVAL[3]				SAMPLING DEPTH[4]	
				Ft Below Top of Casing		Elevation in Feet msl			
				Top	Bottom	Top	Bottom	Feet Below TOC	Elevation in Feet msl
MW-48-23	Low Flow	Peristaltic Pump	Inactive	8.0	23.0	7.4	-7.6	15.8	-0.4
MW-48-37	Low Flow	Peristaltic Pump	Inactive	33.0	38.0	-17.6	22.6	35.8	-20.4
MW-49-26	Low Flow	Peristaltic Pump	Quarterly	15.0	25.0	-0.3	-10.4	20.0	-5.3
MW-49-42	Low Flow	Peristaltic Pump	Quarterly	32.0	42.0	-17.4	-27.4	37.0	-22.3
MW-49-65	Low Flow	Peristaltic Pump	Quarterly	60.0	65.0	-45.4	-50.4	61.0	-46.4
MW-50-42	Low Flow	Peristaltic Pump	Quarterly	22.0	42.0	-7.1	-27.1	27.0	-12.1
MW-50-66	Low Flow	Peristaltic Pump	Quarterly	62.0	67.0	-47.1	-52.1	60.0	-45.1
MW-51-40	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	29.7	44.2	38.0	23.5	39.7	28.0
MW-51-79	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	63.2	81.2	4.5	-13.5	78.7	-11.0
MW-51-104	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	101.2	111.2	-33.5	-43.5	103.7	-36.0
MW-51-135	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	130.2	143.7	-62.5	-76.0	135.2	-67.5
MW-51-163	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	154.7	166.2	-87.0	-98.5	162.7	-95.0
MW-51-189	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	184.2	197.8	-116.5	-129.9	189.2	-121.5
MW-52-11	Modified Well Vol. Purge	Peristaltic Pump	Annually	2.0	12.0	14.8	4.8	10.0	6.8
MW-52-18	Waterloo Low Flow	Waterloo Multilevel System	Annually	10.0	30.0	4.9	-15.1	17.5	-2.6
MW-52-48	Waterloo Low Flow	Waterloo Multilevel System	Annually	48.0	56.0	-33.1	-41.1	48.0	-33.1
MW-52-64	Waterloo Low Flow	Waterloo Multilevel System	Annually	59.0	71.5	-44.1	-56.6	64.0	-49.1
MW-52-122	Waterloo Low Flow	Waterloo Multilevel System	Annually	110.5	123.5	-95.6	-108.6	122.0	-107.1
MW-52-162	Waterloo Low Flow	Waterloo Multilevel System	Annually	154.5	164.0	-139.6	-149.1	161.5	-146.6
MW-52-181	Waterloo Low Flow	Waterloo Multilevel System	Annually	171.0	198.1	-156.1	-183.0	181.0	-166.1
MW-53-82	Low Flow	Submersible Pump	Quarterly	62.0	82.0	8.3	-11.7	75.0	-4.7
MW-53-120	Modified Well Vol. Purge	Waterra Pump	Quarterly	100.0	120.0	-29.7	-49.7	105.0	-34.7
MW-54-37	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	29.0	42.0	-15.9	-28.9	36.5	-23.4
MW-54-58	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	51.5	64.0	-38.4	-50.9	57.5	-44.4
MW-54-123	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	116.0	126.0	-102.9	-112.9	123.0	-109.9
MW-54-144	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	135.0	155.5	-121.9	-142.4	144.0	-130.9
MW-54-173	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	170.5	182.0	-157.4	-168.9	172.5	-159.4
MW-54-190	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	185.0	203.6	-171.9	-190.3	190.0	-176.9
MW-55-24	Low Flow	Peristaltic Pump	Quarterly	14.0	24.0	4.3	-5.8	16.0	2.3
MW-55-35	Low Flow	Peristaltic Pump	Quarterly	30.0	35.0	-11.8	-16.8	32.0	-13.8
MW-55-54	Low Flow	Peristaltic Pump	Quarterly	44.0	54.0	-25.8	-35.8	47.0	-28.8
MW-56-53	Modified Well Vol. Purge	Submersible Pump	Bi-Annually	49.2	54.2	21.0	16.0	52.0	18.3
MW-56-83	Modified Well Vol. Purge	Waterra Pump	Bi-Annually	69.9	84.9	0.4	-14.6	74.0	-3.7
MW-57-11	Modified Well Vol. Purge	Peristaltic Pump	Bi-Annually	6.0	11.0	9.0	4.0	10.0	5.0
MW-57-20	Modified Well Vol. Purge	Peristaltic Pump	Bi-Annually	15.5	20.5	-0.5	-5.5	19.0	-4.0
MW-57-45	Modified Well Vol. Purge	Peristaltic Pump	Bi-Annually	30.5	45.5	-15.5	-30.5	40.0	-25.0
MW-58-26	Low Flow	Peristaltic Pump	Bi-Annually	16.0	26.0	-1.4	-11.4	20.0	-5.4
MW-58-65	Low Flow	Peristaltic Pump	Quarterly	50.0	65.0	-35.4	-50.4	54.0	-39.4
MW-59-32	Low Flow	Peristaltic Pump	Inactive	21.0	31.0	-6.5	-16.5	27.0	-12.5
MW-59-45	Low Flow	Peristaltic Pump	Inactive	35.0	45.0	-20.5	-30.5	42.0	-27.5
MW-59-68	Low Flow	Peristaltic Pump	Inactive	53.0	68.0	-38.5	-53.5	58.0	-43.5
MW-60-35	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	24.9	39.4	-12.4	-26.9	34.9	-22.4
MW-60-53	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	45.4	59.4	-32.9	-46.9	53.4	-40.9
MW-60-72	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	66.4	78.9	-53.9	-66.4	72.4	-59.9
MW-60-135	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	124.9	141.4	-112.4	-128.9	134.9	-122.4
MW-60-154	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	147.4	164.9	-134.9	-152.4	154.4	-141.9
MW-60-176	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	170.9	200.4	-158.4	-187.8	175.9	-163.4

See Page 3 for Notes

TABLE 1
GROUNDWATER SAMPLING METHODS, EQUIPMENT, FREQUENCY AND DEPTHS
INDIAN POINT ENGERGY CENTER
BUCHANAN, NY

Well ID[1]	Sampling Method	Sampling Eqnipment Used	Projected 2009 Sampling Frequency[2]	SAMPLING INTERVAL[3]				SAMPLING DEPTH[4]	
				Ft Below Top of Casing		Elevation in Feet msl			
				Top	Bottom	Top	Bottom	Feet Below TOC	Elevation in Feet msl
MW-62-18	Low Flow	Peristaltic Pump	Quarterly	4.7	14.7	10.0	0.0	13.5	1.2
MW-62-37	Low Flow	Peristaltic Pump	Quarterly	33.3	38.3	-18.6	-23.6	34.5	-19.8
MW-62-53	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	49.6	54.1	-36.8	-41.3	53.1	-40.3
MW-62-71	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	61.1	82.6	-48.3	-69.8	71.1	-58.3
MW-62-92	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	88.6	99.1	-75.8	-86.3	91.6	-78.8
MW-62-138	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	126.1	143.6	-113.3	-130.8	138.1	-125.3
MW-62-182	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	177.6	198.7	-164.8	-185.7	182.1	-169.3
MW-63-18	Low Flow	Peristaltic Pump	Quarterly	8.0	18.0	-3.8	-13.8	14.9	0.7
MW-63-34	Low Flow	Peristaltic Pump	Quarterly	30.0	35.0	-15.8	-20.8	31.5	-17.3
MW-63-50	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	41.5	58.0	-29.2	-45.7	49.5	-37.2
MW-63-93	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	81.5	100.5	-69.2	-88.2	93.0	-80.7
MW-63-112	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	106.5	112.0	-94.2	-99.7	111.5	-99.2
MW-63-121	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	118.0	127.5	-105.7	-115.2	121.0	-108.7
MW-63-163	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	150.5	165.0	-138.2	-152.7	162.5	-150.2
MW-63-174	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	168.0	191.1	-155.7	-178.6	174.0	-161.7
MW-66-21	Modified Well Vol. Purge	Peristaltic Pump	Quarterly	7.0	27.0	6.0	-7.0	14.1	0
MW-66-36	Modified Well Vol. Purge	Peristaltic Pump	Quarterly	31.0	36.0	-17.0	-22.0	33.6	-19.5
MW-67-39	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	28.8	54.3	-15.8	-41.3	38.3	-25.8
MW-67-105	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	90.3	110.8	-77.3	-97.8	104.8	-92.3
MW-67-173	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	164.8	188.3	-151.8	-175.3	172.3	-159.8
MW-67-219	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	209.3	229.8	-196.3	-216.8	218.8	-206.3
MW-67-276	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	250.8	281.3	-237.8	-268.3	275.3	-262.8
MW-67-323	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	317.8	328.3	-304.8	-315.3	322.3	-309.8
MW-67-340	Waterloo Low Flow	Waterloo Multilevel System	Quarterly	335.3	347.9	-322.3	-334.9	339.8	-327.3
MW-107	Low Flow	Submersible Pump	Annually	105.1	126.1	34.9	13.9	32.7	110.1
MW-111	Low Flow	Peristaltic Pump	Bi-Annually	11.6	17.4	7.0	1.5	16.5	2.4
U3-4D	Modified Well Vol. Purge	Peristaltic Pump	Quarterly	25.0	27.6	-10.2	-12.8	25.6	-10.8
U3-T1	Low Flow	Peristaltic Pump	Quarterly	0.2	1.2	3.1	2.1	5.7	2.8
U3-T2	Low Flow	Peristaltic Pump	Quarterly	0.6	1.6	2.7	1.7	5.7	2.6
U1-CSS	Low Flow	Peristaltic Pump	Bi-Annually	NA	10.2	NA	4.9	14.0	6.1
LAF-002	Low Flow	NA	Bi-Annually	NA	NA	NA	NA	NA	-22.3
U1-NCD	Grab	NA	Quarterly	NA	NA	NA	NA	NA	NA
U1-SFDS	Grab	NA	Quarterly	NA	NA	NA	NA	NA	NA
MH-5[6]	Grab	NA	Inactive	NA	NA	NA	NA	NA	NA
B-1[6]	Grab	NA	Inactive	NA	NA	NA	NA	NA	NA
B-6[6]	Grab	NA	Inactive	NA	NA	NA	NA	NA	NA

Notes:

1. For nested multi-level monitoring wells, suffix of well ID indicates depth (rounded to nearest foot) from reference point on casing to bottom of well screen. For Waterloo multi-level systems, suffix indicates depth (rounded to nearest foot) from reference point on casing to top of sampling port. Well IDs without a suffix are open bedrock wellbores.
2. Projected sampling frequencies presented for 2009 are subject to change.
3. For nested multi-level monitoring wells, interval includes well screen and sand pack. For Waterloo multi-level systems, interval includes open wellbore between bottom of 1st packer above and top of 1st packer below sampling port. For open bedrock wellbores, interval extends from bottom of casing to bottom of hole.
4. Sampling depths within sampling intervals (i.e. location of pump intake) have been located adjacent to a transmissive zone where possible.
5. Dot pattern denotes sampling interval is positioned within overburden. Open box indicates sampling interval is in bedrock.
6. These locations are storm drains.

TABLE 2
QUARTERLY LOW TIDE GROUNDWATER ELEVATIONS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID	LOW RIVER TIDE GROUNDWATER ELEVATIONS (Feet msl)			
	Quarter 2[1], 2008	Quarter 3[2], 2008	Quarter 4[3], 2008	Quarter 1[4], 2009
HR1	-1.13	-1.05	-1.69	-3.28
I2	52.11	52.90	50.75	NA
MW-30-69	12.28	11.77	11.71	12.33
MW-30-84	13.06	12.68	12.36	13.13
MW-31-49	46.14	45.39	44.13	46.44
MW-31-63	43.96	42.17	41.21	44.12
MW-31-85	41.89	40.58	39.64	42.10
MW-32-48	47.77	46.98	45.79	48.08
MW-32-59	46.75	45.72	44.48	46.83
MW-32-85	13.17	12.30	12.16	12.60
MW-32-131	15.67	11.34	11.53	11.86
MW-32-149	10.04	9.71	9.77	10.00
MW-32-173	9.70	9.45	9.45	9.68
MW-32-190	7.52	7.16	7.05	7.24
MW-33	11.66	10.55	10.60	11.23
MW-34	12.03	10.54	10.54	11.25
MW-35	12.06	10.68	10.68	11.36
MW-36-24	6.86	7.58	9.05	NA
MW-36-52	6.29	6.99	7.45	8.12
MW-37-22	4.18	5.36	5.55	4.45
MW-37-32	4.05	5.36	5.64	4.55
MW-37-40	5.95	6.18	6.04	5.46
MW-37-57	6.07	6.64	7.20	6.50
MW-38	1.53	2.12	1.22	NA
MW-39-67	31.69	25.96	25.21	28.74
MW-39-84	31.48	25.78	25.12	28.62
MW-39-100	31.34	25.52	24.79	28.32
MW-39-102	NA	NA	NA	NA
MW-39-124	30.67	25.07	24.43	27.74
MW-39-183	29.83	22.33	23.79	26.78
MW-39-195	28.89	23.35	22.70	25.63
MW-40-27	59.99	54.70	54.22	59.53
MW-40-46	59.09	52.57	52.35	59.13
MW-40-81	55.78	47.28	46.83	55.67
MW-40-100	53.75	44.83	44.32	53.59
MW-40-127	53.39	44.33	43.87	53.29
MW-40-162	50.26	41.32	40.66	49.76
MW-41-40	33.81	31.28	30.71	33.62
MW-41-63	32.76	27.53	26.96	30.38
MW-42-49	34.81	34.52	34.43	34.78
MW-42-78	36.28	35.38	35.07	36.03
MW-43-28	33.95	32.51	32.15	33.43
MW-43-62	32.16	30.48	31.76	34.13
MW-44-66	35.47	35.29	34.00	34.96
MW-44-102	30.88	25.86	25.16	28.09
MW-45-42	37.16	28.63	25.45	32.02
MW-45-61	32.46	27.16	26.68	29.99
MW-46	14.97	12.62	12.81	14.29
MW-47-57	31.53	22.84	22.37	26.51
MW-47-80	28.35	21.52	21.08	26.37
MW-48-23	-0.23	-0.18	-0.48	-0.91
MW-48-38	0.32	0.06	-0.15	-0.50
MW-49-26	0.51	0.37	0.49	-0.25
MW-49-42	0.92	1.02	0.68	-0.06
MW-49-65	0.70	0.68	0.47	-0.08
MW-50-42	5.24	6.40	7.06	5.66
MW-50-66	2.24	2.83	2.34	1.95
MW-51-40	52.35	49.44	49.24	49.32
MW-51-79	44.17	40.71	40.36	42.75
MW-51-102	39.04	36.56	36.17	38.18
MW-51-104	39.02	36.49	36.03	37.99
MW-51-135	40.71	38.10	37.68	39.75
MW-51-163	36.77	34.30	33.90	35.74
MW-51-189	31.79	29.65	29.36	30.81
MW-52-11	8.85	8.65	8.44	8.19
MW-52-18	6.07	5.89	6.02	5.78
MW-52-48	5.95	6.20	6.14	6.05
MW-52-64	5.03	5.21	5.16	5.20
MW-52-118	4.32	4.36	4.68	4.23
MW-52-122	4.18	4.21	4.55	4.11
MW-52-162	-0.80	-0.98	-1.30	-2.07
MW-52-181	-1.00	-1.30	-1.64	-2.38
MW-53-82	12.60	10.35	NA	11.11
MW-53-120	11.49	9.76	NA	10.55
MW-54-35	6.36	6.16	6.41	5.75
MW-54-37	6.53	6.30	6.58	5.90
MW-54-58	5.55	5.53	5.76	5.49
MW-54-123	3.52	4.01	4.06	2.99
MW-54-144	6.48	6.92	6.97	5.89
MW-54-173	2.85	3.27	3.29	2.19
MW-54-190	2.76	3.16	3.13	2.00
MW-55-24	8.16	8.18	9.02	8.35

See Page 2 for Notes

TABLE 2
QUARTERLY LOW TIDE GROUNDWATER ELEVATIONS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID	LOW RIVER TIDE GROUNDWATER ELEVATIONS (Feet msl)			
	Quarter 2[1], 2008	Quarter 3[2], 2008	Quarter 4[3], 2008	Quarter 1[4], 2009
MW-55-35	7.59	7.69	8.30	7.63
MW-55-54	8.32	8.22	8.82	NA
MW-56-53	29.93	NA	21.90	27.33
MW-56-83	29.16	NA	21.51	25.13
MW-57-11	NA	10.03	10.27	11.11
MW-57-20	12.07	10.02	9.92	10.63
MW-57-45	10.59	NA	NA	10.71
MW-58-26	NA	7.29	7.19	7.56
MW-58-65	7.36	7.13	6.46	6.68
MW-59-32	0.77	0.81	0.47	0.31
MW-59-45	9.23	NA	2.52	0.44
MW-59-68	-0.11	NA	-1.79	-5.66
MW-60-35	1.63	0.82	2.04	1.99
MW-60-53	-1.37	-1.76	-2.03	-2.70
MW-60-55	-0.47	-0.90	-1.21	-1.91
MW-60-72	-0.14	-0.64	NA	-1.43
MW-60-135	-0.27	-0.71	-1.02	-1.72
MW-60-154	-1.49	-1.91	-2.25	-2.99
MW-60-176	-1.82	-2.16	-2.59	-3.41
MW-62-18	0.13	0.06	-0.12	-0.82
MW-62-37	0.49	0.59	-0.15	-1.13
MW-62-52	-0.19	-0.29	-0.93	-1.64
MW-62-53	-0.10	-0.16	-0.84	-2.03
MW-62-71	-0.55	-0.56	-1.24	-2.15
MW-62-92	-0.11	-0.10	-0.85	-1.68
MW-62-138	0.13	0.26	-0.37	-1.33
MW-62-181	-0.32	-0.36	-0.92	NA
MW-62-182	-1.29	-1.25	-1.85	-2.66
MW-63-18	0.09	0.32	-0.08	-0.64
MW-63-35	0.13	0.05	-0.13	-0.74
MW-63-50	-0.47	-0.55	-1.24	-2.08
MW-63-91	-0.25	-0.16	-0.89	NA
MW-63-93	-0.30	-0.24	-0.98	-1.68
MW-63-112	-1.69	-1.60	-2.26	-3.14
MW-63-121	-0.24	-0.05	-0.86	-1.49
MW-63-163	-0.86	-0.90	-1.54	-2.46
MW-63-174	-0.62	-0.61	-1.19	-1.97
MW-65-48	38.60	43.22	NA	48.19
MW-65-80	34.97	32.95	32.72	33.71
MW-66-21	0.05	0.17	0.29	-0.33
MW-66-36	0.35	0.15	0.10	-0.86
MW-67-39	0.36	0.41	-0.02	-0.07
MW-67-105	0.57	0.65	0.16	-0.67
MW-67-173	-0.28	-0.26	-0.82	-1.62
MW-67-219	-0.32	-0.32	-0.86	-1.87
MW-67-276	0.44	0.41	-0.14	-1.03
MW-67-323	-1.13	-1.35	-1.93	-2.86
MW-67-340	-0.87	-0.96	-1.56	-2.42
MW-107	118.94	115.00	115.76	120.28
MW-108	10.07	NA	9.02	9.65
MW-109	10.12	7.82	7.88	NA
MW-111	11.24	9.74	10.48	10.87
OUT1	0.81	NA	NA	NA
RW1	30.04	29.52	29.05	29.10
U1CSS	19.11	15.39	NA	20.46
U3-1	NA	NA	NA	NA
U3-2	NA	NA	NA	NA
U3-3	9.25	8.25	8.94	9.13
U3-4D	2.74	3.49	2.69	3.41
U3-4S	3.97	4.31	3.81	4.01
U3-C1	0.99	2.36	0.81	0.64
U3-T1	3.86	4.33	3.69	3.83
U3-T2	3.94	4.28	3.76	4.05

Notes:
NA: data not available

1. Quarter 2, 2008 groundwater elevations were measured on 4/4/08 at 5:14 pm.
2. Quarter 3, 2008 groundwater elevations were measured on 7/10/08 at 11:35 am.
3. Quarter 4, 2008 groundwater elevations were measured on 11/11/08 at 2:54 am.
4. Quarter 1, 2009 groundwater elevations were measured on 1/9/09 at 2:42.

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS															YEARLY ROLLING AVERAGES[4]					Well ID
							TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
MW-30-69	Q2-2008	018	69.3	6.4	5/6/2008	11:00	153000.00	3010.00	406.00	0.33	0.40	0.67	0.49	1.83	3.21	-0.57	1.71	2.73	NA[5]	NA	NA	118900.00	ND[6]	ND	ND	NA	MW-30-69
MW-30-69	Confirmatory[12]	019	69.3	6.4	6/6/2008	11:01	73600.00	2020.00	506.00	0.20	0.32	0.56	-0.98	2.10	3.27	0.49	2.24	3.85	NA	NA	NA						
MW-30-69	Q3-2008	020	69.3	6.4	8/5/2008	11:22	199000.00	3920.00	495.00	0.21	0.31	0.53	-0.16	1.42	2.38	1.11	1.28	2.33	NA	NA	NA						
MW-30-69	Mid-Quarter[13]	021	69.3	6.4	9/3/2008	11:29	85300.00	2030.00	550.00	-0.31	0.51	0.97	-1.89	2.22	3.36	NA	NA	NA	NA	NA	NA						
MW-30-69	Q4-2008	022	69.3	6.4	11/7/2008	10:27	95500.00	2850.00	306.00	0.41	0.55	0.60	0.78	3.09	3.66	-0.11	2.65	2.85	NA	NA	NA						
MW-30-69	Q1-2009	023	69.3	6.4	1/30/2009	11:00	107000.00	2505.00	198.00	-0.09	0.76	0.97	-1.13	2.61	2.66	1.06	2.70	3.24	NA	NA	NA						
MW-30-84	Q2-2008	009	83.8	-8.1	5/6/2008	13:40	4180.00	283.00	220.00	0.33	0.39	0.65	0.44	2.37	4.00	-1.91	2.53	3.69	NA	NA	NA	4343.33	ND	8.97	ND	NA	MW-30-84
MW-30-84	Confirmatory	010	83.8	-8.1	6/6/2008	12:10	3850.00	533.00	504.00	0.15	0.25	0.43	-0.90	2.16	3.57	2.05	2.31	4.29	NA	NA	NA						
MW-30-84	Q3-2008	020	83.8	-8.1	8/5/2008	14:40	4310.00	228.00	194.00	0.28	0.29	0.47	-0.19	1.44	2.35	-0.10	2.12	2.66	NA	NA	NA						
MW-30-84	Mid-Quarter	021	83.8	-8.1	9/3/2008	11:59	3780.00	513.00	535.00	-0.05	0.46	0.91	-0.30	1.73	289.00	NA	NA	NA	NA	NA	NA						
MW-30-84	Q4-2008	013	83.8	-8.1	11/7/2008	10:50	5250.00	323.00	164.00	0.01	0.58	0.76	0.66	4.63	5.37	2.13	5.34	6.53	NA	NA	NA						
MW-30-84	Q1-2009	014	83.8	-8.1	1/30/2009	11:21	4690.00	547.50	199.00	0.09	0.60	0.72	8.97	4.34	3.02	-0.08	3.39	3.81	NA	NA	NA						
MW-31-49	Q2-2008	009	48.8	26.8	6/6/2008	15:05	30400.00	1340.00	469.00	0.28	0.34	0.57	1.11	1.93	3.47	1.72	2.01	3.82	NA	NA	NA	9519.00	ND	ND	ND	NA	MW-31-49
MW-31-49	Q3-2008	010	48.8	26.8	8/7/2008	12:43	594.00	133.00	192.00	0.24	0.27	0.44	0.71	1.30	2.23	0.71	1.49	2.56	NA	NA	NA						
MW-31-49	Mid-Quarter	011	48.8	26.8	8/30/2008	11:55	13600.00	861.00	553.00	0.42	0.48	0.81	1.27	3.63	3.09	NA	NA	NA	NA	NA	NA						
MW-31-49	Q4-2008	012	48.8	26.8	10/30/2008	11:30	643.00	225.00	171.00	0.08	0.17	0.19	1.39	6.27	7.25	-0.91	6.40	6.88	NA	NA	NA						
MW-31-49	Confirmatory	013	48.8	26.8	11/18/2008	11:15	777.00	179.00	162.00	0.41	0.63	0.70	1.21	4.18	5.03	0.98	4.93	5.84	NA	NA	NA						
MW-31-49	Q1-2009	014	48.8	26.8	2/6/2009	11:05	11100.00	786.00	199.00	0.12	0.30	0.36	-0.17	2.97	3.35	-0.46	2.85	3.14	NA	NA	NA						
MW-31-63	Q2-2008	009	63.3	12.3	6/6/2008	16:16	10200.00	792.00	504.00	0.14	0.34	0.62	-1.15	2.11	3.36	2.47	2.31	4.45	NA	NA	NA	18533.33	ND	ND	ND	NA	MW-31-63
MW-31-63	Q3-2008	010	63.3	12.3	8/7/2008	11:22	17600.00	417.00	194.00	-0.21	0.26	0.59	-0.19	1.28	2.16	0.37	1.43	2.49	NA	NA	NA						
MW-31-63	Mid-Quarter	011	63.3	12.3	8/30/2008	12:34	22100.00	1070.00	549.00	-0.63	0.44	0.98	0.38	2.35	4.04	NA	NA	NA	NA	NA	NA						
MW-31-63	Q4-2008	012	63.3	12.3	10/30/2008	12:14	23000.00	1080.00	173.00	0.23	0.23	0.25	2.21	6.18	7.37	-1.47	7.26	7.77	NA	NA	NA						
MW-31-63	Confirmatory	013	63.3	12.3	11/18/2008	11:58	25500.00	807.00	184.00	0.40	0.74	0.84	0.01	5.89	6.01	-0.52	6.54	6.97	NA	NA	NA						
MW-31-63	Q1-2009	014	63.3	12.3	2/6/2009	11:53	12800.00	838.50	197.00	0.64	0.64	0.68	-1.32	3.42	3.63	-0.75	3.86	4.17	NA	NA	NA						
MW-31-85	Q2-2008	009	84.8	-9.2	6/6/2008	15:26	5950.00	630.00	505.00	0.15	0.32	0.57	-0.81	2.20	3.45	1.91	2.45	4.58	NA	NA	NA	5376.67	ND	ND	ND	NA	MW-31-85
MW-31-85	Q3-2008	010	84.8	-9.2	8/7/2008	11:13	2300.00	183.00	194.00	0.11	0.29	0.53	-0.65	1.22	1.94	0.02	1.31	2.18	NA	NA	NA						
MW-31-85	Mid-Quarter	011	84.8	-9.2	8/30/2008	12:08	8340.00	700.00	552.00	0.45	0.49	0.81	-0.55	1.86	3.07	NA	NA	NA	NA	NA	NA						
MW-31-85	Q4-2008	012	84.8	-9.2	10/30/2008	12:09	3890.00	452.00	167.00	0.41	0.73	0.83	-5.63	6.17	4.73	-4.82	6.98	6.56	NA	NA	NA						
MW-31-85	Confirmatory	013	84.8	-9.2	11/18/2008	12:00	4410.00	297.00	161.00	-0.24	0.54	0.81	2.13	3.79	4.76	2.84	3.82	5.19	NA	NA	NA						
MW-31-85	Q1-2009	014	84.8	-9.2	2/6/2009	11:22	7370.00	654.00	202.00	0.39	0.56	0.62	1.22	3.50	4.06	1.09	3.57	4.23	NA	NA	NA						
MW-32-59	Q2-2008	003	58.8	18.3	5/5/2008	15:33	4150.00	201.00	182.00	0.08	0.52	0.97	-0.71	1.89	3.05	1.25	2.01	3.77	NA	NA	NA	4865.50	ND	ND	ND	NA	MW-32-59
MW-32-59	Mid-Quarter	004	58.8	18.3	6/9/2008	12:10	2850.00	481.00	506.00	-0.34	0.36	0.76	-1.22	1.94	2.98	-0.71	2.43	3.91	NA	NA	NA						
MW-32-59	Q3-2008	005	58.8	18.3	7/31/2008	13:23	1540.00	163.00	194.00	0.17	0.38	0.69	0.47	1.97	3.33	-1.08	2.48	3.26	NA	NA	NA						
MW-32-59	Mid-Quarter	006	58.8	18.3	9/2/2008	13:52	2440.00	459.00	553.00	0.22	0.55	0.99	0.78	1.85	3.21	NA	NA	NA	NA	NA	NA						
MW-32-59	Q4-2008	007	58.8	18.3	10/24/2008	13:59	413.00	200.00	173.00	0.16	0.61	0.74	-0.35	7.51	7.30	-1.32	6.29	6.66	NA	NA	NA						
MW-32-59	Q1-2009	008	58.8	18.3	2/4/2009	15:46	17800.00	1030.50	198.00	-0.10	0.57	0.77	0.10	3.54	3.41	2.70	3.41	4.34	NA	NA	NA						
MW-32-85	Q2-2008	006	85.3	85.3	5/5/2008	14:10	8360.00	264.00	181.00	-0.07	0.39	0.76	1.95	2.16	3.96	-0.36	2.06	3.27	NA	NA	NA	8358.33	ND	ND	ND	NA	MW-32-85
MW-32-85	Mid-Quarter	007	85.3	85.3	6/9/2008	12:25	11100.00	821.00	504.00	-0.10	0.36	0.71	1.39	2.01	3.68	-0.55	2.04	3.34	NA	NA	NA						
MW-32-85	Q3-2008	008	85.3	85.3	7/31/2008	14:35	7480.00	283.00	193.00	0.12	0.34	0.62	0.21	2.06	3.50	1.07	1.88	3.43	NA	NA	NA						
MW-32-85	Mid-Quarter	009	85.3	85.3	9/2/2008	14:40	8050.00	690.00	552.00	0.14	0.42	0.77	-1.37	2.45	3.52	NA	NA	NA	NA	NA	NA						
MW-32-85	Q4-2008	010	85.3	85.3	10/24/2008	14:50	8620.00	666.00	172.00	0.11	0.46	0.57	1.39	5.78	6.62	3.08	5.89	7.32	NA	NA	NA						
MW-32-85	Q1-2009	011	85.3	85.3	2/4/2009	15:49	6540.00	637.50	198.00	0.53	0.78	0.85	0.49	2.85	3.31	2.27	3.20	4.15	NA	NA	NA						
MW-32-131	Q2-2008	006	130.8	-53.7	5/5/2008	12:35	1030.00	136.00	183.00	-0.29	0.40	0.78	-1.21	2.28	3.55	-0.33	2.27	3.66	NA	NA	NA	1030.00	ND	ND	ND	NA	MW-32-131
MW-32-149	Q2-2008	006	149.3	-72.2	5/5/2008	10:54	883.00	131.00	182.00	0.74	0.51	0.79	-2.99	2.67	3.71	2.04	2.12	4.12	NA	NA	NA	545.75	ND	ND	ND	NA	MW-32-149
MW-32-149	Q3-2008	007	149.3	-72.2	7/31/2008	11:10	532.00	131.00	194.00	0.01	0.35	0.68	1.06	1.65	2.87	1.42	1.56	2.81	NA	NA	NA						
MW-32-149	Q4-2008	008	149.3	-72.2	10/24/2008	10:28	503.00	210.00	172.00	0.47	0.65	0.70	1.80	5.22	6.07	1.25	4.96	5.82	NA	NA	NA						
MW-32-149	Q1-2009	009	149.3	-72.2	2/4/2009	13:50	265.00	117.90	117.00	0.45	0.68	0.73	0.54	2.99	3.38	0.33	2.91	3.28	NA	NA	NA						
MW-32-173	Q2-2008	003	172.8	-95.7	5/5/2008	10:33	1690.00	152.00	182.00	0.01	0.35	0.71	0.20	2.18	3.64	0.55	2.24	3.91	NA	NA	NA	1105.60	ND	ND	ND	NA	MW-32-173
MW-32-173	Q3-2008	004	172.8	-95.7	7/31/2008	10:52	1080.00	148.00	192.00	0.68	0.45	0.71	-1.17	1.58	2.47	0.61	1.65	2.96	NA	NA	NA						
MW-32-173	Mid-Quarter	005	172.8	-95.7	9/2/2008	11:30	972.00	372.00	548.00	0.19	0.46	0.84	-1.02	2.67	3.88	NA	NA	NA	NA	NA	NA						
MW-32-173	Q4-2008	006	172.8	-95.7	10/24/2008	10:25	1030.00	267.00	174.00	0.11	0.36	0.44	0.86	5.67	6.61	2.30	6.36	7.74	NA	NA	NA						
MW-32-173	Q1-2009	007	172.8	-95.7	2/4/2009	13:40	756.00	145.20	117.00	0.26	0.43	0.47	1.79	3.65	4.41	2.56	3.47	4.49	NA	NA	NA						
MW-32-190	Q2-2008	006	190.3	-113.7	5/5/2008	10:57	6730.00	241.00	182.00	-0.17	0.43	0.82	-1.18	2.08	3.24	-2.62	3.16	2.97	NA	NA	NA	4258.00	ND	ND	ND	NA	MW-32-190
MW-32-190	Q3-2008	007	190.3	-113.7	7/31/2008	11:24	4710.00	235.00	194.00	0.32	0.34	0.55	-0.85	1.55	2.53	2.22	1.77	3.30	NA	NA	NA						
MW-32-190	Mid-Quarter	008	190.3	-113.7	9/2/2008	11:40	3810.00	520.00	544.00	0.59	0.58	0.95	1.39	2.82	4.63	NA	NA	NA	NA	NA	NA						
MW-32-190	Q4-2008	009	190.3	-113.7	10/24/2008	10:31	3350.00	431.00	173.00	0.00	0.58	0.74	0.59	5.33	5.98	3.85	5.68	7.16	NA	NA	NA						
MW-32-190	Q1-2009	010	190.3	-113.7	2/4/2009	13:45	2690.00	426.00	198.00	0.24	0.56	0.65	0.04	2.67	2.95	0.47	3.02	3.44	NA	NA	NA						
MW-33	Q2-2008	022	19.2	-0.4	4/28/2008	15:00	58500.00	1160.00	258.00	0.17	0.30	0.52	0.11	1.87	3.12	-0.05	2.12	3.49	NA	NA	NA	63250.00	ND	ND	ND	NA	MW-33
MW-33	Mid-Quarter	023	19.2	-0.4	9/4/2008	14:41	68000.00	1820.00	547.00	0.13	0.41	0.76	0.55	1.61	2.83	NA	NA	NA	NA	NA	NA						
MW-35	Q2-2008	018	19	-0.4	4/28/2008	13:38	1040.00	177.00	219.00	0.23	0.30	0.50	-0.03	2.03	3.34	-0.06	2.36	3.87	NA	NA	NA	1040.00	ND	ND	ND	NA	MW-35
MW-36-24[7]	Q3-2008	011	16.1	-4.3	7/24/2008	13:57	1020.00	122.00	163.00	0.34	0.38	0.62	0.40	2.09	3.61	-0.55	2.37	3.85	NA	NA	NA	486.00	ND	ND	ND	NA	MW-36-24

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MakeTable3

See Page 7 for Notes

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS															YEARLY ROLLING AVERAGES[4]					Well ID
							TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
MW-36-24	Q4-2008	012	16.1	-4.3	11/10/2008	15:33	201.00	150.00	161.00	0.55	0.75	0.80	0.00	6.81	4.46	2.72	3.84	5.41	NA	NA	NA						
MW-36-24	Q1-2009	013	16.1	-4.3	1/22/2009	12:48	237.00	115.80	106.00	-0.63	0.74	0.95	0.54	2.88	3.34	0.32	3.35	3.82	NA	NA	NA						
MW-36-52	Q3-2008	010	49.7	-37.9	7/24/2008	16:00	12600.00	766.00	374.00	5.67	0.74	0.47	-0.48	2.24	3.69	0.03	2.11	3.53	NA	NA	NA	10130.00	5.77	ND	ND	NA	MW-36-52
MW-36-52	Q4-2008	011	49.7	-37.9	11/10/2008	16:53	11000.00	440.00	163.00	8.27	1.24	0.39	-0.39	3.86	4.21	1.36	4.67	5.65	NA	NA	NA						
MW-36-52	Q1-2009	012	49.7	-37.9	1/22/2009	12:59	6790.00	603.00	206.00	3.37	0.90	0.61	-0.61	2.96	3.24	1.65	3.24	4.05	NA	NA	NA						
MW-37-22	Q3-2008	011	17	-2	7/24/2008	11:20	4330.00	228.00	195.00	12.20	1.25	0.71	0.43	2.13	3.66	2.97	2.57	4.83	NA	NA	NA	4093.33	13.00	ND	ND	NA	MW-37-22
MW-37-22	Q4-2008	012	0	0	11/10/2008	12:20	2680.00	392.00	174.00	18.00	1.88	0.41	2.81	4.96	5.96	-0.29	4.53	4.88	NA	NA	NA						
MW-37-22	Q1-2009	013	0	0	1/21/2009	14:27	5270.00	535.50	205.00	8.81	1.33	0.68	-0.31	3.02	3.27	-2.03	3.09	2.82	NA	NA	NA						
MW-37-32	Q3-2008	011	29	-14	7/24/2008	12:28	5160.00	245.00	195.00	20.60	1.51	0.86	-0.41	1.58	2.18	-0.15	2.04	2.58	NA	NA	NA	3936.67	16.77	ND	ND	NA	MW-37-32
MW-37-32	Q4-2008	012	0	0	11/10/2008	12:20	2890.00	401.00	171.00	18.60	1.95	0.40	1.71	5.33	6.24	0.41	5.37	6.14	NA	NA	NA						
MW-37-32	Q1-2009	013	0	0	1/21/2009	14:30	3760.00	460.50	204.00	11.10	1.49	0.63	1.59	2.84	3.40	-0.71	3.32	3.49	NA	NA	NA						
MW-37-40	Q3-2008	011	39.2	-24.2	7/24/2008	13:12	5240.00	243.00	191.00	1.31	0.44	0.51	-1.10	1.52	2.48	-1.35	2.11	2.70	NA	NA	NA	5213.33	1.97	ND	ND	NA	MW-37-40
MW-37-40	Q4-2008	012	39.2	-24.2	11/10/2008	16:17	5490.00	545.00	176.00	1.13	0.53	0.38	0.36	6.03	6.83	5.04	7.42	9.22	NA	NA	NA						
MW-37-40	Q1-2009	013	39.2	-24.2	1/22/2009	13:05	4910.00	513.00	200.00	3.47	0.89	0.57	-2.64	3.78	3.27	2.67	3.14	4.08	NA	NA	NA						
MW-37-57	Q3-2008	011	53.2	-38.2	7/24/2008	13:20	5330.00	247.00	194.00	21.20	1.46	0.53	-0.71	1.88	3.07	-1.17	2.10	3.24	NA	NA	NA	4880.00	21.70	ND	ND	NA	MW-37-57
MW-37-57	Q4-2008	012	53.2	-38.2	11/10/2008	11:04	4270.00	477.00	171.00	24.00	2.29	0.64	-0.16	6.08	6.80	0.98	7.18	8.14	NA	NA	NA						
MW-37-57	Q1-2009	013	53.2	-38.2	1/21/2009	14:22	5040.00	520.50	202.00	19.90	1.97	0.67	0.04	3.44	3.80	1.05	3.71	4.35	NA	NA	NA						
MW-39-67	Q2-2008	004	67	13	5/1/2008	13:48	318.00	124.00	196.00	2.21	0.62	0.68	-0.30	1.58	2.53	0.36	1.80	3.11	NA	NA	NA	366.50	2.76	ND	ND	NA	MW-39-67
MW-39-67	Q4-2008	005	67	13	10/23/2008	12:53	415.00	201.00	199.00	3.31	1.12	0.77	-1.28	5.46	5.95	-0.12	5.38	6.06	NA	NA	NA						
MW-39-84	Q2-2008	004	83.5	-3.5	5/1/2008	14:10	150.00	118.00	196.00	2.23	0.71	0.89	-0.21	2.24	3.67	-0.21	2.24	3.67	NA	NA	NA	234.00	1.64	ND	ND	NA	MW-39-84
MW-39-84	Q4-2008	005	83.5	-3.5	10/23/2008	12:56	234.00	188.00	199.00	1.04	0.69	0.59	1.74	5.88	6.93	1.12	6.98	8.05	NA	NA	NA						
MW-39-102	Q2-2008	004	101.5	-21.5	4/30/2008	14:56	503.00	169.00	244.00	0.88	0.54	0.80	-1.02	2.63	4.00	0.49	1.90	3.34	-10.70	14.00	24.80	503.00	1.06	ND	ND	ND	MW-39-102
MW-39-102	Q4-2008	005	101.5	-21.5	10/22/2008	13:56	168.00	183.00	200.00	1.23	0.72	0.59	0.66	6.18	6.75	-1.90	5.47	5.53	NA	NA	NA						
MW-39-124	Q2-2008	004	124	-44	4/30/2008	15:24	215.00	95.00	153.00	1.79	0.66	0.89	-1.23	2.13	3.40	0.59	2.19	3.89	-11.30	14.20	25.20	223.00	1.37	ND	ND	ND	MW-39-124
MW-39-124	Q4-2008	005	124	-44	10/22/2008	14:00	231.00	188.00	200.00	0.94	0.65	0.56	1.03	6.64	7.61	1.63	6.98	8.11	NA	NA	NA						
MW-39-183	Q2-2008	004	182.5	-102.5	4/30/2008	15:03	112.00	106.00	177.00	1.12	0.57	0.78	0.15	2.45	4.14	0.80	2.60	4.48	1.83	14.60	25.00	ND	1.12	ND	ND	ND	MW-39-183
MW-39-183	Q4-2008	005	182.5	-102.5	10/22/2008	14:07	53.90	173.00	197.00	0.35	0.73	0.84	-4.16	6.88	7.09	-3.08	7.77	7.39	NA	NA	NA						
MW-39-195	Q2-2008	004	195	-115	4/30/2008	16:10	274.00	150.00	236.00	1.21	0.55	0.83	-1.17	2.28	3.71	0.02	2.48	4.21	-2.59	14.50	25.10	274.00	1.05	ND	ND	ND	MW-39-195
MW-39-195	Q4-2008	005	195	-115	10/22/2008	14:26	172.00	183.00	200.00	0.88	0.72	0.69	4.14	5.57	6.90	1.81	6.76	7.96	NA	NA	NA						
MW-40-27	Q3-2008	004	26.7	46.5	8/11/2008	13:19	222.00	106.00	172.00	0.37	0.42	0.71	0.61	2.28	4.00	-0.37	2.56	3.83	-7.57	11.50	20.50	222.00	ND	ND	ND	ND	MW-40-27
MW-40-27	Q4-2008	005	26.7	46.5	10/28/2008	14:58	142.00	180.00	195.00	0.48	0.58	0.61	-1.55	5.73	6.22	-1.46	6.86	7.41	6.28	16.40	18.50						
MW-40-27	Q1-2009	006	26.7	46.5	1/19/2009	14:29	120.00	134.25	148.00	0.48	0.64	0.68	0.63	3.41	3.86	1.46	2.90	3.58	-1.86	18.00	20.90						
MW-40-46	Q3-2008	005	46.2	27	8/11/2008	13:35	168.00	104.00	171.00	-0.33	0.38	0.81	0.13	1.99	3.31	1.09	2.05	3.64	4.04	11.70	20.10	ND	ND	ND	ND	ND	MW-40-46
MW-40-46	Q4-2008	006	46.2	27	10/28/2008	15:30	88.00	174.00	198.00	0.65	0.70	0.72	0.28	6.58	7.49	1.83	6.30	7.48	0.93	17.10	19.60						
MW-40-46	Q1-2009	007	46.2	27	1/19/2009	14:28	77.60	132.60	148.00	0.27	0.50	0.57	0.81	2.88	3.39	-1.19	2.78	2.88	-5.63	18.90	22.20						
MW-40-81	Q3-2008	005	80.7	-7.5	8/11/2008	9:43	242.00	106.00	171.00	0.17	0.37	0.65	-0.08	1.69	2.78	0.26	1.92	3.25	-2.96	11.00	19.20	201.50	ND	ND	ND	ND	MW-40-81
MW-40-81	Q4-2008	006	80.7	-7.5	10/28/2008	11:20	30.40	161.00	193.00	-0.18	0.42	0.63	2.04	5.28	6.24	-0.87	6.75	7.32	-2.38	23.30	26.90						
MW-40-81	Q1-2009	007	80.7	-7.5	1/19/2009	10:38	161.00	136.50	148.00	0.29	0.58	0.65	-0.47	3.62	4.01	-1.41	3.77	3.92	-7.55	17.70	20.90						
MW-40-100	Q2-2008	006	100.2	-27	5/30/2008	12:45	116.00	98.40	160.00	0.12	0.56	0.98	-0.74	2.12	3.48	-0.87	2.00	3.15	NA	NA	NA	193.00	ND	ND	ND	ND	MW-40-100
MW-40-100	Q3-2008	007	100.2	-27	8/11/2008	10:10	193.00	105.00	171.00	-0.03	0.29	0.58	-0.12	1.59	2.68	0.64	1.52	2.70	0.00	10.90	18.90						
MW-40-100	Q4-2008	008	100.2	-27	10/28/2008	11:30	86.60	173.00	195.00	0.11	0.64	0.78	-1.25	6.50	7.11	3.92	7.02	8.63	-0.77	17.90	20.60						
MW-40-100	Q1-2009	009	100.2	-27	1/19/2009	11:52	42.40	130.35	148.00	0.11	0.60	0.73	0.61	5.97	3.85	0.13	3.15	3.61	-9.80	18.90	22.40						
MW-40-127	Q2-2008	006	127.2	-54	5/30/2008	13:00	32.70	91.60	163.00	-0.48	0.53	0.97	0.69	2.23	3.43	1.36	2.00	3.62	NA	NA	NA	ND	ND	ND	ND	ND	MW-40-127
MW-40-127	Q3-2008	007	127.2	-54	8/11/2008	10:34	168.00	104.00	170.00	0.17	0.24	0.42	0.12	1.65	2.81	0.01	1.49	2.51	-8.77	11.30	20.10						
MW-40-127	Q4-2008	008	127.2	-54	10/28/2008	12:10	75.30	170.00	195.00	0.44	0.71	0.79	-2.53	6.46	6.88	-4.33	8.23	7.68	0.00	16.60	19.30						
MW-40-127	Q1-2009	009	127.2	-54	1/19/2009	11:25	92.20	133.05	148.00	-0.08	0.72	0.90	-1.20	3.75	3.94	1.68	3.66	4.45	-3.34	18.45	21.60						
MW-40-162	Q3-2008	005	161.7	-88.5	8/11/2008	11:44	230.00	108.00	175.00	0.08	0.42	0.78	0.63	2.43	4.16	3.15	2.07	4.11	-5.27	12.20	21.60	230.00	ND	ND	ND	ND	MW-40-162
MW-40-162	Q4-2008	006	161.7	-88.5	10/28/2008	13:15	112.00	177.00	196.00	0.28	0.64	0.74	-2.00	5.84	6.26	2.11	6.08	7.29	3.75	17.90	20.40						
MW-40-162	Q1-2009	007	161.7	-88.5	1/19/2009	11:47	107.00	133.35	148.00	0.13	0.52	0.62	-0.40	3.32	3.67	0.42	2.96	3.41	-9.17	18.45	22.00						
MW-41-40	Q4-2008	011	34.4	20.5	10/22/2008	14:49	2210.00	726.00	592.00	5.91	1.10	0.42	3.07	6.33	7.66	-3.60	8.64	8.40	NA	NA	NA	2210.00	5.91	ND	ND	NA	MW-41-40
MW-41-63	Q4-2008	010	59.5	-4.6	10/22/2008	12:34	691.00	573.00	592.00	5.69	1.13	0.44	2.60	5.59	6.71	0.90	6.08	7.02	NA	NA	NA	691.00	5.69	ND	ND	NA	MW-41-63
MW-42-49	Q2-2008	010	42.6	27.1	5/13/2008	13:20	3240.00	256.00	144.00	23.60	1.54	0.55	14100.00	789.00	14.70	16.90	4.47	4.67	734.00	28.50	21.90	4100.00	205.05	26750.00	16.90	489.33	MW-42-49
MW-42-49	Q3-2008	011	42.6	27.1	8/4/2008	14:24	3160.00	265.00	191.00	35.60	1.72	0.56	10600.00	613.00	12.00	-0.01	2.69	4.52	313.00	26.00	26.10						
MW-42-49	Mid-Quarter	012	42.6	27.1	9/5/2008	12:52	13200.00	836.00	508.00	296.00	4.98	0.40	22100.00	1380.00	15.80	NA	NA	NA	462.00	21.70	20.30						
MW-42-49	Q4-2008	013	42.6	27.1	10/31/2008	13:27	2600.00	377.00	163.00	96.10	4.34	0.42	17800.00	1580.00	18.30	0.59	6.96	7.78	271.00	27.30	19.90						
MW-42-49	Mid-Quarter	014	42.6	27.1	11/17/2008	14:56	1120.00	201.00	173.00	102.00	6.96	1.28	15400.00	1160.00	17.40	3.26	5.21	6.76	244.00	30.00	22.50						
MW-42-49	Q1-2009	015	42.6	27.1	1/26/2009	16:16	1280.00	303.00	206.00	677.00	11.25	0.74	80500.00	8010.00	26.60	0.00	5.24	5.56	912.00	45.00	19.00						
MW-42-78	Q3-2008	009	74	-4.3	8/4/2008	12:07	618.00	150.00	191.00	0.39	0.26	0.38	2.71	2.02	3.75	-0.64	2.10	3.29	-0.76	15.20	26.80	515.00	0.39	ND	ND	ND	MW-42-78
MW-42-78	Q4-2008	010	74	-4.3	10/31/2008	13:34	562.00	212.00	165.00	0.04	0.30	0.39	0.33	5.68	6.34	0.83	6.72	7.68	3.69	17.70	20.20						
MW-42-78	Q1-2009	011	74	-4.3	1/30/2009	11:22	365.00	217.50	200.00	0.44	0.65	0.70	0.67	3.32	3.88	-0.19	3.57	3.99	NA	NA	NA						
MW-43-28	Q4-2008	010	23.5	25.3	10/31/2008	14:17	265.00	158.00	166.00	-0.11	0.40	0.57	4.07	5.19	6.44	-1.16	6.21	6.63	NA	NA	NA	265.00	ND	ND	ND	NA	MW-43-28

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See Page 7 for Notes

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS															YEARLY ROLLING AVERAGES[4]					Well ID
							TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
MW-43-62	Q4-2008	010	51	-2.2	10/31/2008	13:16	225.00	156.00	166.00	0.20	0.41	0.47	0.00	6.45	6.96	2.59	6.30	7.60	NA	NA	NA	225.00	ND	ND	ND	NA	MW-43-62
MW-44-66	Q2-2008	008	62.4	31.1	4/30/2008	15:38	161.00	119.00	196.00	0.04	0.41	0.79	-0.09	2.06	3.38	0.91	2.44	4.27	NA	NA	NA	358.00	ND	ND	ND	NA	MW-44-66
MW-44-66	Q3-2008	009	62.4	31.1	7/25/2008	12:18	550.00	255.00	375.00	0.31	0.37	0.62	-2.33	2.53	3.03	-0.21	1.74	2.85	NA	NA	NA						
MW-44-66	Q4-2008	010	62.4	31.1	10/23/2008	13:17	318.00	161.00	166.00	0.32	0.38	0.39	-3.20	5.21	5.30	-1.59	5.73	6.02	NA	NA	NA						
MW-44-66	Q1-2009	011	62.4	31.1	2/3/2009	9:40	206.00	192.00	197.00	0.45	0.80	0.90	1.96	3.53	4.18	3.09	3.06	4.12	NA	NA	NA						
MW-44-102	Q2-2008	009	80	13.5	4/30/2008	15:28	256.00	122.00	196.00	0.08	0.37	0.71	1.03	2.03	3.63	-2.07	3.04	4.52	NA	NA	NA	356.25	ND	ND	ND	NA	MW-44-102
MW-44-102	Q3-2008	010	80	13.5	7/25/2008	12:18	437.00	246.00	375.00	-0.03	0.18	0.32	-0.41	1.78	2.88	1.35	1.87	3.41	NA	NA	NA						
MW-44-102	Q4-2008	011	80	13.5	10/23/2008	13:48	475.00	168.00	165.00	0.20	0.47	0.54	1.72	6.24	7.28	2.39	8.12	8.47	NA	NA	NA						
MW-44-102	Q1-2009	012	80	13.5	2/2/2009	12:06	257.00	193.50	193.00	0.47	0.61	0.67	0.98	3.39	4.02	-0.97	3.53	3.74	NA	NA	NA						
MW-45-42	Q2-2008	012	37	16.6	5/1/2008	15:15	1130.00	151.00	196.00	-0.04	0.31	0.63	0.67	1.99	3.47	-1.17	3.62	4.55	NA	NA	NA	2000.00	ND	ND	ND	NA	MW-45-42
MW-45-42	Q3-2008	013	37	16.6	7/25/2008	16:40	2320.00	377.00	374.00	0.30	0.28	0.44	-1.77	1.76	2.53	1.09	1.76	3.19	NA	NA	NA						
MW-45-42	Q4-2008	014	37	16.6	10/22/2008	14:55	3140.00	803.00	591.00	0.46	0.52	0.53	-1.64	5.07	5.26	-3.00	4.93	4.36	NA	NA	NA						
MW-45-42	Q1-2009	015	37	16.6	2/2/2009	18:02	1410.00	327.00	197.00	-0.18	0.44	0.66	-1.41	2.57	2.67	-1.27	2.55	2.57	NA	NA	NA						
MW-45-61	Q2-2008	012	58	-4.4	5/1/2008	10:16	2210.00	180.00	195.00	0.69	0.50	0.77	0.32	2.07	3.59	-1.29	2.25	3.53	NA	NA	NA	1660.00	ND	ND	ND	NA	MW-45-61
MW-45-61	Q3-2008	013	58	-4.4	7/25/2008	13:51	1800.00	346.00	376.00	0.24	0.25	0.41	-1.88	1.91	2.80	0.78	1.91	3.40	NA	NA	NA						
MW-45-61	Q4-2008	014	58	-4.4	10/22/2008	9:33	1270.00	635.00	590.00	0.20	0.58	0.69	-1.52	5.07	5.32	1.04	5.73	6.58	NA	NA	NA						
MW-45-61	Q1-2009	015	58	-4.4	2/2/2009	13:13	1360.00	324.00	199.00	-0.15	0.76	0.95	0.99	3.59	4.20	0.23	3.23	3.66	NA	NA	NA						
MW-46	Q2-2008	012	10.5	7.6	4/29/2008	16:00	521.00	153.00	220.00	0.41	0.35	0.56	0.79	2.12	3.75	0.46	2.24	3.90	NA	NA	NA	918.00	0.93	ND	ND	NA	MW-46
MW-46	Q3-2008	013	10.5	7.6	7/24/2008	16:56	771.00	275.00	377.00	0.27	0.31	0.51	0.61	1.96	3.38	-1.89	2.10	3.09	NA	NA	NA						
MW-46	Q4-2008	014	10.5	7.6	10/20/2008	15:27	1380.00	644.00	589.00	0.93	0.59	0.51	-2.27	5.88	5.91	-0.59	5.63	6.09	NA	NA	NA						
MW-46	Q1-2009	015	10.5	7.6	2/5/2009	13:46	1000.00	288.00	196.00	-0.13	0.62	0.78	-1.68	2.78	2.71	0.70	2.82	3.28	NA	NA	NA						
MW-49-26	Q2-2008	012	19.1	-4.4	4/25/2008	12:45	5000.00	313.00	144.00	18.10	1.32	0.57	2.68	2.36	4.34	2.08	2.22	4.14	1.76	11.90	20.50	3882.50	15.85	ND	ND	ND	MW-49-26
MW-49-26	Q3-2008	013	19.1	-4.4	7/30/2008	15:03	3960.00	173.00	130.00	16.20	1.27	0.84	-0.98	1.74	2.74	1.31	2.17	3.93	-2.81	16.40	29.20						
MW-49-26	Q4-2008	014	19.1	-4.4	11/5/2008	15:54	3470.00	455.00	191.00	15.30	2.06	0.61	-1.36	5.03	5.26	-0.32	4.65	5.18	2.96	17.70	20.20						
MW-49-26	Q1-2009	015	19.1	-4.4	2/6/2009	13:03	3100.00	265.50	169.00	13.80	1.91	0.86	1.77	4.34	4.54	1.26	3.56	4.24	23.10	22.05	24.20						
MW-49-42	Q2-2008	012	38.1	-23.4	4/25/2008	12:38	3200.00	254.00	144.00	23.30	1.49	0.52	0.41	1.82	3.18	0.59	2.37	4.13	-1.03	11.70	20.40	2627.50	21.80	ND	ND	ND	MW-49-42
MW-49-42	Q3-2008	013	38.1	-23.4	7/30/2008	15:06	2520.00	145.00	130.00	21.60	1.41	0.61	0.45	1.59	2.79	0.80	1.70	3.09	-2.73	15.90	28.40						
MW-49-42	Q4-2008	014	38.1	-23.4	11/5/2008	14:31	2540.00	404.00	197.00	21.60	2.50	0.70	-1.27	6.33	6.92	-1.93	8.10	7.46	4.70	18.40	20.90						
MW-49-42	Q1-2009	015	38.1	-23.4	2/6/2009	9:57	2250.00	240.00	170.00	20.70	2.37	0.97	1.38	3.51	4.09	-2.43	3.38	3.11	-2.15	21.45	24.80						
MW-49-65	Q2-2008	012	60	-45.4	4/25/2008	13:13	1930.00	186.00	196.00	19.00	0.66	0.36	-0.08	1.93	3.28	-0.14	2.29	3.84	6.81	9.59	16.20	1542.50	17.83	ND	ND	ND	MW-49-65
MW-49-65	Q3-2008	013	60	-45.4	7/30/2008	13:58	1560.00	123.00	130.00	17.80	1.29	0.55	-0.48	2.20	3.63	0.08	2.02	3.39	-6.53	16.70	29.60						
MW-49-65	Q4-2008	014	60	-45.4	11/5/2008	14:43	1260.00	302.00	192.00	17.20	2.23	0.60	-4.96	6.60	6.62	2.51	6.11	7.41	0.84	18.00	20.60						
MW-49-65	Q1-2009	015	60	-45.4	2/6/2009	9:59	1420.00	210.00	170.00	17.30	2.10	0.92	-0.92	2.96	3.20	0.76	2.64	3.21	2.70	22.20	25.40						
MW-50-42	Q3-2008	014	42	-27.1	7/31/2008	15:43	373.00	134.00	191.00	9.28	0.87	0.44	-0.94	1.99	3.20	0.95	1.91	3.44	15.80	17.60	29.60	294.00	4.60	ND	ND	ND	MW-50-42
MW-50-42	Q4-2008	015	42	-27.1	11/6/2008	10:44	129.00	176.00	192.00	2.56	0.99	0.69	1.65	4.98	5.77	0.52	5.36	6.17	0.00	17.60	20.30						
MW-50-42	Q1-2009	016	42	-27.1	1/22/2009	15:23	215.00	138.45	148.00	1.96	0.81	0.63	-1.74	2.48	2.37	-0.52	2.31	2.39	-3.34	17.40	20.30						
MW-50-66	Q2-2008	015	60	-45.1	5/12/2008	15:40	2800.00	239.00	144.00	33.80	1.85	0.70	0.71	2.24	3.87	1.23	2.13	3.83	7.86	12.80	21.70	2508.33	34.75	ND	ND	ND	MW-50-66
MW-50-66	Q3-2008	016	60	-45.1	7/31/2008	17:02	2710.00	248.00	191.00	33.00	1.59	0.40	2.31	1.82	3.43	0.66	1.46	2.68	3.58	14.00	24.30						
MW-50-66	Mid-Quarter	017	60	-45.1	9/8/2008	16:21	2080.00	417.00	504.00	32.30	1.66	0.49	-0.88	2.69	3.96	NA	NA	NA	12.20	12.30	20.60						
MW-50-66	Q4-2008	018	60	-45.1	11/6/2008	12:38	2730.00	417.00	198.00	32.00	3.00	0.74	-0.87	5.97	6.56	-2.52	8.96	8.45	-1.63	20.70	23.90						
MW-50-66	Mid-Quarter	019	60	-45.1	11/19/2008	16:29	2430.00	249.00	173.00	49.90	3.75	0.87	2.50	5.26	2.61	0.51	2.70	3.17	-0.51	19.80	22.90						
MW-50-66	Q1-2009	020	60	-45.1	1/22/2009	16:01	2300.00	216.00	148.00	27.50	2.28	0.41	-1.68	4.20	3.99	-0.20	3.32	3.66	-9.33	18.75	22.30						
MW-51-40	Q2-2008	007	39.7	28	5/30/2008	10:27	141.00	101.00	160.00	0.37	0.57	0.97	0.32	2.03	3.41	2.18	2.36	3.50	NA	NA	NA	329.00	ND	ND	ND	ND	MW-51-40
MW-51-40	Q3-2008	008	39.7	28	8/8/2008	14:40	329.00	160.00	203.00	0.37	0.40	0.67	1.59	2.19	3.98	-0.20	1.79	2.99	-8.33	10.20	18.30						
MW-51-40	Q4-2008	009	39.7	28	10/27/2008	13:11	168.00	185.00	195.00	0.02	0.43	0.57	0.45	4.28	4.88	-1.93	6.35	6.59	-5.03	21.10	24.60						
MW-51-40	Q1-2009	010	39.7	28	1/20/2009	14:50	23.70	168.00	192.00	0.19	0.80	0.97	0.99	2.81	3.26	1.05	2.75	3.30	8.95	16.65	18.70						
MW-51-79	Q2-2008	007	78.7	-11	5/30/2008	10:55	67.00	94.10	161.00	0.02	0.49	0.99	-1.14	3.43	4.80	-0.51	2.70	4.31	NA	NA	NA	ND	ND	ND	ND	ND	MW-51-79
MW-51-79	Q3-2008	008	78.7	-11	8/8/2008	12:55	161.00	131.00	201.00	0.20	0.30	0.52	0.96	2.17	3.82	0.56	2.30	3.98	-10.70	10.70	19.30						
MW-51-79	Q4-2008	009	78.7	-11	10/27/2008	13:30	11.40	162.00	199.00	0.00	0.61	0.79	0.84	5.07	5.75	2.41	5.21	6.37	3.72	17.70	20.20						
MW-51-79	Q1-2009	010	78.7	-11	1/20/2009	15:21	101.00	133.05	148.00	-0.17	0.32	0.50	0.59	5.57	3.65	-0.29	3.21	3.56	15.80	17.25	19.00						
MW-51-104	Q3-2008	006	103.7	-36	8/8/2008	10:50	282.00	155.00	208.00	-0.27	0.40	0.79	1.56	2.03	3.60	-0.12	2.07	3.38	-4.19	13.40	23.60	282.00	ND	ND	ND	ND	MW-51-104
MW-51-104	Q4-2008	007	103.7	-36	10/27/2008	10:07	121.00	139.00	149.00	0.12	0.50	0.61	5.61	6.81	8.52	-5.72	8.93	8.26	-1.01	18.40	21.20						
MW-51-104	Q1-2009	008	103.7	-36	1/20/2009	10:46	99.50	133.20	148.00	0.01	0.38	0.50	-1.33	2.87	3.03	-1.01	2.37	2.42	-2.06	19.95	23.30						
MW-51-135	Q3-2008	006	135.2	-67.5	8/8/2008	11:50	209.00	139.00	199.00	0.05	0.24	0.46	-1.03	2.08	3.29	0.01	2.01	3.34	-6.78	11.40	20.20	209.00	ND	ND	ND	ND	MW-51-135
MW-51-135	Q4-2008	007	135.2	-67.5	10/27/2008	10:05	76.80	173.00	199.00	0.00	0.51	0.66	-1.74	5.26	5.63	3.92	6.09	7.69	-0.21	17.40	20.10						
MW-51-135	Q1-2009	008	135.2	-67.5	1/20/2009	11:02	131.00	134.55	148.00	-0.30	0.34	0.58	-0.69	3.89	4.31	0.93	3.06	3.66	-10.80	17.55	21.00						
MW-51-163	Q3-2008	006	162.7	-95	8/8/2008	11:16	69.20	82.70	140.00	-0.12	0.26	0.54	-1.54	2.25	3.56	0.38	1.97	3.39	4.33	12.60	21.50	ND	ND	ND	ND	ND	MW-51-163
MW-51-163	Q4-2008	007	162.7	-95	10/27/2008	10:20	55.80	167.00	195.00	0.26	0.58	0.67	-1.70	6.18	6.74	0.54	5.38	6.25	2.11	18.80	21.40						
MW-51-163	Q1-2009	008	162.7	-95	1/20/2009	11:44	46.00	130.35	148.00	-0.20	0.50	0.70	-0.97	3.14	3.27	-0.08	3.24	3.54	-10.10	18.00	21.40						
MW-51-189	Q3-2008	006	189.2	-121.5	8/8/2008	11:17	110.00	89.70	143.00	-0.14	0.34	0.66	-2.27	2.13	3.12	-1.79	2.70	3.57	-5.89	11.50	20.40	ND	ND	ND	ND	ND	MW-51-189
MW-51-189	Q4-2008	007	189.2	-121.5	10/27/2008	10:11	76.90	174.00	199.00	0.56	0.72	0.75	0.61	6.38	7.30	3.04	6.13	7.60	-6.95	18.40	21.70						

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS															YEARLY ROLLING AVERAGES[4]					Well ID
							TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
MW-51-189	Q1-2009	008	189.2	-121.5	1/20/2009	11:33	33.20	129.90	148.00	-0.21	0.35	0.56	-2.05	3.48	3.62	1.91	3.32	4.20	-8.33	17.85	21.10						
MW-52-11	Q2-2008	003	10	6.8	4/28/2008	13:23	1130.00	153.00	196.00	0.20	0.47	0.85	0.52	1.93	3.36	-2.15	3.52	4.08	NA	NA	NA	1130.00	ND	ND	ND	NA	MW-52-11
MW-52-122	Q2-2008	003	122	-107.1	4/28/2008	15:23	88.70	86.00	144.00	0.12	0.29	0.52	-1.25	2.05	3.24	2.72	2.38	4.52	NA	NA	NA	ND	ND	ND	ND	NA	MW-52-122
MW-52-162	Q2-2008	003	161.5	-146.6	4/28/2008	10:22	145.00	87.30	143.00	1.03	0.36	0.44	-0.91	2.03	3.31	2.33	2.13	4.14	NA	NA	NA	145.00	1.03	ND	ND	NA	MW-52-162
MW-52-181	Q2-2008	003	181	-166.1	4/29/2008	10:24	156.00	87.70	144.00	0.16	0.25	0.43	1.08	2.25	3.96	0.41	2.12	3.63	NA	NA	NA	156.00	ND	ND	ND	NA	MW-52-181
MW-53-82	Q3-2008	008	75	-4.7	8/4/2008	12:25	1210.00	184.00	191.00	0.70	0.30	0.39	2.79	2.26	4.16	0.03	2.14	3.58	11.50	12.40	20.90	2088.00	1.50	ND	ND	ND	MW-53-82
MW-53-82	Q4-2008	009	75	-4.7	10/30/2008	15:52	794.00	237.00	165.00	-0.05	0.30	0.42	3.66	6.21	7.56	-1.78	6.33	6.63	-4.83	16.50	19.20						
MW-53-82	Q1-2009	010	75	-4.7	1/26/2009	12:00	4260.00	306.00	192.00	2.30	1.07	0.98	1.10	3.96	4.51	-0.23	3.59	3.88	8.04	16.35	18.40						
MW-53-120	Q2-2008	008	109.8	-39.5	5/13/2008	10:10	5910.00	338.00	143.00	31.10	1.73	0.67	-1.39	1.98	3.10	1.33	2.15	3.99	22.20	12.80	20.80	5523.33	31.10	ND	ND	22.70	MW-53-120
MW-53-120	Q3-2008	009	109.8	-39.5	8/4/2008	10:15	5800.00	346.00	191.00	30.30	1.52	0.31	-0.97	1.93	3.02	-0.12	2.33	3.20	26.50	13.00	21.10						
MW-53-120	Mid-Quarter	010	109.8	-39.5	9/5/2008	10:55	5760.00	590.00	507.00	31.00	1.59	0.41	-0.33	2.41	3.94	NA	NA	NA	19.40	11.90	0.39						
MW-53-120	Q4-2008	011	109.8	-39.5	10/30/2008	13:00	5570.00	539.00	166.00	25.30	2.04	0.38	2.73	4.75	5.74	0.00	9.13	9.26	5.82	16.90	19.30						
MW-53-120	Mid-Quarter	012	109.8	-39.5	11/17/2008	10:31	5040.00	323.00	172.00	42.50	3.63	0.67	0.33	4.72	5.28	-0.02	4.09	4.49	21.20	20.30	22.10						
MW-53-120	Q1-2009	013	109.8	-39.5	1/26/2009	12:43	5060.00	325.50	192.00	26.40	2.37	0.75	-0.36	4.53	5.10	2.32	4.34	5.39	12.70	22.20	24.90						
MW-54-37	Q2-2008	005	36.5	-23.4	5/2/2008	13:59	870.00	147.00	143.00	5.08	0.74	0.56	-0.93	2.12	3.29	-0.84	2.56	4.06	3.37	12.40	21.20	1057.50	6.14	ND	ND	ND	MW-54-37
MW-54-37	Q3-2008	006	36.5	-23.4	7/22/2008	17:00	950.00	108.00	131.00	6.20	0.75	0.46	1.34	2.22	3.94	-0.44	2.09	3.34	1.42	16.80	29.50						
MW-54-37	Q4-2008	007	36.5	-23.4	11/11/2008	13:16	1250.00	207.00	173.00	7.33	1.45	0.58	-2.50	6.27	6.87	2.81	5.14	6.50	2.49	19.20	22.10						
MW-54-37	Q1-2009	008	36.5	-23.4	2/3/2009	15:34	1160.00	186.00	164.00	5.93	1.16	0.67	1.70	3.33	3.92	-1.15	3.24	3.14	-3.14	21.60	25.00						
MW-54-58	Q2-2008	005	57.5	-44.4	5/2/2008	14:15	733.00	139.00	143.00	1.69	0.50	0.58	0.87	2.13	3.75	1.63	2.46	4.54	0.98	12.70	22.00	672.75	3.60	ND	ND	ND	MW-54-58
MW-54-58	Q3-2008	006	57.5	-44.4	7/22/2008	17:05	578.00	96.40	131.00	1.71	0.52	0.65	0.38	2.07	3.59	-0.14	2.67	4.23	13.70	16.90	28.50						
MW-54-58	Q4-2008	007	57.5	-44.4	11/11/2008	13:02	698.00	185.00	174.00	9.02	1.65	0.59	-0.74	3.71	3.89	-1.72	3.50	3.31	3.01	19.10	21.80						
MW-54-58	Q1-2009	008	57.5	-44.4	2/3/2009	14:53	682.00	171.00	166.00	1.98	0.85	0.72	0.96	2.78	3.29	0.42	2.94	3.39	-3.05	19.50	22.70						
MW-54-123	Q2-2008	005	123	-109.9	5/2/2008	10:06	698.00	134.00	139.00	6.45	0.85	0.60	-1.28	2.22	3.42	4.12	2.63	5.24	-3.04	11.90	20.80	605.25	7.87	ND	ND	ND	MW-54-123
MW-54-123	Q3-2008	006	123	-109.9	7/22/2008	15:30	612.00	97.70	132.00	6.52	0.82	0.56	-0.28	2.22	3.72	-2.93	2.52	3.55	4.33	15.70	27.30						
MW-54-123	Q4-2008	007	123	-109.9	11/11/2008	11:03	580.00	177.00	171.00	12.60	2.10	0.73	-0.67	5.14	5.51	2.63	4.29	5.62	-4.68	18.30	21.50						
MW-54-123	Q1-2009	008	123	-109.9	2/3/2009	11:55	531.00	163.50	164.00	5.91	1.15	0.57	0.90	3.03	3.59	0.05	3.09	3.52	0.91	19.95	23.00						
MW-54-144	Q2-2008	005	144	-130.9	5/2/2008	10:20	1150.00	164.00	143.00	15.90	1.31	0.71	-0.96	2.26	3.61	-1.06	2.37	3.65	-2.00	12.10	21.10	1137.50	16.85	ND	ND	ND	MW-54-144
MW-54-144	Q3-2008	006	144	-130.9	7/22/2008	15:35	1130.00	113.00	131.00	16.90	1.23	0.50	1.57	1.91	3.48	-0.50	2.43	3.49	11.10	16.90	28.70						
MW-54-144	Q4-2008	007	144	-130.9	11/11/2008	11:06	1140.00	203.00	172.00	20.20	2.27	0.47	-0.62	3.90	4.30	0.57	5.17	5.96	4.08	20.90	23.90						
MW-54-144	Q1-2009	008	144	-130.9	2/3/2009	12:41	1130.00	202.50	177.00	14.40	1.76	0.65	-0.01	3.15	3.46	-0.02	2.91	3.20	2.21	23.70	27.60						
MW-54-173	Q2-2008	005	172.5	-159.4	5/2/2008	10:35	2110.00	210.00	142.00	12.20	1.18	0.91	-0.64	2.22	3.66	1.71	2.10	4.01	4.47	12.30	21.00	1950.00	12.85	ND	ND	ND	MW-54-173
MW-54-173	Q3-2008	006	172.5	-159.4	7/22/2008	15:51	2050.00	135.00	130.00	12.90	1.08	0.53	-0.07	2.07	3.52	-1.62	2.11	3.15	7.86	15.90	27.20						
MW-54-173	Q4-2008	007	172.5	-159.4	11/11/2008	11:07	1660.00	224.00	175.00	16.10	2.12	0.72	0.15	4.23	4.77	-0.58	3.93	4.19	3.04	19.20	22.00						
MW-54-173	Q1-2009	008	172.5	-159.4	2/3/2009	12:19	1980.00	544.50	385.00	10.20	1.45	0.59	-1.52	3.03	3.08	-2.37	3.20	2.94	4.01	23.70	27.60						
MW-54-190	Q2-2008	005	190	-176.9	5/2/2008	10:30	1840.00	198.00	143.00	19.50	1.40	0.79	0.82	1.98	3.46	0.88	1.95	3.51	6.07	12.50	21.30	1490.00	23.40	ND	ND	ND	MW-54-190
MW-54-190	Q3-2008	006	190	-176.9	7/22/2008	15:50	1250.00	115.00	130.00	21.30	1.37	0.56	0.85	1.98	3.41	-1.64	2.06	3.02	-8.42	16.10	29.20						
MW-54-190	Q4-2008	007	190	-176.9	11/11/2008	11:09	1440.00	210.00	169.00	33.80	3.12	0.61	-0.54	5.00	5.54	-0.65	3.54	3.63	0.49	19.10	22.00						
MW-54-190	Q1-2009	008	190	-176.9	2/3/2009	12:35	1430.00	487.50	380.00	19.00	1.85	0.39	-1.18	3.48	3.74	0.74	3.08	3.70	-5.10	23.70	28.40						
MW-55-24	Q2-2008	006	16	2.3	4/25/2008	14:15	1050.00	159.00	144.00	25.50	1.57	0.49	1.08	2.31	4.02	-0.93	2.55	4.02	1.25	11.40	19.70	1068.00	18.85	ND	ND	ND	MW-55-24
MW-55-24	Q3-2008	007	16	2.3	8/1/2008	13:15	1400.00	193.00	191.00	22.20	1.36	0.57	-0.01	2.19	3.69	2.85	2.34	4.16	6.11	12.40	21.10						
MW-55-24	Q4-2008	008	16	2.3	10/21/2008	13:19	782.00	257.00	193.00	10.80	1.80	0.56	1.30	5.13	5.92	-3.49	6.66	6.59	4.77	17.90	20.30						
MW-55-24	Q1-2009	009	16	2.3	2/11/2009	12:55	1040.00	448.50	384.00	16.90	1.74	0.39	1.90	2.88	3.50	1.35	3.14	3.76	-12.10	24.45	29.90						
MW-55-35	Q2-2008	006	32	-13.8	4/25/2008	12:07	1600.00	186.00	142.00	34.40	1.86	0.61	1.46	2.26	4.06	2.34	2.40	4.61	5.22	12.50	21.40	1394.33	25.63	ND	ND	ND	MW-55-35
MW-55-35	Q3-2008	007	32	-13.8	8/1/2008	10:47	1730.00	208.00	191.00	25.40	1.42	0.43	0.35	2.17	3.74	0.26	2.33	3.99	12.60	12.30	20.50						
MW-55-35	Q1-2009	008	32	-13.8	2/4/2009	13:46	853.00	427.50	384.00	17.10	1.82	0.44	1.01	3.14	3.69	0.16	2.78	3.15	0.85	22.95	26.90						
MW-55-54	Q2-2008	006	47	-28.8	4/25/2008	10:35	5960.00	339.00	144.00	26.70	1.62	0.66	1.74	2.35	4.25	1.63	2.59	4.75	7.69	12.50	21.30	6840.00	22.60	ND	ND	ND	MW-55-54
MW-55-54	Q3-2008	007	47	-28.8	8/1/2008	10:38	6310.00	359.00	191.00	23.20	1.30	0.36	0.65	2.07	3.52	1.29	1.79	3.30	18.20	12.60	20.80						
MW-55-54	Q4-2008	008	47	-28.8	10/21/2008	10:21	7760.00	665.00	196.00	19.40	2.37	0.63	-3.17	5.29	5.27	-1.63	5.43	5.54	-9.99	16.90	20.10						
MW-55-54	Q1-2009	009	47	-28.8	2/4/2009	12:42	7330.00	909.00	382.00	21.10	2.01	0.37	-0.33	3.11	3.46	-0.36	3.35	3.69	5.24	23.40	27.00						
MW-56-53	Q4-2008	005	52	18.3	10/24/2008	12:21	399.00	164.00	165.00	0.54	0.55	0.55	-0.08	5.88	6.64	-5.42	7.44	6.23	NA	NA	NA	399.00	ND	ND	ND	NA	MW-56-53
MW-56-83	Q4-2008	007	74	-3.7	10/24/2008	12:22	2980.00	791.00	591.00	2.13	0.73	0.49	-1.15	4.62	4.98	3.29	5.58	8.07	NA	NA	NA	2980.00	2.13	ND	ND	NA	MW-56-83
MW-57-11	Q2-2008	003	10	5	5/5/2008	12:43	2170.00	229.00	265.00	22.70	1.95	0.91	0.87	2.21	3.83	2.87	2.26	4.47	-1.12	13.50	23.40	2725.00	32.15	ND	ND	ND	MW-57-11
MW-57-11	Q4-2008	004	10	5	11/12/2008	10:55	3280.00	276.00	173.00	41.60	3.39	0.76	3.34	7.25	4.76	1.81	3.78	5.03	-0.52	20.30	23.50						
MW-57-20	Q2-2008	003	19	-4	5/5/2008	13:18	727.00	145.00	197.00	1.23	0.22	0.29	-2.17	1.99	2.84	-0.96	3.60	4.56	-6.89	9.27	16.20	1118.50	2.15	ND	ND	ND	MW-57-20
MW-57-20	Q4-2008	004	19	-4	11/12/2008	11:30	1510.00	216.00	172.00	3.06	1.30	1.14	-1.91	3.94	3.82	-0.44	3.52	3.67	-0.56	19.40	22.50						
MW-57-45	Q2-2008	004	40	-25	5/5/2008	14:59	565.00	138.00	197.00	2.26	0.29	0.37	-0.14	1.68	2.84	-0.46	1.66	2.69	-3.60	9.38	16.20	847.50	1.73	ND	ND	ND	MW-57-45
MW-57-45	Q4-2008	005	40	-25	11/12/2008	13:22	1130.00	201.00	173.00	1.20	0.68	0.60	0.17	3.63	4.05	0.92	4.42	5.17	-2.81	19.10	22.20						
MW-58-26	Q4-2008	006	20	-5.4	11/7/2008	13:39	238.00	155.00	163.00	0.23	0.66	0.79	-3.38	6.24	5.49	-0.32	4.58	4.84	NA	NA	NA	378.50	ND	ND	ND	NA	MW-58-26
MW-58-26	Q1-2009	007	20	-5.4	2/3/2009	12:49	519.00	235.50	198.00	-0.01	0.53	0.68	1.40	2.76	3.29	0.15	3.09	3.31	NA	NA	NA						
MW-58-65	Q4-2008	006	54	-39.4	11/7/2008	13:55	281.00	155.00	162.00	0.82	0.88	0.88	0.09	3.38	3.86	-1.58	3.21	2.98	NA	NA	NA	278.00	ND	ND	ND	NA	MW-58-65
MW-58-65	Q1-2009	007	54	-39.4	2/3/2009	12:05	275.00	202.50	198.00	0.66	0.80	0.86	-0.85	3.21	3.41	1.91	3.09	3.89	NA	NA	NA						

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS															YEARLY ROLLING AVERAGES[4]					Well ID
							TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
MW-60-35	Q2-2008	005	34.9	-22.4	4/24/2008	15:30	55.10	114.00	195.00	0.35	0.48	0.83	-0.84	2.06	3.37	-0.87	1.68	2.56	NA	NA	NA	197.50	ND	ND	ND	ND	MW-60-35
MW-60-35	Q3-2008	006	34.9	-22.4	7/30/2008	16:10	195.00	121.00	191.00	0.29	0.35	0.59	1.81	1.93	3.50	-1.19	2.07	3.20	NA	NA	NA						
MW-60-35	Q4-2008	007	34.9	-22.4	11/5/2008	15:03	142.00	180.00	199.00	0.16	0.50	0.61	-2.38	5.87	6.17	-3.83	8.52	7.56	NA	NA	NA						
MW-60-35	Q1-2009	008	34.9	-22.4	2/9/2009	16:12	200.00	183.00	198.00	0.38	0.83	0.94	-1.20	3.09	3.19	-0.32	3.00	3.22	-3.26	23.85	28.20						
MW-60-53	Q2-2008	005	53.4	-40.9	4/24/2008	12:18	-17.70	112.00	196.00	0.53	0.52	0.85	-0.48	2.47	4.13	-1.36	2.50	3.95	NA	NA	NA	ND	ND	ND	ND	ND	MW-60-53
MW-60-53	Q3-2008	006	53.4	-40.9	7/30/2008	13:23	128.00	98.00	163.00	0.65	0.53	0.86	-0.17	2.09	3.43	1.05	2.04	3.65	NA	NA	NA						
MW-60-53	Q4-2008	007	53.4	-40.9	11/5/2008	14:32	138.00	180.00	199.00	-0.20	0.58	0.82	0.88	4.58	5.22	1.30	5.78	6.68	NA	NA	NA						
MW-60-53	Q1-2009	008	53.4	-40.9	2/9/2009	11:28	131.00	178.50	198.00	0.48	0.81	0.91	-1.28	3.80	3.55	0.53	2.78	3.22	-1.24	24.30	28.50						
MW-60-72	Q2-2008	005	72.4	-59.9	4/24/2008	12:20	165.00	117.00	193.00	0.31	0.48	0.84	-0.53	2.37	3.92	0.18	2.23	3.75	NA	NA	NA	194.00	ND	ND	ND	ND	MW-60-72
MW-60-72	Q3-2008	006	72.4	-59.9	7/30/2008	13:25	82.70	96.90	163.00	0.17	0.14	0.23	-0.88	2.39	3.91	-1.11	2.47	3.96	NA	NA	NA						
MW-60-72	Q4-2008	007	72.4	-59.9	11/5/2008	14:58	194.00	164.00	178.00	0.21	0.65	0.78	-0.95	5.68	6.09	-1.43	5.36	5.64	NA	NA	NA						
MW-60-72	Q1-2009	008	72.4	-59.9	2/9/2009	11:25	167.00	154.50	169.00	-0.42	0.72	0.96	-0.65	3.00	3.30	0.78	3.09	3.69	-9.25	22.35	26.60						
MW-60-135	Q2-2008	005	134.9	-122.4	4/24/2008	12:31	585.00	133.00	193.00	-0.02	0.32	0.66	1.16	2.24	3.93	-1.70	2.67	3.93	NA	NA	NA	471.00	ND	ND	ND	ND	MW-60-135
MW-60-135	Q3-2008	006	134.9	-122.4	7/30/2008	13:33	491.00	142.00	191.00	0.17	0.34	0.62	-0.47	1.79	2.88	1.43	2.00	3.61	NA	NA	NA						
MW-60-135	Q4-2008	007	134.9	-122.4	11/6/2008	10:49	425.00	201.00	199.00	-0.17	0.50	0.72	-0.02	5.71	6.40	-3.93	6.25	5.99	NA	NA	NA						
MW-60-135	Q1-2009	008	134.9	-122.4	2/9/2009	12:04	383.00	166.50	169.00	0.55	0.60	0.64	1.42	2.96	3.48	0.42	3.05	3.35	3.74	22.65	25.80						
MW-60-154	Q2-2008	005	154.4	-141.9	4/24/2008	12:36	453.00	128.00	194.00	-0.24	0.37	0.78	-1.25	2.37	3.69	1.29	2.06	3.79	NA	NA	NA	517.75	0.51	ND	ND	ND	MW-60-154
MW-60-154	Q3-2008	006	154.4	-141.9	7/30/2008	13:35	516.00	144.00	191.00	0.51	0.25	0.33	-0.88	2.67	3.58	0.43	1.89	3.25	NA	NA	NA						
MW-60-154	Q4-2008	007	154.4	-141.9	11/6/2008	11:19	687.00	416.00	386.00	0.43	0.66	0.72	2.47	4.96	5.91	0.55	5.87	6.61	NA	NA	NA						
MW-60-154	Q1-2009	008	154.4	-141.9	2/9/2009	12:23	415.00	165.00	167.00	0.46	0.80	0.90	0.71	3.02	3.45	1.01	3.54	4.13	-3.74	20.85	24.20						
MW-60-176	Q2-2008	005	175.9	-163.4	4/24/2008	13:10	777.00	204.00	273.00	0.27	0.49	0.85	-1.81	2.70	4.00	-0.99	2.53	3.95	NA	NA	NA	855.00	ND	ND	ND	ND	MW-60-176
MW-60-176	Q3-2008	006	175.9	-163.4	7/30/2008	14:08	895.00	167.00	191.00	-0.02	0.30	0.59	-0.32	2.12	3.44	-0.21	2.03	3.34	NA	NA	NA						
MW-60-176	Q4-2008	007	175.9	-163.4	11/6/2008	11:55	832.00	435.00	386.00	0.22	0.47	0.55	-2.63	5.09	5.07	-0.11	5.66	6.33	NA	NA	NA						
MW-60-176	Q1-2009	008	175.9	-163.4	2/9/2009	13:08	916.00	190.50	170.00	0.43	0.68	0.76	-0.24	3.27	3.56	0.51	3.29	3.74	-12.20	20.55	24.40						
MW-62-18	Q3-2008	006	13.5	1.2	8/6/2008	12:55	269.00	141.00	225.00	0.53	0.33	0.49	0.10	1.67	2.82	-0.13	1.99	3.33	NA	NA	NA	380.33	0.81	ND	ND	NA	MW-62-18
MW-62-18	Q4-2008	007	13.5	1.2	10/29/2008	13:20	408.00	165.00	166.00	0.52	0.60	0.64	-0.03	5.10	5.60	-3.91	5.25	4.70	NA	NA	NA						
MW-62-18	Q1-2009	008	13.5	1.2	1/23/2009	11:55	464.00	138.75	107.00	1.09	0.65	0.60	0.99	2.55	3.06	-0.34	2.48	2.74	NA	NA	NA						
MW-62-37	Q3-2008	006	34.5	-19.8	8/6/2008	12:00	394.00	119.00	145.00	0.22	0.27	0.45	-2.55	1.52	2.06	-1.08	1.56	2.38	NA	NA	NA	472.00	1.36	ND	ND	NA	MW-62-37
MW-62-37	Q4-2008	007	34.5	-19.8	10/29/2008	13:57	535.00	171.00	166.00	1.36	0.66	0.52	0.42	4.77	5.33	-2.20	5.19	5.20	NA	NA	NA						
MW-62-37	Q1-2009	008	34.5	-19.8	1/23/2009	12:20	487.00	141.75	108.00	0.13	0.74	0.90	-0.77	3.12	3.43	-0.65	3.14	3.36	NA	NA	NA						
MW-62-53	Q3-2008	005	53.1	-40.3	8/6/2008	12:35	352.00	154.00	241.00	0.01	0.25	0.50	1.38	2.24	3.98	0.30	2.30	3.87	NA	NA	NA	372.00	ND	ND	ND	NA	MW-62-53
MW-62-53	Q4-2008	006	53.1	-40.3	10/29/2008	13:51	408.00	167.00	167.00	0.07	0.39	0.49	-0.40	5.85	6.51	-2.87	8.09	7.19	NA	NA	NA						
MW-62-53	Q1-2009	007	53.1	-40.3	1/23/2009	12:44	356.00	216.00	208.00	0.45	0.77	0.86	0.23	3.30	3.77	-1.27	3.56	3.71	NA	NA	NA						
MW-62-71	Q3-2008	006	71.1	-58.3	8/6/2008	11:42	464.00	166.00	253.00	0.33	0.26	0.39	0.59	2.01	3.53	-0.50	2.23	3.66	NA	NA	NA	425.00	ND	ND	ND	NA	MW-62-71
MW-62-71	Q4-2008	007	71.1	-58.3	10/29/2008	12:00	512.00	170.00	166.00	0.37	0.48	0.50	-2.34	5.97	6.37	-1.31	6.46	7.00	NA	NA	NA						
MW-62-71	Q1-2009	008	71.1	-58.3	1/23/2009	12:12	299.00	207.00	204.00	0.25	0.74	0.86	1.92	3.53	4.25	-0.48	3.87	4.22	NA	NA	NA						
MW-62-92	Q3-2008	006	91.6	-78.8	8/6/2008	11:49	495.00	159.00	238.00	0.24	0.33	0.56	1.51	2.29	4.11	5.16	2.59	5.35	NA	NA	NA	500.67	ND	ND	ND	NA	MW-62-92
MW-62-92	Q4-2008	007	91.6	-78.8	10/29/2008	12:10	482.00	168.00	166.00	-0.05	0.54	0.71	1.64	6.57	7.61	2.71	6.33	7.68	NA	NA	NA						
MW-62-92	Q1-2009	008	91.6	-78.8	1/23/2009	12:28	525.00	232.50	205.00	-0.16	0.69	0.87	0.29	4.58	4.83	1.88	3.83	4.74	NA	NA	NA						
MW-62-138	Q3-2008	006	138.1	-125.3	8/6/2008	11:41	533.00	155.00	228.00	1.21	0.42	0.50	0.82	2.44	4.27	0.39	2.41	4.20	NA	NA	NA	636.33	1.64	ND	ND	NA	MW-62-138
MW-62-138	Q4-2008	007	138.1	-125.3	10/29/2008	12:25	750.00	182.00	166.00	1.24	0.55	0.36	1.40	6.06	7.05	2.04	8.28	8.60	NA	NA	NA						
MW-62-138	Q1-2009	008	138.1	-125.3	1/23/2009	12:50	626.00	243.00	204.00	2.46	0.83	0.62	-0.42	2.40	2.67	0.60	2.24	2.64	NA	NA	NA						
MW-62-182	Q3-2008	006	182.1	-169.3	8/6/2008	13:54	399.00	152.00	234.00	0.05	0.33	0.62	0.85	2.19	3.85	-0.27	2.40	3.97	NA	NA	NA	465.00	ND	ND	ND	NA	MW-62-182
MW-62-182	Q4-2008	007	182.1	-169.3	10/29/2008	15:52	498.00	170.00	166.00	0.04	0.71	0.92	1.60	6.21	6.92	0.30	5.82	6.54	NA	NA	NA						
MW-62-182	Q1-2009	008	182.1	-169.3	1/23/2009	13:49	498.00	228.00	203.00	-0.19	0.46	0.70	-1.91	2.55	2.68	-1.03	2.43	2.55	NA	NA	NA						
MW-63-18	Q2-2008	005	14.9	0.7	4/23/2008	14:50	257.00	153.00	243.00	0.02	0.47	0.86	0.80	2.35	4.03	0.77	2.06	3.69	8.53	14.30	24.20	288.50	3.29	ND	ND	ND	MW-63-18
MW-63-18	Q3-2008	006	14.9	0.7	7/30/2008	11:13	179.00	120.00	191.00	3.29	0.56	0.47	-0.02	1.75	2.97	-1.16	2.04	2.49	NA	NA	NA						
MW-63-18	Q4-2008	007	14.9	0.7	11/5/2008	10:53	320.00	159.00	165.00	0.33	0.62	0.70	0.13	5.91	6.75	-1.52	5.73	6.04	NA	NA	NA						
MW-63-18	Q1-2009	008	14.9	0.7	1/29/2009	13:46	154.00	184.50	198.00	-0.22	0.67	0.86	0.10	2.64	3.01	1.02	3.20	3.87	NA	NA	NA						
MW-63-34	Q2-2008	005	31.5	-17.3	4/23/2008	13:55	490.00	168.00	245.00	0.38	0.57	0.99	1.71	2.05	3.78	-1.77	3.53	4.19	5.77	14.60	24.90	441.25	1.15	ND	ND	ND	MW-63-34
MW-63-34	Q3-2008	006	31.5	-17.3	7/30/2008	11:12	441.00	139.00	191.00	1.15	0.46	0.65	-0.01	2.26	3.87	-0.79	2.52	3.65	NA	NA	NA						
MW-63-34	Q4-2008	007	31.5	-17.3	11/5/2008	11:03	414.00	377.00	385.00	0.32	0.68	0.78	0.57	5.43	6.10	-0.14	5.17	5.67	NA	NA	NA						
MW-63-34	Q1-2009	008	31.5	-17.3	1/29/2009	12:22	420.00	222.00	196.00	0.22	0.69	0.81	1.41	2.91	3.45	-0.26	2.96	3.23	NA	NA	NA						
MW-63-50	Q2-2008	005	49.5	-37.2	4/23/2008	13:04	270.00	163.00	265.00	0.43	0.55	0.93	-1.10	1.85	2.93	0.90	1.75	3.27	2.43	14.00	24.10	305.00	ND	ND	ND	ND	MW-63-50
MW-63-50	Q3-2008	006	49.5	-37.2	7/30/2008	10:29	335.00	132.00	191.00	0.61	0.50	0.80	-1.77	1.83	2.66	-1.22	1.91	2.80	NA	NA	NA						
MW-63-50	Q4-2008	007	49.5	-37.2	11/5/2008	9:39	317.00	194.00	199.00	0.57	0.66	0.68	1.26	6.36	7.04	-0.72	6.52	7.08	NA	NA	NA						
MW-63-50	Q1-2009	008	49.5	-37.2	1/29/2009	14:06	298.00	204.00	196.00	0.57	0.80	0.88	0.09	3.09	3.51	1.37	3.41	4.19	NA	NA	NA						
MW-63-93	Q2-2008	005	93	-80.7	4/23/2008	11:23	302.00	165.00	265.00	0.29	0.55	0.94	0.35	2.27	3.88	0.70	2.41	4.14	-3.72	14.10	24.60	317.50	ND	ND	ND	ND	MW-63-93
MW-63-93[10]	Q3-2008	007	93	-80.7	7/29/2008	14:17	238.00	125.00	192.00	0.00	0.22	0.39	-0.40	2.01	3.36	-0.32	1.96	3.23	NA	NA	NA						
MW-63-93	Q4-2008	008	93	-80.7	11/5/2008	10:14	390.00	375.00	386.00	-0.10	0.19	0.24	1.53	5.10	5.92	2.80	6.24	7.60	NA	NA	NA						
MW-63-93	Q1-2009	009	93	-80.7	1/29/2009	14:20	340.00	208.50	193.00	0.12	0.63	0.78	-0.94	3.17	3.42	-0.82	3.63	3.88	NA	NA	NA						

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS: TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			YEARLY ROLLING AVERAGES[4]: TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	Well ID
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
MW-63-112	Q2-2008	005	111.5	-99.2	4/23/2008	11:08	372.00	168.00	265.00	-0.04	0.40	0.79	0.48	2.30	3.89	1.75	2.78	4.52	-0.50	14.30	24.80	322.75	ND	ND	ND	ND	MW-63-112
MW-63-112	Q3-2008	006	111.5	-99.2	7/29/2008	14:20	207.00	101.00	163.00	0.71	0.54	0.87	0.66	2.23	3.89	1.07	2.46	4.41	NA	NA	NA						
MW-63-112	Q4-2008	007	111.5	-99.2	11/4/2008	12:41	275.00	192.00	201.00	0.47	0.59	0.62	0.19	5.68	6.43	-2.75	8.34	7.58	NA	NA	NA						
MW-63-112	Q1-2009	008	111.5	-99.2	1/30/2009	14:39	437.00	220.50	197.00	0.02	0.78	0.92	-1.10	2.81	2.86	1.77	3.41	4.13	NA	NA	NA						
MW-63-121	Q2-2008	005	121	-108.7	4/23/2008	11:17	454.00	134.00	198.00	0.54	0.49	0.80	-0.36	0.94	1.55	-1.33	2.71	1.81	-3.22	14.10	24.60	479.00	0.75	ND	ND	ND	MW-63-121
MW-63-121[11]	Q3-2008	006	121	-108.7	7/29/2008	14:30	344.00	104.00	161.00	0.76	0.38	0.57	0.29	2.08	3.57	1.23	2.30	4.11	NA	NA	NA						
MW-63-121	Q4-2008	007	121	-108.7	11/4/2008	12:43	495.00	206.00	198.00	0.38	0.75	0.86	-0.80	5.42	5.97	1.20	6.38	7.41	NA	NA	NA						
MW-63-121	Q1-2009	008	121	-108.7	1/30/2009	14:41	623.00	241.50	197.00	0.73	0.51	0.45	1.91	3.18	3.92	0.91	2.84	3.45	NA	NA	NA						
MW-63-163	Q2-2008	005	162.5	-150.2	4/23/2008	11:23	444.00	170.00	265.00	0.18	0.43	0.79	0.80	1.06	1.84	0.66	1.13	1.94	5.30	15.20	26.00	539.50	ND	ND	ND	ND	MW-63-163
MW-63-163[10]	Q3-2008	006	162.5	-150.2	7/29/2008	14:56	448.00	107.00	163.00	-0.09	0.25	0.44	-2.09	2.34	3.61	0.90	2.59	4.48	NA	NA	NA						
MW-63-163	Q4-2008	007	162.5	-150.2	11/4/2008	12:45	685.00	186.00	176.00	-0.14	0.55	0.75	0.18	5.37	6.12	0.78	6.21	7.23	NA	NA	NA						
MW-63-163	Q1-2009	008	162.5	-150.2	1/29/2009	11:57	581.00	240.00	195.00	0.29	0.56	0.64	5.82	7.23	3.42	-0.17	2.81	3.03	NA	NA	NA						
MW-63-174	Q2-2008	005	174	-161.7	4/23/2008	11:21	489.00	172.00	265.00	-0.07	0.37	0.75	-0.57	2.01	3.30	0.37	2.43	4.19	-2.14	14.40	25.00	476.75	ND	ND	ND	ND	MW-63-174
MW-63-174[10]	Q3-2008	006	174	-161.7	7/29/2008	14:40	449.00	140.00	192.00	0.07	0.28	0.48	-0.38	2.23	3.71	-1.72	2.65	3.79	NA	NA	NA						
MW-63-174	Q4-2008	007	174	-161.7	11/4/2008	12:44	477.00	204.00	199.00	-0.28	0.55	0.78	-2.68	4.83	4.74	1.18	5.45	6.30	NA	NA	NA						
MW-63-174	Q1-2009	008	174	-161.7	1/29/2009	11:55	492.00	228.00	197.00	0.43	0.60	0.66	-0.45	3.81	3.67	-1.34	3.29	3.32	NA	NA	NA						
MW-66-21	Q2-2008	004	14.1	0	4/21/2008	14:10	953.00	151.00	193.00	1.01	0.21	0.28	0.65	2.36	4.07	0.02	2.26	3.74	-7.28	8.88	15.50	682.75	0.98	ND	ND	ND	MW-66-21
MW-66-21	Q3-2008	005	14.1	0	7/29/2008	11:48	783.00	102.00	130.00	0.91	0.36	0.44	-1.01	1.88	2.92	1.71	2.17	3.99	-6.26	16.60	29.90						
MW-66-21	Q4-2008	006	14.1	0	11/4/2008	10:30	534.00	207.00	164.00	1.03	0.70	0.67	1.44	4.67	5.42	2.98	5.17	6.47	-5.68	17.90	20.90						
MW-66-21	Q1-2009	007	14.1	0	1/27/2009	13:52	461.00	174.00	175.00	0.29	0.75	0.87	8.99[14]	5.45	3.11	-1.87	2.90	2.71	12.90	17.40	19.30						
MW-66-36	Q2-2008	004	33.6	-19.5	4/21/2008	13:25	6090.00	289.00	197.00	13.20	0.53	0.37	-0.29	2.09	3.46	-2.09	3.54	4.13	-0.34	8.98	15.40	5047.50	12.80	ND	ND	ND	MW-66-36
MW-66-36	Q3-2008	005	33.6	-19.5	7/29/2008	12:05	5010.00	191.00	130.00	12.00	1.06	0.62	0.21	1.66	2.82	-1.05	1.93	3.00	-1.00	16.90	29.80						
MW-66-36	Q4-2008	006	33.6	-19.5	11/4/2008	10:40	5440.00	534.00	167.00	13.80	1.71	0.52	0.69	4.32	4.90	1.78	5.24	6.23	0.96	16.40	18.80						
MW-66-36	Q1-2009	007	33.6	-19.5	1/27/2009	13:07	3650.00	762.00	441.00	12.20	1.56	0.62	-1.04	2.88	3.06	0.06	3.27	3.72	14.50	16.95	18.70						
MW-67-39[8]	Q3-2008	005	38.3	-25.8	7/28/2008	14:07	3870.00	172.00	130.00	13.70	1.11	0.40	-1.03	2.60	3.42	0.45	2.15	3.68	6.34	16.70	28.80	3573.33	14.70	ND	ND	ND	MW-67-39
MW-67-39	Q4-2008	007	38.3	-25.8	12/18/2008	11:30	3180.00	266.00	171.00	16.20	1.69	1.00	1.18	4.61	5.40	0.73	5.04	5.81	0.84	16.80	19.40						
MW-67-39	Q1-2009	008	38.3	-25.8	1/27/2009	16:15	3670.00	291.00	192.00	14.20	1.71	0.76	-0.80	2.04	2.15	-0.11	2.06	2.25	11.20	16.80	18.70						
MW-67-105	Q3-2008	005	104.8	-92.3	7/28/2008	14:25	2160.00	140.00	137.00	0.96	0.35	0.42	0.42	1.59	2.78	0.77	1.51	2.78	7.25	16.50	28.50	2350.00	1.04	ND	ND	ND	MW-67-105
MW-67-105	Q4-2008	006	104.8	-92.3	11/3/2008	14:21	2930.00	402.00	166.00	1.11	0.56	0.46	-0.25	6.36	7.11	0.08	6.87	7.59	6.32	16.80	19.00						
MW-67-105	Q1-2009	007	104.8	-92.3	1/27/2009	16:45	1960.00	241.50	192.00	0.41	0.83	0.95	-1.13	3.32	2.71	-0.03	2.39	2.66	12.10	16.35	18.10						
MW-67-173	Q3-2008	005	172.3	-159.8	7/28/2008	14:42	912.00	109.00	136.00	0.11	0.27	0.49	-1.22	2.06	3.19	-0.36	2.14	3.49	5.88	16.40	28.40	887.33	ND	ND	ND	ND	MW-67-173
MW-67-173	Q4-2008	006	172.3	-159.8	11/3/2008	14:37	993.00	258.00	166.00	-0.03	0.26	0.30	-1.41	6.69	6.32	1.49	6.66	7.65	-1.40	16.90	19.70						
MW-67-173	Q1-2009	007	172.3	-159.8	1/27/2009	16:33	757.00	199.50	192.00	0.44	0.59	0.63	13.4[14]	4.85	2.53	-1.24	2.58	2.73	14.80	17.85	19.60						
MW-67-219	Q3-2008	005	218.8	-206.3	7/28/2008	11:00	1170.00	116.00	136.00	-0.07	0.23	0.49	-0.29	1.98	3.33	-0.26	1.92	3.18	5.99	16.80	29.00	1169.33	ND	ND	ND	ND	MW-67-219
MW-67-219	Q4-2008	006	218.8	-206.3	11/3/2008	11:31	1370.00	293.00	168.00	0.09	0.17	0.19	1.32	4.93	5.86	4.00	6.30	8.05	2.30	16.50	18.80						
MW-67-219	Q1-2009	007	218.8	-206.3	1/27/2009	12:34	968.00	280.50	250.00	-0.08	0.53	0.71	-0.36	1.89	2.10	0.08	1.83	2.09	11.40	21.60	24.30						
MW-67-276	Q3-2008	005	275.3	-262.8	7/28/2008	11:09	1160.00	116.00	136.00	-0.05	0.28	0.55	-0.89	1.98	3.18	0.59	1.97	3.45	7.55	16.20	27.70	1146.67	ND	ND	ND	ND	MW-67-276
MW-67-276	Q4-2008	006	275.3	-262.8	11/3/2008	11:39	1180.00	275.00	166.00	-0.05	0.18	0.22	0.38	5.63	6.29	-0.74	6.00	6.50	7.29	17.30	19.50						
MW-67-276	Q1-2009	007	275.3	-262.8	1/27/2009	13:01	1100.00	511.50	439.00	0.33	0.59	0.67	0.24	3.24	3.70	-1.19	3.74	3.96	11.50	16.80	18.70						
MW-67-323	Q3-2008	005	322.3	-309.8	7/28/2008	11:25	338.00	90.80	136.00	-0.24	0.37	0.73	0.83	2.30	3.99	0.22	2.04	3.46	-5.98	15.90	28.60	462.33	ND	ND	ND	ND	MW-67-323
MW-67-323	Q4-2008	006	322.3	-309.8	11/3/2008	11:44	684.00	224.00	164.00	0.04	0.34	0.44	-3.56	5.21	5.18	0.43	5.12	5.87	-7.38	15.90	18.70						
MW-67-323	Q1-2009	007	322.3	-309.8	1/27/2009	13:50	365.00	169.50	176.00	-0.12	0.41	0.59	0.47	3.86	4.42	0.35	3.38	3.86	9.84	13.23	14.70						
MW-67-340	Q3-2008	005	339.8	-327.3	7/28/2008	11:18	511.00	93.60	130.00	-0.34	0.23	0.55	0.31	2.21	3.81	0.90	2.25	3.68	-6.94	15.70	27.80	567.67	ND	ND	ND	ND	MW-67-340
MW-67-340	Q4-2008	006	339.8	-327.3	11/3/2008	11:54	669.00	222.00	163.00	0.08	0.43	0.54	2.23	6.25	7.45	3.65	6.76	8.47	-8.34	15.90	18.80						
MW-67-340	Q1-2009	007	339.8	-327.3	1/27/2009	12:44	523.00	436.50	439.00	0.26	0.55	0.63	0.47	3.72	4.19	-0.40	3.41	3.67	7.78	16.80	19.00						
MW-107	Q2-2008	006	32.7	110.1	4/24/2008	15:41	191.00	89.00	144.00	-0.06	0.22	0.44	-2.03	2.78	4.11	-1.38	2.12	3.07	NA	NA	NA	191.00	ND	ND	ND	NA	MW-107
MW-107	Mid-Quarter	007	32.7	110.1	5/30/2008	15:25	46.20	90.20	158.00	0.07	0.55	0.96	1.22	1.88	3.36	0.55	2.20	3.57	NA	NA	NA						
MW-111	Q4-2008	027	16.5	2.4	9/4/2008	14:00	73900.00	1890.00	547.00	1.02	0.36	0.42	-0.82	2.22	36.10	NA	NA	NA	NA	NA	NA	70150.00	1.02	ND	ND	NA	MW-111
MW-111	Mid-Quarter	028	16.5	2.4	10/21/2008	14:20	66400.00	2000.00	260.00	0.91	0.93	0.97	-0.94	3.60	3.79	0.51	4.32	5.03	NA	NA	NA						
U3-4D	Q2-2008	016	25.6	-10.8	4/29/2008	13:27	319.00	143.00	222.00	0.14	0.28	0.49	0.52	1.91	3.36	-0.15	1.73	2.91	NA	NA	NA	458.75	ND	ND	ND	NA	U3-4D
U3-4D	Q3-2008	017	25.6	-10.8	7/28/2008	16:46	466.00	250.00	379.00	-0.36	0.50	0.98	0.29	2.08	3.62	0.48	2.36	3.69	NA	NA	NA						
U3-4D	Q4-2008	018	25.6	-10.8	10/20/2008	14:40	568.00	171.00	164.00	-0.09	0.86	1.11	0.35	4.62	5.17	0.71	4.13	4.79	NA	NA	NA						
U3-4D	Mid-Quarter	010	25.6	-10.8	11/4/2008	12:00	118.00	423.00	476.00	NA	NA	NA	3.17	9.51	6.90	3.34	10.00	7.54	NA	NA	NA						
U3-4D	Confirmatory	011	25.6	-10.8	11/10/2008	12:00	316.00	414.00	461.00	NA	NA	NA	4.10	12.30	8.95	4.07	12.20	9.41	NA	NA	NA						
U3-4D	Q1-2009	019	25.6	-10.8	2/10/2009	14:15	482.00	231.00	197.00	0.10	0.52	0.64	0.39	2.66	3.00	0.75	3.02	3.39	NA	NA	NA						
U3-T1	Q2-2008	020	5.7	2.8	5/2/2008	15:24	709.00	163.00	222.00	0.72	0.52	0.83	0.29	1.84	3.19	-1.15	1.87	2.82	NA	NA	NA	634.75	0.87	ND	ND	NA	U3-T1
U3-T1	Q3-2008	021	5.7	2.8	7/23/2008	11:16	556.00	258.00	379.00	0.64	0.52	0.84	2.41	2.24	4.18	0.65	2.44	4.01	NA	NA	NA						
U3-T1	Q4-2008	022	5.7	2.8	10/20/2008	10:19	599.00	563.00	591.00	0.70	0.55	0.52	2.51	6.27	7.46	1.51	6.24	7.35	NA	NA	NA						
U3-T1	Q1-2009	023	5.7	2.8	1/28/2009	12:00	675.00	247.50	204.00	1.04	0.75	0.74	-1.53	3.59	2.95	-0.66	2.30	2.48	NA	NA	NA						
U3-T2	Q2-2008	025	5.7	2.6	5/2/2008	14:44	1020.00	177.00	222.00	0.65	0.33	0.47	0.58	2.06	3.53	0.79	1.63	3.00	NA	NA	NA	1013.75	0.65	ND	ND	NA	U3-T2
U3-T2	Q3-2008	026	5.7	2.6	7/23/2008	13:40	997.00	285.00	364.00	0.59	0.52	0.84	0.04	1.72	2.93	-1.02	2.44	3.39	NA	NA	NA						

TABLE 3
FIRST QUARTER 2009 GROUNDWATER ANALYTICAL RESULTS AND AVERAGES
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLING QUARTER[2]	SAMPLE ID	SAMPLE ZONE CENTER, Depth Ft Below Top of Casing[3]	SAMPLE ZONE CENTER, Elevation Ft msl[3]	SAMPLE COLLECTION		ANALYSIS RESULTS															YEARLY ROLLING AVERAGES[4]					Well ID
							TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			TRITIUM (pCi/L)	Sr-90 (pCi/L)	Cs-137 (pCi/L)	Co-60 (pCi/L)	Ni-63 (pCi/L)	
					Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Average	Average	Average	Average	Average	
U3-T2	Q4-2008	027	5.7	2.6	10/20/2008	10:36	928.00	597.00	590.00	0.47	0.50	0.49	-0.47	4.82	5.31	-5.02	6.54	6.06	NA	NA	NA						
U3-T2	Q1-2009	028	5.7	2.6	1/28/2009	11:40	1110.00	286.50	204.00	0.60	0.64	0.68	0.71	2.42	2.74	0.41	2.30	2.61	NA	NA	NA						
LAF-002	Q2-2008	009		-22.3	4/10/2008	0:00	46.50	84.60	144.00	0.47	0.30	0.46	1.91	2.14	3.95	1.61	2.46	4.56	NA	NA	NA	ND	0.47	ND	ND	ND	LAF-002
LAF-002	Q4-2008	010		-22.3	10/17/2008	10:32	81.90	155.00	174.00	0.41	0.79	0.90	0.24	2.76	3.16	-0.03	3.09	3.46	-4.61	20.10	23.50						
B-1[9]	Q2-2008	005			4/18/2008	18:25	1170.00	157.00	201.00	-0.11	0.38	0.78	20.00	3.70	3.07	-0.25	1.76	2.97	NA	NA	NA	1170.00	ND	20.00	ND	NA	B-1
B-6[9]	Q2-2008	005			4/25/2008	14:15	52.30	84.50	143.00	-0.12	0.26	0.53	-0.29	1.96	3.24	-0.75	3.43	4.21	NA	NA	NA	ND	ND	ND	ND	NA	B-6
U1-CSS	Q2-2008	006	14	6.1	4/23/2008	15:25	1770.00	196.00	144.00	6.74	0.90	0.72	-1.36	2.12	3.20	-0.76	2.08	3.16	NA	NA	NA	1753.60	7.35	ND	ND	ND	U1-CSS
U1-CSS	Mid-Quarter	007	14	6.1	5/12/2008	14:05	688.00	135.00	142.00	4.83	0.84	0.93	2.59	2.30	4.25	0.31	2.58	3.96	-2.18	11.90	20.80						
U1-CSS	Mid-Quarter	008	14	6.1	9/8/2008	10:24	1450.00	377.00	498.00	9.38	0.94	0.54	1.90	2.07	3.76	NA	NA	NA	NA	NA	NA						
U1-CSS	Q4-2008	009	14	6.1	11/6/2008	14:48	2660.00	386.00	166.00	6.74	1.20	0.53	3.52	6.01	7.29	-1.94	6.45	6.67	10.20	16.50	18.50						
U1-CSS	Mid-Quarter	010	14	6.1	11/19/2008	13:50	2200.00	233.00	162.00	9.08	1.38	0.58	2.35	4.04	4.98	0.86	4.63	5.37	NA	NA	NA						
U1-NCD	Q2-2008	001			5/8/2008	9:45	9500.00	349.00	196.00	397.00	2.58	0.36	NA	NA	NA	NA	NA	NA	NA	NA	NA	5940.00	432.00	28400.00	ND	641.00	U1-NCD
U1-NCD	Q4-2008	002			10/15/2008	12:35	6190.00	371.00	161.00	435.00	5.89	0.33	NA	NA	NA	NA	NA	NA	NA	NA	NA						
U1-NCD	Q1-2009	003			1/12/2009	13:45	2130.00	247.50	192.00	464.00	8.90	0.66	28400.00	2625.00	12.20	0.77	2.37	2.80	641.00	41.10	18.90						
U1-SFDS	Q2-2008	001			4/9/2008	8:55	628.00	141.00	197.00	9.98	0.49	0.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	727.50	13.70	6.39	ND	ND	U1-SFDS
U1-SFDS	Mid-Quarter	002			5/8/2008	9:10	881.00	150.00	196.00	14.00	0.52	0.37	NA	NA	NA	NA	NA	NA	NA	NA	NA						
U1-SFDS	Q4-2008	003			10/15/2008	12:45	1090.00	179.00	167.00	18.50	1.26	0.46	NA	NA	NA	NA	NA	NA	NA	NA	NA						
U1-SFDS	Q1-2009	004			1/14/2009	9:15	311.00	181.50	193.00	12.20	1.67	0.82	6.39	3.47	2.22	1.03	1.91	2.27	7.26	16.20	18.30						

Notes

1 For nested multi-level monitoring wells, suffix of well ID indicates depth (rounded to nearest foot) from reference point on casing to bottom of well screen For Waterloo multi-level systems, suffix indicates depth (rounded to nearest foot) from reference point on casing to top of sampling port Well IDs without a suffix are open bedrock wellbores

2 All analytical results from the last 12 months from each location are provided Monitoring locations are sampled quarterly, bi-annually, or annually, and as necessary during the year

3 Sampling depths within sampling intervals (i e location of pump intake) have been located adjacent to a transmissive zone where possible

4 Averages provided are analytical result averages of all valid samples (including mid-quarter and confirmatory samples) collected from each monitoring location from the second quarter of 2008 (Q2-2008) to the first quarter of 2009 (Q1-2009) including post Q1-2009 samples Monitoring locations are sampled quarterly, bi-annually, or annually and additional samples are collected when necessary Therefore, some results provided are the average of more than 4 samples For quarters in which samples were reanalyzed due to potential false positives, both results were used to calculate averages if subsequent results confirmed the validity of the original sample/analysis For cases in which reanalysis discredited the validity of the original sample result, the replacement results were used to calculate the average If analytical results resulted in resampling, and the resample result discredited the validity of the original sample result of a particular radionuclide, the original sample results were not used for any radionuclides and only the resample result was used For cases in which an aliquot of the original sample was reanalyzed, if the result of the aliquot confirmed the original result, then the aliquot result and the original result were averaged and the average of the two was used to calculate the rolling average If the aliquot result indicated the original result was false, then only the aliquot result was used to calculate the rolling average

5 NA indicates that the constituent was not analyzed

6 ND indicates that all of the analytical results used to calculate the average were less than MDC and/or 3 times the 1 sigma uncertainty

7 Dot pattern denotes sampling interval is positioned within overburden Open box indicates sampling interval is in bedrock

8 Due to unexpectedly high levels of Co-60 detected in the original set of the 4th Quarter 2008 samples collected from MW-67-39, a second set of samples were collected and analyzed Quality control review of the original analysis showed no evidence of error in laboratory analysis or field collection procedures and reanalysis of the original sample confirmed the Co-60 detections However, historical data and data for the second set of samples showed results below MDC and below three times the 1 sigma uncertainty (not positive) for Co-60 at this interval, suggesting that the first set of results do not appropriately characterize activity at this interval In addition, results from the NRC split sample of this interval were not positive Thus, results for the first set of MW67-39 samples during Quarter 4 were not used to calculate yearly averages

9 These locations are storm drains

10 Aliquots from the samples from MW-63-93, MW-63-163 and MW-63-174 were re-analyzed to investigate unexpectedly high Sr-90 results The re-analyzed samples had results below MDC and below three times the 1 sigma uncertainty (not positive) for Sr-90 at these intervals, suggesting that the first set of results do not appropriately characterize activity at these intervals Thus, results from the original samples were not used to calculate yearly averages

11 The sample from MW-63-121 was reanalyzed due to unexpected Sr-90 results The re-analyzed samples confirmed the original results, therefore the average of the original and reanalysis results was used to calculate the rolling averages

12 Confirmatory samples were collected and analyzed to evaluate the results of the preceding sample

13 Mid-quarter samples were collected and analyzed to evaluate the potential effect of certain operations on groundwater quality

14 Due to unexpectedly high levels of Cs-137 detected in the original set of the First Quarter 2009 samples collected from MW-66-21 and MW-67-173, a second set of confirmatory samples were collected and analyzed The re-analyzed samples had results below MDC and below three times the 1 sigma uncertainty (not positive) for Cs-137 at these intervals, suggesting that the first set of results do not appropriately characterize activity at these intervals Thus, cesium results from the original samples were not used to calculate yearly averages

TABLE 4
2009 1ST QUARTER
GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERTY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE COLLECTION		ANALYSIS RESULTS: TRITIUM (pCi/L)				Sr-90 (pCi/L)				Cs-137 (pCi/L)				Co-60 (pCi/L)				Ni-63 (pCi/L)				Well ID
		Date	Time	Result	Std. Dev.	MDC	I.L.[3]	Result	Std. Dev.	MDC	I.L.	Result	Std. Dev.	MDC	I.L.	Result	Std. Dev.	MDC	I.L.	Result	Std. Dev.	MDC	I.L.	
MW-30-69	023	1/30/2009	11:00	1.07E+05	2.51E+03	1.98E+02	2.64E+05	-8.74E-02	7.58E-01	9.73E-01	2.00E+00	-1.13E+00	2.61E+00	2.66E+00	positive	1.06E+00	2.70E+00	3.24E+00	positive	NA	NA	NA	positive	MW-30-69
MW-30-84	014	1/30/2009	11:21	4.69E+03	5.48E+02	1.99E+02	8.57E+03	9.38E-02	5.97E-01	7.19E-01	2.00E+00	8.97E+00	4.34E+00	3.02E+00	positive	-8.43E-02	3.39E+00	3.81E+00	positive	NA	NA	NA	positive	MW-30-84
MW-31-49	014	2/6/2009	11:05	1.11E+04	7.86E+02	1.99E+02	1.55E+04	1.18E-01	3.00E-01	3.57E-01	2.00E+00	-1.67E-01	2.97E+00	3.35E+00	positive	-4.61E-01	2.85E+00	3.14E+00	positive	NA	NA	NA	positive	MW-31-49
MW-31-63	014	2/6/2009	11:53	1.28E+04	8.39E+02	1.97E+02	3.69E+04	6.43E-01	6.42E-01	6.82E-01	2.00E+00	-1.32E+00	3.42E+00	3.63E+00	positive	-7.48E-01	3.86E+00	4.17E+00	positive	NA	NA	NA	positive	MW-31-63
MW-31-85	014	2/6/2009	11:22	7.37E+03	6.54E+02	2.02E+02	8.73E+03	3.89E-01	5.58E-01	6.16E-01	2.00E+00	1.22E+00	3.50E+00	4.06E+00	positive	1.09E+00	3.57E+00	4.23E+00	positive	NA	NA	NA	positive	MW-31-85
MW-32-59	008	2/4/2009	15:46	1.78E+04	1.03E+03	1.98E+02	1.00E+04	-1.01E-01	5.73E-01	7.69E-01	2.00E+00	1.01E-01	3.54E+00	3.41E+00	positive	2.70E+00	3.41E+00	4.34E+00	positive	NA	NA	NA	positive	MW-32-59
MW-32-85	011	2/4/2009	15:49	6.54E+03	6.38E+02	1.98E+02	1.81E+04	5.26E-01	7.76E-01	8.50E-01	2.00E+00	4.88E-01	2.85E+00	3.31E+00	positive	2.27E+00	3.20E+00	4.15E+00	positive	NA	NA	NA	positive	MW-32-85
MW-32-149	009	2/4/2009	13:50	2.65E+02	1.18E+02	1.17E+02	1.53E+03	4.53E-01	6.75E-01	7.34E-01	2.00E+00	5.44E-01	2.99E+00	3.38E+00	positive	3.32E-01	2.91E+00	3.28E+00	positive	NA	NA	NA	positive	MW-32-149
MW-32-173	007	2/4/2009	13:40	7.56E+02	1.45E+02	1.17E+02	3.27E+03	2.57E-01	4.26E-01	4.74E-01	2.00E+00	1.79E+00	3.65E+00	4.41E+00	positive	2.56E+00	3.47E+00	4.49E+00	positive	NA	NA	NA	positive	MW-32-173
MW-32-190	010	2/4/2009	13:45	2.69E+03	4.26E+02	1.98E+02	1.10E+04	2.44E-01	5.57E-01	6.47E-01	2.00E+00	3.60E-02	2.67E+00	2.95E+00	positive	4.71E-01	3.02E+00	3.44E+00	positive	NA	NA	NA	positive	MW-32-190
MW-36-24[5]	013	1/22/2009	12:48	2.37E+02	1.16E+02	1.06E+02	2.25E+03	-6.26E-01	7.37E-01	9.48E-01	2.00E+00	5.41E-01	2.88E+00	3.34E+00	positive	3.15E-01	3.35E+00	3.82E+00	positive	NA	NA	NA	positive	MW-36-24
MW-36-52	012	1/22/2009	12:59	6.79E+03	6.03E+02	2.06E+02	2.33E+04	3.37E+00	8.99E-01	6.07E-01	1.25E+01	-6.07E-01	2.96E+00	3.24E+00	positive	1.65E+00	3.24E+00	4.05E+00	positive	NA	NA	NA	positive	MW-36-52
MW-37-22	013	1/21/2009	14:27	5.27E+03	5.36E+02	2.05E+02	9.02E+03	8.81E+00	1.33E+00	6.79E-01	2.60E+01	-3.12E-01	3.02E+00	3.27E+00	positive	-2.03E+00	3.09E+00	2.82E+00	positive	NA	NA	NA	positive	MW-37-22
MW-37-32	013	1/21/2009	14:30	3.76E+03	4.61E+02	2.04E+02	9.87E+03	1.11E+01	1.49E+00	6.27E-01	3.63E+01	1.59E+00	2.84E+00	3.40E+00	positive	-7.12E-01	3.32E+00	3.49E+00	positive	NA	NA	NA	positive	MW-37-32
MW-37-40	013	1/22/2009	13:05	4.91E+03	5.13E+02	2.00E+02	1.16E+04	3.47E+00	8.85E-01	5.69E-01	2.26E+00	-2.64E+00	3.78E+00	3.27E+00	positive	2.67E+00	3.14E+00	4.08E+00	positive	NA	NA	NA	positive	MW-37-40
MW-37-57	013	1/21/2009	14:22	5.04E+03	5.21E+02	2.02E+02	1.08E+04	1.99E+01	1.97E+00	6.68E-01	4.94E+01	3.77E-02	3.44E+00	3.80E+00	positive	1.05E+00	3.71E+00	4.35E+00	positive	NA	NA	NA	positive	MW-37-57
MW-40-27	006	1/19/2009	14:29	1.20E+02	1.34E+02	1.48E+02	1.00E+03	4.82E-01	6.36E-01	6.82E-01	2.00E+00	6.25E-01	3.41E+00	3.86E+00	positive	1.46E+00	2.90E+00	3.58E+00	positive	-1.86E+00	1.80E+01	2.09E+01	positive	MW-40-27
MW-40-46	007	1/19/2009	14:28	7.76E+01	1.33E+02	1.48E+02	1.00E+03	2.69E-01	5.01E-01	5.67E-01	2.00E+00	8.08E-01	2.88E+00	3.39E+00	positive	-1.19E+00	2.78E+00	2.88E+00	positive	-5.63E+00	1.89E+01	2.22E+01	positive	MW-40-46
MW-40-81	007	1/19/2009	10:38	1.61E+02	1.37E+02	1.48E+02	1.00E+03	2.92E-01	5.76E-01	6.54E-01	2.00E+00	-4.67E-01	3.62E+00	4.01E+00	positive	-1.41E+00	3.77E+00	3.92E+00	positive	-7.55E+00	1.77E+01	2.09E+01	positive	MW-40-81
MW-40-100	009	1/19/2009	11:52	4.24E+01	1.30E+02	1.48E+02	1.00E+03	1.06E-01	6.03E-01	7.25E-01	2.00E+00	6.13E-01	5.97E+00	3.85E+00	positive	1.26E-01	3.15E+00	3.61E+00	positive	-9.80E+00	1.89E+01	2.24E+01	positive	MW-40-100
MW-40-127	009	1/19/2009	11:25	9.22E+01	1.33E+02	1.48E+02	1.00E+03	-7.90E-02	7.19E-01	9.00E-01	2.00E+00	-1.20E+00	3.75E+00	3.94E+00	positive	1.68E+00	3.66E+00	4.45E+00	positive	-3.34E+00	1.85E+01	2.16E+01	positive	MW-40-127
MW-40-162	007	1/19/2009	11:47	1.07E+02	1.33E+02	1.48E+02	1.00E+03	1.32E-01	5.16E-01	6.16E-01	2.00E+00	-3.98E-01	3.32E+00	3.67E+00	positive	4.22E-01	2.96E+00	3.41E+00	positive	-9.17E+00	1.85E+01	2.20E+01	positive	MW-40-162
MW-42-49	015	1/26/2009	16:16	1.28E+03	3.03E+02	2.06E+02	8.21E+03	6.77E+02	1.13E+01	7.44E-01	1.96E+02	8.05E+04	8.01E+03	2.66E+01	3.79E+04	0.00E+00	5.24E+00	5.56E+00	3.38E+01	9.12E+02	4.50E+01	1.90E+01	8.42E+02	MW-42-49
MW-42-78	011	1/30/2009	11:22	3.65E+02	2.18E+02	2.00E+02	1.02E+03	4.40E-01	6.45E-01	7.03E-01	2.00E+00	6.70E-01	3.32E+00	3.88E+00	2.16E+02	-1.89E-01	3.57E+00	3.99E+00	positive	NA	NA	NA	positive	MW-42-78
MW-44-66	011	2/3/2009	9:40	2.06E+02	1.92E+02	1.97E+02	1.00E+03	4.52E-01	7.98E-01	8.95E-01	2.00E+00	1.96E+00	3.53E+00	4.18E+00	positive	3.09E+00	3.06E+00	4.12E+00	positive	NA	NA	NA	positive	MW-44-66
MW-44-102	012	2/2/2009	12:06	2.57E+02	1.94E+02	1.93E+02	1.00E+03	4.66E-01	6.12E-01	6.71E-01	2.00E+00	9.83E-01	3.39E+00	4.02E+00	positive	-9.65E-01	3.53E+00	3.74E+00	positive	NA	NA	NA	positive	MW-44-102
MW-45-42	015	2/2/2009	18:02	1.41E+03	3.27E+02	1.97E+02	4.02E+03	-1.78E-01	4.41E-01	6.64E-01	2.00E+00	-1.41E+00	2.57E+00	2.67E+00	positive	-1.27E+00	2.55E+00	2.57E+00	positive	NA	NA	NA	positive	MW-45-42
MW-45-61	015	2/2/2009	13:13	1.36E+03	3.24E+02	1.99E+02	3.97E+03	-1.47E-01	7.61E-01	9.47E-01	2.00E+00	9.93E-01	3.59E+00	4.20E+00	positive	2.30E-01	3.23E+00	3.66E+00	positive	NA	NA	NA	positive	MW-45-61
MW-46	015	2/5/2009	13:46	1.00E+03	2.88E+02	1.96E+02	1.61E+03	-1.30E-01	6.23E-01	7.82E-01	2.00E+00	-1.68E+00	2.78E+00	2.71E+00	positive	7.02E-01	2.82E+00	3.28E+00	positive	NA	NA	NA	positive	MW-46
MW-49-26	015	2/6/2009	13:03	3.10E+03	2.66E+02	1.69E+02	8.32E+03	1.38E+01	1.91E+00	8.59E-01	3.63E+01	1.77E+00	4.34E+00	4.54E+00	positive	1.26E+00	3.56E+00	4.24E+00	positive	2.31E+01	2.21E+01	2.42E+01	positive	MW-49-26
MW-49-42	015	2/6/2009	9:57	2.25E+03	2.40E+02	1.70E+02	5.54E+03	2.07E+01	2.37E+00	9.73E-01	4.80E+01	1.38E+00	3.51E+00	4.09E+00	positive	-2.43E+00	3.38E+00	3.11E+00	positive	-2.15E+00	2.15E+01	2.48E+01	positive	MW-49-42
MW-49-65	015	2/6/2009	9:59	1.42E+03	2.10E+02	1.70E+02	3.30E+03	1.73E+01	2.10E+00	9.15E-01	4.07E+01	-9.15E-01	2.96E+00	3.20E+00	positive	7.61E-01	2.64E+00	3.21E+00	positive	2.70E+00	2.22E+01	2.54E+01	positive	MW-49-65
MW-50-42	016	1/22/2009	15:23	2.15E+02	1.38E+02	1.48E+02	1.00E+03	1.96E+00	8.06E-01	6.31E-01	9.49E+00	-1.74E+00	2.48E+00	2.37E+00	positive	-5.18E-01	2.31E+00	2.39E+00	positive	-3.34E+00	1.74E+01	2.03E+01	positive	MW-50-42
MW-50-66	020	1/22/2009	16:01	2.30E+03	2.16E+02	1.48E+02	5.50E+03	2.75E+01	2.28E+00	4.07E-01	7.23E+01	-1.68E+00	4.20E+00	3.99E+00	positive	-1.97E-01	3.32E+00	3.66E+00	positive	-9.33E+00	1.88E+01	2.23E+01	positive	MW-50-66
MW-51-40	010	1/20/2009	14:50	2.37E+01	1.68E+02	1.92E+02	1.00E+03	1.92E-01	7.95E-01	9.70E-01	2.00E+00	9.89E-01	2.81E+00	3.26E+00	positive	1.05E+00	2.75E+00	3.30E+00	positive	8.95E+00	1.67E+01	1.87E+01	positive	MW-51-40
MW-51-79	010	1/20/2009	15:21	1.01E+02	1.33E+02	1.48E+02	1.00E+03	-1.71E-01	3.15E-01	5.02E-01	2.00E+00	5.93E-01	5.57E+00	3.65E+00	positive	-2.94E-01	3.21E+00	3.56E+00	positive	1.58E+01	1.73E+01	1.90E+01	positive	MW-51-79
MW-51-104	008	1/20/2009	10:46	9.95E+01	1.33E+02	1.48E+02	1.00E+03	9.07E-03	3.78E-01	5.04E-01	2.00E+00	-1.33E+00	2.87E+00	3.03E+00	positive	-1.01E+00	2.37E+00	2.42E+00	positive	-2.06E+00	2.00E+01	2.33E+01	positive	MW-51-104
MW-51-135	008	1/20/2009	11:02	1.31E+02	1.35E+02	1.48E+02	1.00E+03	-3.04E-01	3.41E-01	5.84E-01	2.00E+00	-6.92E-01	3.89E+00	4.31E+00	positive	9.34E-01	3.06E+00	3.66E+00	positive	-1.08E+01	1.76E+01	2.10E+01	positive	MW-51-135
MW-51-163	008	1/20/2009	11:44	4.60E+01	1.30E+02	1.48E+02	1.00E+03	-1.98E-01	4.97E-01	6.98E-01	2.00E+00	-9.70E-01	3.14E+00	3.27E+00	positive	-7.70E-02	3.24E+00	3.54E+00	positive	-1.01E+01	1.80E+01	2.14E+01	positive	MW-51-163
MW-51-189	008	1/20/2009	11:33	3.32E+01	1.30E+02	1.48E+02	1.00E+03	-2.14E-01	3.45E-01	5.59E-01	2.00E+00	-2.05E+00	3.48E+00	3.62E+00	positive	1.91E+00	3.32E+00	4.20E+00	positive	-8.33E+00	1.79E+01	2.11E+01	positive	MW-51-189
MW-53-82	010	1/26/2009	12:00	4.26E+03	3.06E+02	1.92E+02	1.96E+03	2.30E+00	1.07E+00	9.76E-01	2.00E+00	1.10E+00	3.96E+00	4.51E+00	positive	-2.25E-01	3.59E+00	3.88E+00	positive	8.04E+00	1.64E+01	1.84E+01	positive	MW-53-82
MW-53-120	013	1/26/2009	12:43	5.06E+03	3.26E+02	1.92E+02	1.19E+04	2.64E+01	2.37E+00	7.50E-01	6.38E+01	-3.60E-01	4.53E+00	5.10E+00	positive	2.32E+00	4.34E+00	5.39E+00	positive	1.27E+01	2.22E+01	2.49E+01	4.54E+01	MW-53-120
MW-54-37	008	2/3/2009	15:34	1.16E+03	1.86E+02	1.64E+02	2.07E+03	5.93E+00	1.16E+00	6.66E-01	1.22E+01	1.70E+00	3.33E+00	3.92E+00	positive	-1.15E+00	3.24E+00	3.14E+00	positive	-3.14E+00	2.16E+01	2.50E+01	positive	MW-54-37
MW-54-58	008	2/3/2009	14:53	6.82E+02	1.71E+02	1.66E+02	1.33E+03	1.98E+00	8.52E-01	7.24E-01	7.37E+00	9.58E-01	2.78E+00	3.29E+00	positive	4.22E-01	2.94E+00	3.39E+00	positive	-3.05E+00	1.95E+01	2.27E+01	positive	MW-54-58
MW-54-123	008	2/3/2009	11:55	5.31E+02	1.64E+02	1.64E+02	1.21E+03	5.91E+00	1.15E+00	5.70E-01	1.76E+01	9.03E-01	3.03E+00	3.59E+00	positive	5.33E-02	3.09E+00	3.52E+00	positive	9.09E-01	2.00E+01	2.30E+01	positive	MW-54-123
MW-54-144	008	2/3/2009	12:41	1.13E+03	2.03E+02	1.77E+02	2.41E+03	1.44E+01	1.76E+00	6.51E-01	3.42E+01	-5.38E-03	3.15E+00	3.46E+00	positive	-2.00E-02	2.91E+00	3.20E+00	positive	2.21E+00	2.37E+01	2.76E+01	positive	MW-54-144
MW-54-173	008	2/3/2009	12:19	1.98E+03	5.45E+02	3.85E+02	3.83E+03	1.02E+01	1.45E+00	5.93E-01	2.77E+01	-1.52E+00	3.03E+00	3.08E+00	positive	-2.37E+00	3.20E+00	2.94E+00	positive	4.01E+00	2.37E+01	2.76E+01	positive	MW-54-173
MW-54-190	008	2/3/2009	12:35	1.43E+03	4.88E+02	3.80E+02	3.39E+03	1.90E+01	1.85E+00	3.85E-01	4.70E+01	-1.18E+00	3.48E+00	3.74E+00	positive	7.39E-01	3.08E+00	3.70E+00	positive	-5.10E+00	2.37E+01	2.84E+01	positive	MW-54-190
MW-55-24	009	2/11/2009	12:55	1.04E+03	4.49E+02	3.84E+02	2.19E+03	1.69E+01	1.74E+00	3.85E-01	4.06E+01	1.90E+00	2.88E+00	3.50E+00	positive	1.35E+00	3.14E+00	3.76E+00	positive	-1.21E+01	2.45E+01	2.99E+01	positive	MW-55-24
MW-55-35	008	2/4/2009	13:46	8.53E+02	4.28E+02	3.84E+02	3.77E+03	1.71E+01	1.82E+00	4.39E-01	5.75E+01	1.01E+00	3.14E+00	3.69E+00	positive	1.58E-01	2.78E+00	3.15E+00	positive	8.49E-01	2.30E+01	2.69E+01	positive	MW-55-35
MW-55-54	009	2/4/2009	12:42	7.33E+03	9.09E+02	3.82E+02	1.38E+04	2.11E+01	2.01E+00	3.69E-01	4.61E+01	-3.34E-01	3.11E+00	3.46E+00	positive	-3.64E-01	3.35E+00	3.69E+00	positive	5.24E+00	2.34E+01	2.70E+01	positive	MW-55-54
MW-58-26	007	2/3/2009	12:49	5.19E+02	2.36E+02	1.98E+02	1.00E+03	-8.35E-03	5.27E-01	6.83E-01	2.00E+00	1.40E+00	2.76E+00	3.29E+00	positive	1.45E-01	3.09E+00	3.31E+00	positive	NA	NA	NA	positive	MW-58-26
MW-58-65	007	2/3/2009	12:05	2.75E+02	2.03E+02	1.98E+02	1.00E+03	6.60E-01	8.00E-01	8.56E-01	2.00E+00	-8.45E-01	3.21E+00	3.41E+00	positive	1.91E+00	3.09E+00	3.89E+00	positive	NA	NA	NA	positive	MW-58-65
MW-60-35	008	2/9/2009	16:12	2.00E+02	1.83E+02	1.98E+02	2.00E+03	3.81E-01	8.27E-01	9.42E-01	2.00E+00	-1.20E+00	3.09E+00	3.19E+00	positive	-3.23E-01	3.00E+00	3.22E+00	positive	-3.26E+00	2.39E+01	2.82E+01	positive	MW-60-35
MW-60-53	008	2/9/2009	11:28	1.31E+02	1.79E+02	1.98E+02	2.00E+03	4.81E-01	8.09E-01	9.06E-01	2.00E+00	-1.28E+00	3.80E+00	3.55E+00	positive	5.34E-01	2.78E+00	3.22E+00	positive	-1.24E+00	2.43E+01	2.85E+01	positive	MW-60-53
MW-60-72	008	2/9/2009	11:25	1.67E+02	1.55E+02	1.69E+02	2.00E+03	-4.16E-01	7.19E-01	9.60E-01	2.00E+00	-6.54E-01	3.00E+00	3.30E+00	positive	7.83E-01	3.09E+00	3.69E+00	positive	-9.25E+00	2.24E+01	2.66E+01	positive	MW-60-72
MW-60-135	008	2/9/2009	12:04	3.83E+02	1.67E+02	1.69E+02	2.00E+03	5.52E-01	5.96E-01	6.39E-01	2.00E+00	1.42E+00	2.96E+00	3.48E+00	positive	4.24E-01	3.05E+00	3.35E+00	positive	3.74E+00	2.27E+01	2.58E+01	positive	MW-60-135
MW-60-154	008	2/9/2009	12:23	4.15E+02	1.65E+02	1.67E+02	2.00E+03	4.63E-01	7.98E-01	8.96E-01	2.00E+00	7.14E-01	3.02E+00	3.45E+00	positive	1.01E+00	3.54E+00	4.13E+00	positive	-3.74E+00	2.09E+01	2.42E+01	positive	MW-60-154
MW-60-176	008	2/9/2009	13:08	9.16E+02	1.91E+02	1.70E+02	2.00E+03	4.25E-01	6.80E-01	7.58E-01	2.00E+00	-2.42E-01	3.27E+00	3.56E+00	positive	5.10E-01	3.29E+00	3.74E+00	positive	-1.22E+01	2.06E+01	2.44E+01	positive	MW-60-176
MW-62-18	008	1/23/2009	11:55	4.64E+02	1.39E+02	1.07E+02	2.00E+03	1.09E+00	6.47E-01	6.00E-01	2.00E+00	9.88E-01	2.55E+00	3.06E+00	positive	-3.42E-01	2.48E+00	2.74E+00	positive	NA	NA	NA	positive	MW-62-18
MW-62-37	008	1/23/2009	12:20	4.87E+02	1.42E+02	1.08E+02	2.00E+03	1.28E-01	7.41E-01	9.02E-01	2.00E+00	-7.69E-01	3.12E+00	3.43E+00	positive	-6.49E-01	3.14E+00	3.36E+00	positive	NA	NA	NA	positive	MW-62-37
MW-62-53	007	1/23/2009	12:44	3.56E+02	2.16E+02	2.08E+02	2.00E+03	4.53E-01	7.68E-01	8.60E-01	2.00E+00	2.27E-01	3.30E+00	3.77E+00	positive	-1.27E+00	3.56E+00	3.71E+00	positive	NA	NA	NA	positive	MW-62-53
MW-62-71	008	1/23/2009	12:12	2.99E+02	2.07E+02	2.04E+02	2.00E+03	2.47E-01	7.35E-01	8.56E-01	2.00E+00	1.92E+00	3.53E+00	4.25E+00	positive	-4.84E-01	3.87E+00	4.22E+00	positive	NA	NA	NA	positive	MW-62-71

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See Page 2 for Notes

TABLE 4
2009 1ST QUARTER
GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERTY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE COLLECTION		ANALYSIS RESULTS																				Well ID
				TRITIUM (pCi/L)				Sr-90 (pCi/L)				Cs-137 (pCi/L)				Co-60 (pCi/L)				Ni-63 (pCi/L)				
		Date	Time	Result	Std. Dev.	MDC	I.L.[3]	Result	Std. Dev.	MDC	I.L.	Result	Std. Dev.	MDC	I.L.	Result	Std. Dev.	MDC	I.L.	Result	Std. Dev.	MDC	I.L.	
MW-62-92	008	1/23/2009	12:28	5.25E+02	2.33E+02	2.05E+02	2.00E+03	-1.59E-01	6.86E-01	8.73E-01	2.00E+00	2.90E-01	4.58E+00	4.83E+00	positive	1.88E+00	3.83E+00	4.74E+00	positive	NA	NA	NA	positive	MW-62-92
MW-62-138	008	1/23/2009	12:50	6.26E+02	2.43E+02	2.04E+02	2.00E+03	2.46E+00	8.27E-01	6.23E-01	2.00E+00	-4.23E-01	2.40E+00	2.67E+00	positive	5.99E-01	2.24E+00	2.64E+00	positive	NA	NA	NA	positive	MW-62-138
MW-62-182	008	1/23/2009	13:49	4.98E+02	2.28E+02	2.03E+02	2.00E+03	-1.85E-01	4.56E-01	6.98E-01	2.00E+00	-1.91E+00	2.55E+00	2.68E+00	positive	-1.03E+00	2.43E+00	2.55E+00	positive	NA	NA	NA	positive	MW-62-182
MW-63-18	008	1/29/2009	13:46	1.54E+02	1.85E+02	1.98E+02	2.00E+03	-2.22E-01	6.74E-01	8.57E-01	2.00E+00	9.78E-02	2.64E+00	3.01E+00	positive	1.02E+00	3.20E+00	3.87E+00	positive	NA	NA	NA	positive	MW-63-18
MW-63-34	008	1/29/2009	12:22	4.20E+02	2.22E+02	1.96E+02	2.00E+03	2.20E-01	6.87E-01	8.13E-01	2.00E+00	1.41E+00	2.91E+00	3.45E+00	positive	-2.64E-01	2.96E+00	3.23E+00	positive	NA	NA	NA	positive	MW-63-34
MW-63-50	008	1/29/2009	14:06	2.98E+02	2.04E+02	1.96E+02	2.00E+03	5.67E-01	8.00E-01	8.76E-01	2.00E+00	8.89E-02	3.09E+00	3.51E+00	positive	1.37E+00	3.41E+00	4.19E+00	positive	NA	NA	NA	positive	MW-63-50
MW-63-93	009	1/29/2009	14:20	3.40E+02	2.09E+02	1.93E+02	2.00E+03	1.18E-01	6.33E-01	7.75E-01	2.00E+00	-9.44E-01	3.17E+00	3.42E+00	positive	-8.17E-01	3.63E+00	3.88E+00	positive	NA	NA	NA	positive	MW-63-93
MW-63-112	008	1/30/2009	14:39	4.37E+02	2.21E+02	1.97E+02	2.00E+03	2.43E-02	7.80E-01	9.24E-01	2.00E+00	-1.10E+00	2.81E+00	2.86E+00	positive	1.77E+00	3.41E+00	4.13E+00	positive	NA	NA	NA	positive	MW-63-112
MW-63-121	008	1/30/2009	14:41	6.23E+02	2.42E+02	1.97E+02	2.00E+03	7.30E-01	5.09E-01	4.47E-01	2.00E+00	1.91E+00	3.18E+00	3.92E+00	positive	9.14E-01	2.84E+00	3.45E+00	positive	NA	NA	NA	positive	MW-63-121
MW-63-163	008	1/29/2009	11:57	5.81E+02	2.40E+02	1.95E+02	2.00E+03	2.86E-01	5.64E-01	6.42E-01	2.00E+00	5.82E+00	7.23E+00	3.42E+00	positive	-1.73E-01	2.81E+00	3.03E+00	positive	NA	NA	NA	positive	MW-63-163
MW-63-174	008	1/29/2009	11:55	4.92E+02	2.28E+02	1.97E+02	2.00E+03	4.27E-01	5.96E-01	6.57E-01	2.00E+00	-4.53E-01	3.81E+00	3.67E+00	positive	-1.34E+00	3.29E+00	3.32E+00	positive	NA	NA	NA	positive	MW-63-174
MW-66-21[7]	007	1/27/2009	13:52	4.61E+02	1.74E+02	1.75E+02	1.54E+03	2.91E-01	7.50E-01	8.72E-01	2.02E+00	8.99E+00	5.45E+00	3.11E+00	positive	-1.87E+00	2.90E+00	2.71E+00	positive	1.29E+01	1.74E+01	1.93E+01	positive	MW-66-21
MW-66-36	007	1/27/2009	13:07	3.65E+03	7.62E+02	4.41E+02	1.19E+04	1.22E+01	1.56E+00	6.15E-01	2.71E+01	-1.04E+00	2.88E+00	3.06E+00	positive	6.35E-02	3.27E+00	3.72E+00	positive	1.45E+01	1.70E+01	1.87E+01	positive	MW-66-36
MW-67-39	008	1/27/2009	16:15	3.67E+03	2.91E+02	1.92E+02	7.48E+03	1.42E+01	1.71E+00	7.62E-01	3.36E+01	-8.03E-01	2.04E+00	2.15E+00	positive	-1.11E-01	2.06E+00	2.25E+00	positive	1.12E+01	1.68E+01	1.87E+01	positive	MW-67-39
MW-67-105	007	1/27/2009	16:45	1.96E+03	2.42E+02	1.92E+02	4.95E+03	4.08E-01	8.30E-01	9.49E-01	2.14E+00	-1.13E+00	3.32E+00	2.71E+00	positive	-3.40E-02	2.39E+00	2.66E+00	positive	1.21E+01	1.64E+01	1.81E+01	positive	MW-67-105
MW-67-173[7]	007	1/27/2009	16:33	7.57E+02	2.00E+02	1.92E+02	1.90E+03	4.35E-01	5.94E-01	6.32E-01	2.00E+00	1.34E+01	4.85E+00	2.53E+00	positive	-1.24E+00	2.58E+00	2.73E+00	positive	1.48E+01	1.79E+01	1.96E+01	positive	MW-67-173
MW-67-219	007	1/27/2009	12:34	9.68E+02	2.81E+02	2.50E+02	2.51E+03	-7.56E-02	5.30E-01	7.13E-01	2.00E+00	-3.58E-01	1.89E+00	2.10E+00	positive	7.86E-02	1.83E+00	2.09E+00	positive	1.14E+01	2.16E+01	2.43E+01	positive	MW-67-219
MW-67-276	007	1/27/2009	13:01	1.10E+03	5.12E+02	4.39E+02	2.27E+03	3.32E-01	5.93E-01	6.66E-01	2.00E+00	2.35E-01	3.24E+00	3.70E+00	positive	-1.19E+00	3.74E+00	3.96E+00	positive	1.15E+01	1.68E+01	1.87E+01	positive	MW-67-276
MW-67-323	007	1/27/2009	13:50	3.65E+02	1.70E+02	1.76E+02	1.00E+03	-1.15E-01	4.05E-01	5.85E-01	2.00E+00	4.74E-01	3.86E+00	4.42E+00	positive	3.47E-01	3.38E+00	3.86E+00	positive	9.84E+00	1.32E+01	1.47E+01	positive	MW-67-323
MW-67-340	007	1/27/2009	12:44	5.23E+02	4.37E+02	4.39E+02	1.11E+03	2.57E-01	5.48E-01	6.31E-01	2.00E+00	4.72E-01	3.72E+00	4.19E+00	positive	-4.00E-01	3.41E+00	3.67E+00	positive	7.78E+00	1.68E+01	1.90E+01	positive	MW-67-340
U3-4D	019	2/10/2009	14:15	4.82E+02	2.31E+02	1.97E+02	1.00E+03	1.00E-01	5.16E-01	6.41E-01	2.00E+00	3.86E-01	2.66E+00	3.00E+00	positive	7.53E-01	3.02E+00	3.39E+00	positive	NA	NA	NA	positive	U3-4D
U3-T1	023	1/28/2009	12:00	6.75E+02	2.48E+02	2.04E+02	1.28E+03	1.04E+00	7.47E-01	7.44E-01	2.00E+00	-1.53E+00	3.59E+00	2.95E+00	positive	-6.63E-01	2.30E+00	2.48E+00	positive	NA	NA	NA	positive	U3-T1
U3-T2	028	1/28/2009	11:40	1.11E+03	2.87E+02	2.04E+02	2.14E+03	6.04E-01	6.41E-01	6.75E-01	2.00E+00	7.10E-01	2.42E+00	2.74E+00	positive	4.09E-01	2.30E+00	2.61E+00	positive	NA	NA	NA	positive	U3-T2
U1-NCD	003	1/12/2009	13:45	2.13E+03	2.48E+02	1.92E+02	1.00E+03	4.64E+02	8.90E+00	6.61E-01	2.00E+00	2.84E+04	2.63E+03	1.22E+01	positive	7.66E-01	2.37E+00	2.80E+00	positive	6.41E+02	4.11E+01	1.89E+01	positive	U1-NCD
U1-SFDS	004	1/14/2009	9:15	3.11E+02	1.82E+02	1.93E+02	1.00E+03	1.22E+01	1.67E+00	8.15E-01	2.00E+00	6.39E+00	3.47E+00	2.22E+00	positive	1.03E+00	1.91E+00	2.27E+00	positive	7.26E+00	1.62E+01	1.83E+01	positive	U1-SFDS

Notes

1 For nested multi-level monitoring wells, suffix of well ID indicates depth (rounded to nearest foot) from reference point on casing to bottom of well screen For Waterloo multi-level systems, suffix indicates depth (rounded to nearest foot) from reference point on casing to top of sampling port
Well IDs without a suffix are open bedrock wellbores
2 Sampling depths within sampling intervals (location of pump intake) have been established at location of most transmissive zone to the extent possible
3 I L s (Investigation Levels) are predetermined detection limits assigned to each sampling location which, if reached or exceeded, require further investigation or action I L s presented here are established for 2009 based on 2008 averages Positive detections indicate that the the result is greater than MDC and greater than or equal to 3 times the 1 sigma uncertainty
4 NA indicates that the constituent was not analyzed
5 Dot pattern denotes sampling interval is positioned within overburden soils Open box indicates sampling interval is in bedrock
6 Shading indicates that the sample result exceeds the Investigation Level
7 Due to unexpectedly high levels of Cs-137 detected in the original set of the First Quarter 2009 samples collected from MW-66-21 and MW-67-173, a second set of samples were collected and analyzed The re-analyzed samples had results below MDC and below three times the 1 sigma uncertainty (not positive) for Cs-137 at these intervals, suggesting that the first set of results do not appropriately characterize activity at these intervals

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS																Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)				
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC		
MW-30-69	001	69.3	6.4	1/30/2006	15:40	2.37E+05	2.76E+04	6.26E+02	NA[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		MW-30-69
	003	69.3	6.4	6/23/2006	10:50	3.92E+05	3.35E+04	6.02E+03	3.34E-02	8.24E-01	1.09E+00	2.96E+01	1.40E+01	1.14E+01	4.23E+00	9.93E+00	1.14E+01	1.02E+01	1.27E+01	1.36E+01		
	004	69.3	6.4	8/18/2006	14:45	2.20E+05	4.20E+03	1.10E+03	8.14E-01	1.40E+00	1.52E+00	-7.33E+00	1.40E+01	1.41E+01	3.91E+00	1.51E+01	1.78E+01	NA	NA	NA		
	005	69.3	6.4	11/29/2006	10:45	1.06E+05	1.86E+03	5.30E+02	2.50E+00	8.40E-01	8.10E-01	3.13E+03	3.30E+01	5.00E+00	1.20E+00	2.28E+00	2.50E+00	1.15E+01	1.26E+01	1.40E+01		
	006	69.3	6.4	1/16/2007	14:05	8.17E+04	8.73E+03	6.34E+02	-1.60E-01	1.47E+00	1.60E+00	0.00E+00	2.10E+00	2.40E+00	-4.30E-01	2.07E+00	2.50E+00	7.07E+00	1.94E+01	2.20E+01		
	007	69.3	6.4	6/12/2007	10:20	2.97E+05	8.73E+03	6.34E+02	-2.63E-01	4.19E-01	6.45E-01	3.93E-01	3.75E+00	4.09E+00	6.88E-02	4.08E+00	3.94E+00	NA	NA	NA		
	008	69.3	6.4	7/18/2007	9:55	8.21E+04	2.46E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	010	69.3	6.4	8/1/2007	11:44	1.03E+05	3.09E+03	6.40E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	011	69.3	6.4	8/8/2007	10:00	9.96E+04	2.99E+03	6.32E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	012	69.3	6.4	8/15/2007	11:00	2.33E+05	6.99E+03	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	013	69.3	6.4	8/21/2007	9:45	1.07E+05	3.21E+03	7.05E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	014	69.3	6.4	8/30/2007	11:32	9.80E+04	2.94E+03	7.03E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	015	69.3	6.4	9/19/2007	11:00	9.20E+04	2.76E+03	7.02E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	016	69.3	6.4	10/23/2007	11:48	1.32E+05	3.90E+03	4.24E+02	2.52E-01	6.16E-01	7.12E-01	2.42E+00	5.76E+00	4.45E+00	-5.09E-01	3.66E+00	3.86E+00	NA	NA	NA		
	017	69.3	6.4	2/4/2008	13:00	1.87E+05	5.51E+03	3.95E+02	1.57E-01	6.98E-01	8.57E-01	1.26E+00	3.05E+00	3.56E+00	-6.00E-01	3.63E+00	3.28E+00	NA	NA	NA		
	018	69.3	6.4	5/6/2008	11:00	1.53E+05	3.01E+03	4.06E+02	3.34E-01	3.98E-01	6.71E-01	4.94E-01	1.83E+00	3.21E+00	-5.70E-01	1.71E+00	2.73E+00	NA	NA	NA		
	019	69.3	6.4	6/6/2008	11:01	7.36E+04	2.02E+03	5.06E+02	2.02E-01	3.20E-01	5.59E-01	-9.82E-01	2.10E+00	3.27E+00	4.91E-01	2.24E+00	3.85E+00	NA	NA	NA		
	020	69.3	6.4	8/5/2008	11:22	1.99E+05	3.92E+03	4.95E+02	2.09E-01	3.07E-01	5.34E-01	-1.57E-01	1.42E+00	2.38E+00	1.11E+00	1.28E+00	2.33E+00	NA	NA	NA		
	021	69.3	6.4	9/3/2008	11:29	8.53E+04	2.03E+03	5.50E+02	-3.12E-01	5.12E-01	9.72E-01	-1.89E+00	2.22E+00	3.36E+00	NA	NA	NA	NA	NA	NA		
	022	69.3	6.4	11/7/2008	10:27	9.55E+04	2.85E+03	3.06E+02	4.09E-01	5.53E-01	6.01E-01	7.83E-01	3.09E+00	3.66E+00	-1.07E-01	2.65E+00	2.85E+00	NA	NA	NA		
	023	69.3	6.4	1/30/2009	11:00	1.07E+05	2.51E+03	1.98E+02	-8.74E-02	7.58E-01	9.73E-01	-1.13E+00	2.61E+00	2.66E+00	1.06E+00	2.70E+00	3.24E+00	NA	NA	NA		
MW-30-84	001	83.8	-8.1	8/22/2006	13:15	1.25E+04	2.43E+03	1.61E+03	-1.60E-01	9.82E-01	1.13E+00	1.88E+00	1.09E+01	1.24E+01	-2.52E+00	1.00E+01	1.03E+01	NA	NA	NA		MW-30-84
	002	83.8	-8.1	11/29/2006	14:30	1.01E+04	1.59E+03	1.10E+03	-9.40E-01	7.80E-01	8.70E-01	2.94E+02	1.68E+01	5.00E+00	-3.00E-01	3.90E+00	4.80E+00	4.10E+00	1.17E+01	1.30E+01		
	003	83.8	-8.1	1/17/2007	9:45	7.33E+03	7.50E+02	5.30E+02	4.80E-01	1.50E+00	1.60E+00	1.18E+00	2.61E+00	2.90E+00	0.00E+00	2.91E+00	3.40E+00					
	004	83.8	-8.1	6/12/2007	10:19	7.79E+03	9.47E+02	4.42E+02	-1.49E-01	4.44E-01	6.41E-01	-1.06E+00	2.29E+00	2.41E+00	-6.93E-01	2.38E+00	2.54E+00	-3.57E+00	1.74E+01	2.03E+01		
	005	83.8	-8.1	7/18/2007	10:25	4.80E+03	7.20E+02	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
	006	83.8	-8.1	7/25/2007	13:00	5.02E+03	4.49E+02	2.43E+02	1.56E-01	3.09E-01	3.48E-01	2.83E+00	3.38E+00	2.84E+00	2.03E+00	2.91E+00	3.57E+00	NA	NA	NA		
	007	83.8	-8.1	10/23/2007	12:49	4.27E+03	7.38E+02	4.03E+02	5.95E-01	5.53E-01	5.59E-01	1.56E+00	2.81E+00	3.38E+00	-1.17E+00	3.72E+00	3.27E+00	NA	NA	NA		
	008	83.8	-8.1	2/4/2008	14:16	4.34E+03	2.61E+02	1.32E+02	-4.08E-01	4.55E-01	7.47E-01	-1.00E+00	2.55E+00	2.73E+00	-4.32E-01	2.97E+00	2.79E+00	NA	NA	NA		
	009	83.8	-8.1	5/6/2008	13:40	4.18E+03	2.83E+02	2.20E+02	3.26E-01	3.86E-01	6.51E-01	4.43E-01	2.37E+00	4.00E+00	-1.91E+00	2.53E+00	3.69E+00	NA	NA	NA		
	010	83.8	-8.1	6/6/2008	12:10	3.85E+03	5.33E+02	5.04E+02	1.54E-01	2.46E-01	4.34E-01	-8.97E-01	2.16E+00	3.57E+00	2.05E+00	2.31E+00	4.29E+00	NA	NA	NA		
	020	83.8	-8.1	8/5/2008	14:40	4.31E+03	2.28E+02	1.94E+02	2.77E-01	2.86E-01	4.67E-01	-1.87E-01	1.44E+00	2.35E+00	-1.04E-01	2.12E+00	2.66E+00	NA	NA	NA		
	021	83.8	-8.1	9/3/2008	11:59	3.78E+03	5.13E+02	5.35E+02	-4.62E-02	4.61E-01	9.06E-01	-3.02E-01	1.73E+00	2.89E+02	NA	NA	NA	NA	NA	NA		
	013	83.8	-8.1	11/7/2008	10:50	5.25E+03	3.23E+02	1.64E+02	1.07E-02	5.75E-01	7.61E-01	6.64E-01	4.63E+00	5.37E+00	2.13E+00	5.34E+00	6.53E+00	NA	NA	NA		
	014	83.8	-8.1	1/30/2009	11:21	4.69E+03	5.48E+02	1.99E+02	9.38E-02	5.97E-01	7.19E-01	8.97E+00	4.34E+00	3.02E+00	-8.43E-02	3.39E+00	3.81E+00	NA	NA	NA		
MW-31-49	001	48.8	26.8	11/27/2006	11:45	2.98E+02	1.74E+02	1.70E+02	0.00E+00	1.29E+00	1.40E+00	NA	NA	NA	1.30E+00	3.60E+00	4.00E+00	1.42E+02	1.65E+02	1.80E+02		MW-31-49
	002	48.8	26.8	1/18/2007	9:13	1.20E+03	5.70E+02	5.30E+02	3.00E-01	1.62E+00	1.80E+00	NA	NA	NA	-2.10E+00	8.10E+00	9.50E+00	NA	NA	NA		
	003	48.8	26.8	6/12/2007	14:24	1.48E+03	5.24E+02	4.37E+02	-1.51E-01	5.49E-01	7.52E-01	1.83E-01	2.12E+00	2.35E+00	1.26E-01	2.01E+00	2.26E+00	0.00E+00	1.11E+01	1.29E+01		
	004	48.8	26.8	8/2/2007	10:23	1.19E+04	1.27E+03	5.43E+02	-5.17E-01	7.89E-01	9.55E-01	8.83E+01	1.35E+01	3.31E+00	1.80E-01	3.63E+00	4.11E+00	NA	NA	NA		
	005	48.8	26.8	9/11/2007	13:10	6.98E+03	3.27E+02	1.59E+02	-2.26E-01	4.23E-01	6.01E-01	-1.20E+00	3.04E+00	3.24E+00	0.00E+00	4.96E+00	4.75E+00	NA	NA	NA		
	006	48.8	26.8	10/24/2007	15:50	8.77E+03	9.99E+02	4.00E+02	5.14E-02	4.26E-01	5.36E-01	-6.76E-01	3.94E+00	3.57E+00	1.35E+00	3.21E+00	3.52E+00	NA	NA	NA		
	007	48.8	26.8	1/16/2008	10:31	3.97E+02	1.94E+02	1.77E+02	-9.14E-02	6.86E-01	8.97E-01	-1.17E+00	4.74E+00	5.07E+00	-9.76E-01	4.41E+00	4.65E+00	NA	NA	NA		
	009	48.8	26.8	6/6/2008	15:05	3.04E+04	1.34E+03	4.69E+02	2.83E-01	3.39E-01	5.72E-01	1.11E+00	1.93E+00	3.47E+00	1.72E+00	2.01E+00	3.82E+00	NA	NA	NA		
	010	48.8	26.8	8/7/2008	12:43	5.94E+02	1.33E+02	1.92E+02	2.39E-01	2.67E-01	4.43E-01	7.07E-01	1.30E+00	2.23E+00	7.08E-01	1.49E+00	2.56E+00	NA	NA	NA		
	011	48.8	26.8	8/30/2008	11:55	1.36E+04	8.61E+02	5.53E+02	4.16E-01	4.80E-01	8.06E-01	1.27E+00	3.63E+00	3.09E+00	NA	NA	NA	NA	NA	NA		
	012	48.8	26.8	10/30/2008	11:30	6.43E+02	2.25E+02	1.71E+02	7.64E-02	1.71E-01	1.93E-01	1.39E+00	6.27E+00	7.25E+00	-9.09E-01	6.40E+00	6.88E+00	NA	NA	NA		
	013	48.8	26.8	11/18/2008	11:15	7.77E+02	1.79E+02	1.62E+02	4.11E-01	6.30E-01	6.97E-01	1.21E+00	4.18E+00	5.03E+00	9.78E-01	4.93E+00	5.84E+00	NA	NA	NA		
	014	48.8	26.8	2/6/2009	11:05	1.11E+04	7.86E+02	1.99E+02	1.18E-01	3.00E-01	3.57E-01	-1.67E-01	2.97E+00	3.35E+00	-4.61E-01	2.85E+00	3.14E+00	NA	NA	NA		
MW-31-63	001	63.3	12.3	11/27/2006	12:10	6.89E+03	1.44E+03	1.10E+03	5.30E-01	1.26E+00	1.40E+00	1.99E+02	9.60E+00	3.60E+00	6.80E-01	2.94E+00	3.40E+00	4.10E+01	1.17E+02	1.30E+02		MW-31-63
	002	63.3	12.3	1/18/2007	9:25	1.41E+04	9.00E+02	5.20E+02	-6.50E-01	1.50E+00	1.70E+00	-4.00E-01	3.00E+00	3.50E+00	-4.50E-01	2.91E+00	3.50E+00	NA	NA	NA		
	003	63.3	12.3	6/12/2007	14:20	5.00E+03	7.85E+02	4.38E+02	4.72E-01	6.36E-01	6.78E-01	-5.01E-01	1.92E+00	2.09E+00	-8.78E-02	1.97E+00	2.20E+00	3.37E+00	1.89E+01	2.17E+01		
	004	63.3	12.3	8/2/2007	11:15	4.06E+04	2.27E+03	5.53E+02	-1.41E-01	7.84E-01	9.53E-01	1.20E+00	3.56E+00	4.18E+00	-3.09E-02	4.41E+00	4.23E+00	NA	NA	NA		
	005	63.3	12.3	9/11/2007	13:25	3.77E+04	1.13E+03	2.20E+02	-1.37E-01	4.52E-01	6.15E-01	-4.39E-01	3.51E+00	3.80E+00	-8.64E-01	3.92E+00	3.44E+00	NA	NA	NA		
	006	63.3	12.3	10/24/2007	14:55	3.58E+04	1.94E+03	4.00E+02	-1.63E-01	4.58E-01	6.34E-01	1.07E+00	5.31E+00	4.01E+00	1.01E+00	3.40E+00	4.11E+00	NA	NA	NA		
	007	63.3	12.3	1/16/2008	11:32	1.24E+04	7.35E+02	1.80E+02	-6.88E-02	5.34E-01	7.44E-01	-2.49E-01	4.04E+00	4.40E+00	-9.08E-01	4.19E+00	4.32E+00	NA	NA	NA		
	009	63.3	12.3	6/6/2008	16:16	1.02E+04	7.92E+02	5.04E+02	1.44E-01	3.40E-01	6.17E-01	-1.15E+00	2.11E+00	3.36E+00	2.47E+00	2.31E+00	4.45E+00	NA	NA	NA		
	010	63.3	12.3	8/7/2008	11:22	1.76E+04	4.17E+02	1.94E+02	-2.12E-01	2.61E-01	5.89E-01	-1.86E-01	1.28E+00	2.16E+00	3.73E-01	1.43E+00	2.49E+00	NA	NA	NA		
	011	63.3	12.3	8/30/2008	12:34	2.21E+04	1.07E+03	5.49E+02	-6.34E-01	4.35E-01	9.79E-01	3.76E-01	2.35E+00	4.04E+00	NA	NA	NA	NA	NA	NA		
	012	63.3	12.3	10/30/2008	12:14	2.30E+04	1.08E+03	1.73E+02	2.28E-01	2.33E-01	2.52E-01	2.21E+00	6.18E+00	7.37E+00	-1.47E+00	7.26E+00	7.77E+00	NA	NA	NA		
	013	63.3	12.3	11/18/2008	11:58	2.55E+04	8.07E+02	1.84E+02	3.95E-01	7.40E-01	8.36E-01	1.02E-02	5.89E+00	6.01E+00	-5.18E-01	6.54E+00	6.97E+00	NA	NA	NA		
	014	63.3	12.3	2/6/2009	11:53	1.28E+04	8.39E+02	1.97E+02	6.43E-01	6.42E-01	6.82E-01	-1.32E+00	3.42E+00	3.63E+00	-7.48E-01	3.86E+00	4.17E+00	NA	NA	NA		
MW-31-85	001	84.8	-9.2	11/27/2006	12:20	4.62E+02	1.74E+02	1.70E+02	1.50E-01	1.44E+00	1.60E+00	1.52E+02	8.40E+00	3.20E+00	2.10E-01	2.19E+00	2.50E+00	2.20E+01	9.30E+01	1.00E+02		MW-31-85
	002	84.8	-9.2	1/18/2007	9:16	2.66E+03	6.00E+02	5.20E+02	-5.90E-01	1.59E+00	1.80E+00	-4.90E+00	8.70E+00	1.00E+01	-6.00E-01	8.70E+00	1.00E+01	8.35E+00	2.11E+01	2.39E+01		
	003	84.8	-9.2	6/12/2007	14:05	3.17E+02	1.62E+02	1.69E+02	-3.83E-01	6.62E-01	9.31E-01	3.95E-01	2.76E+00	1.91E+00	-5.71E-01	1.69E+00	1.83E+00	NA	NA	NA		
	004	84.8	-9.2	8/2/2007	10:58	2.69E+03	7.11E+02	5.31E+02	-7.29E-01	6.31E-01	9.31E-01	-5.01E-02	3.29E+00	3.59E+00	-1.90E+00	3.35E+00	3.31E+00	NA	NA	NA		
	005	84.8	-9.2	9/11/2007	13:20	4.32E+03	3.32E+02	1.82E+02	6.86E-01	7.48E-01	7.93E-01	-7.04E-01	3.04E+00	3.26E+00	-3.07E+00	3.68E+00	3.24E+00	NA	NA	NA		
	006	84.8	-9.2	10/24/2007	14:40	5.51E+03	8.15E+02	3.98E+02	2.53E-01	4.08E-01	4.51E-01	5.68E-01	2.90E+00	3.38E+00	4.76E-01	2.75E+00	3.19E+00	NA	NA	NA		
	007	84.8	-9.2	1/16/2008	11:26	1.31E+03	2.81E+02	1.84E+02	6.97E-01	7.67E-01	7.79E-01	2.68E+00	4.05E+00	4.83E+00	1.90E+00	3.80E+00	4.62E+00	NA	NA	NA		
	009	84.8	-9.2	6/6/2008	15:26	5.95E+03	6.30E+02	5.05E+02	1.52E-01	3.17E-01	5.69E-01	-8.07E-01	2.20E+00	3.45E+00	1.91E+00	2.45E+00	4.58E+00	NA	NA	NA		
	010	84.8	-9.2	8/7/2008	11:13	2.30E+03	1.83E+02	1.94E+02	1.07E-01	2.87E-01	5.30E-01	-6.47E-01	1.22E+00	1.94E+00	1.63E-02	1.31E+00	2.18E+00	NA	NA	NA		
	011	84.8	-9.2	8/30/2008	12:08	8.34E+03	7.00E+02	5.52E+02	4.46E-01	4.87E-01	8.10E-01	-5.50E-01	1.86E+00	3.07E+00	NA	NA	NA	NA	NA	NA		

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	012	84.8	-9.2	10/30/2008	12:09	3.89E+03	4.52E+02	1.67E+02	4.08E-01	7.33E-01	8.25E-01	-5.63E+00	6.17E+00	4.73E+00	-4.82E+00	6.98E+00	6.56E+00	NA	NA	NA	
	013	84.8	-9.2	11/18/2008	12:00	4.41E+03	2.97E+02	1.61E+02	-2.44E-01	5.37E-01	8.11E-01	2.13E+00	3.79E+00	4.76E+00	2.84E+00	3.82E+00	5.19E+00	NA	NA	NA	
	014	84.8	-9.2	2/6/2009	11:22	7.37E+03	6.54E+02	2.02E+02	3.89E-01	5.58E-01	6.16E-01	1.22E+00	3.50E+00	4.06E+00	1.09E+00	3.57E+00	4.23E+00	NA	NA	NA	
MW-32-59	001	60	17.1	1/19/2007	9:30	7.67E+03	7.50E+02	5.20E+02	6.30E-01	1.47E+00	1.60E+00	-8.60E-01	1.98E+00	2.30E+00	4.90E-01	2.28E+00	2.60E+00	NA	NA	NA	MW-32-59
	002	60	17.1	6/28/2007	14:25	2.40E+04	7.37E+02	1.97E+02	-1.65E-01	5.90E-01	7.97E-01	-1.74E+00	3.51E+00	3.30E+00	-1.42E+00	3.87E+00	3.34E+00	NA	NA	NA	
	003	60	17.1	8/13/2007	13:07	1.42E+04	6.00E+02	1.99E+02	-2.71E-01	5.58E-01	7.58E-01	1.48E+00	2.10E+00	3.22E+00	-4.66E-01	3.30E+00	3.65E+00	NA	NA	NA	
	001	58.8	18.3	10/26/2007	12:07	1.11E+04	4.61E+02	1.84E+02	3.22E-01	6.43E-01	7.36E-01	-1.94E-01	3.82E+00	3.87E+00	2.45E+00	3.06E+00	4.08E+00	NA	NA	NA	
	002	58.8	18.3	1/18/2008	13:25	1.87E+04	9.11E+02	1.86E+02	4.67E-01	6.96E-01	7.57E-01	9.98E-01	4.25E+00	4.79E+00	1.99E+00	3.81E+00	4.65E+00	NA	NA	NA	
	003	58.8	18.3	5/5/2008	15:33	4.15E+03	2.01E+02	1.82E+02	7.61E-02	5.20E-01	9.70E-01	-7.05E-01	1.89E+00	3.05E+00	1.25E+00	2.01E+00	3.77E+00	NA	NA	NA	
	004	58.8	18.3	6/9/2008	12:10	2.85E+03	4.81E+02	5.06E+02	-3.39E-01	3.64E-01	7.61E-01	-1.22E+00	1.94E+00	2.98E+00	-7.10E-01	2.43E+00	3.91E+00	NA	NA	NA	
	005	58.8	18.3	7/31/2008	13:23	1.54E+03	1.63E+02	1.94E+02	1.72E-01	3.81E-01	6.90E-01	4.66E-01	1.97E+00	3.33E+00	-1.08E+00	2.48E+00	3.26E+00	NA	NA	NA	
	006	58.8	18.3	9/2/2008	13:52	2.44E+03	4.59E+02	5.53E+02	2.19E-01	5.54E-01	9.94E-01	7.77E-01	1.85E+00	3.21E+00	NA	NA	NA	NA	NA	NA	
	007	58.8	18.3	10/24/2008	13:59	4.13E+02	2.00E+02	1.73E+02	1.63E-01	6.06E-01	7.44E-01	-3.50E-01	7.51E+00	7.30E+00	-1.32E+00	6.29E+00	6.66E+00	NA	NA	NA	
	008	58.8	18.3	2/4/2009	15:46	1.78E+04	1.03E+03	1.98E+02	-1.01E-01	5.73E-01	7.69E-01	1.01E-01	3.54E+00	3.41E+00	2.70E+00	3.41E+00	4.34E+00	NA	NA	NA	
MW-32-85	001	90.5	-13.4	1/19/2007	9:40	1.12E+04	8.40E+02	5.30E+02	3.20E-01	1.47E+00	1.60E+00	1.57E+00	2.82E+00	3.10E+00	9.00E-01	4.20E+00	4.80E+00	NA	NA	NA	MW-32-85
	002	90.5	-13.4	6/28/2007	15:05	5.42E+03	3.77E+02	1.95E+02	-4.15E-01	5.10E-01	6.75E-01	-1.70E-01	2.77E+00	3.03E+00	-3.05E-01	3.19E+00	3.21E+00	NA	NA	NA	
	003	90.5	-13.4	8/13/2007	10:48	5.70E+03	4.05E+02	2.01E+02	-2.45E-02	4.47E-01	5.75E-01	3.28E-01	2.81E+00	3.15E+00	9.90E-01	2.98E+00	3.53E+00	NA	NA	NA	
	004	85.3	85.3	10/26/2007	11:12	1.26E+04	4.79E+02	1.79E+02	-1.17E-01	4.27E-01	6.25E-01	8.85E-01	2.97E+00	3.45E+00	-1.85E-02	3.23E+00	3.63E+00	NA	NA	NA	
	005	85.3	85.3	1/18/2008	14:50	1.07E+04	6.90E+02	1.83E+02	-3.03E-01	4.38E-01	7.35E-01	3.57E-01	2.64E+00	2.67E+00	-5.37E-01	1.97E+00	2.13E+00	NA	NA	NA	
	006	85.3	85.3	5/5/2008	14:10	8.36E+03	2.64E+02	1.81E+02	-6.65E-02	3.89E-01	7.59E-01	1.95E+00	2.16E+00	3.96E+00	-3.64E-01	2.06E+00	3.27E+00	NA	NA	NA	
	007	85.3	85.3	6/9/2008	12:25	1.11E+04	8.21E+02	5.04E+02	-9.56E-02	3.57E-01	7.12E-01	1.39E+00	2.01E+00	3.68E+00	-5.47E-01	2.04E+00	3.34E+00	NA	NA	NA	
	008	85.3	85.3	7/31/2008	14:35	7.48E+03	2.83E+02	1.93E+02	1.16E-01	3.35E-01	6.24E-01	2.14E-01	2.06E+00	3.50E+00	1.07E+00	1.88E+00	3.43E+00	NA	NA	NA	
	009	85.3	85.3	9/2/2008	14:40	8.05E+03	6.90E+02	5.52E+02	1.42E-01	4.15E-01	7.65E-01	-1.37E+00	2.45E+00	3.52E+00	NA	NA	NA	NA	NA	NA	
	010	85.3	85.3	10/24/2008	14:50	8.62E+03	6.66E+02	1.72E+02	1.13E-01	4.56E-01	5.68E-01	1.39E+00	5.78E+00	6.62E+00	3.08E+00	5.89E+00	7.32E+00	NA	NA	NA	
	011	85.3	85.3	2/4/2009	15:49	6.54E+03	6.38E+02	1.98E+02	5.26E-01	7.76E-01	8.50E-01	4.88E-01	2.85E+00	3.31E+00	2.27E+00	3.20E+00	4.15E+00	NA	NA	NA	
MW-32-131	001	138	-60.9	1/19/2007	9:45	1.13E+04	8.40E+02	5.30E+02	-1.03E+00	1.47E+00	1.70E+00	-6.00E-02	2.04E+00	2.30E+00	3.00E-02	2.07E+00	2.40E+00	NA	NA	NA	MW-32-131
	002	138	-60.9	6/28/2007	12:45	3.02E+02	1.88E+02	1.97E+02	-1.39E-01	5.13E-01	5.94E-01	-1.46E+00	5.09E+00	4.92E+00	9.88E-01	3.76E+00	4.38E+00	NA	NA	NA	
	003	138	-60.9	8/13/2007	11:15	1.29E+02	1.70E+02	1.87E+02	2.69E-01	7.33E-01	8.51E-01	-8.09E-01	4.86E+00	4.85E+00	-1.19E+00	3.29E+00	3.22E+00	NA	NA	NA	
	004	130.8	-53.7	10/26/2007	10:11	3.74E+02	2.39E+02	2.42E+02	2.47E-01	6.03E-01	7.06E-01	-1.81E-01	3.48E+00	3.82E+00	-2.55E-01	3.92E+00	3.99E+00	NA	NA	NA	
	005	130.8	-53.7	1/18/2008	11:23	5.04E+02	2.07E+02	1.79E+02	5.14E-01	7.79E-01	8.52E-01	8.47E-01	2.19E+00	2.21E+00	-8.40E-02	1.98E+00	2.18E+00	NA	NA	NA	
	006	130.8	-53.7	5/5/2008	12:35	1.03E+03	1.36E+02	1.83E+02	-2.89E-01	3.98E-01	7.75E-01	-1.21E+00	2.28E+00	3.55E+00	-3.26E-01	2.27E+00	3.66E+00	NA	NA	NA	
MW-32-149	001	163	-85.9	1/19/2007	9:50	1.05E+04	8.70E+02	5.70E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-32-149
	002	163	-85.9	6/28/2007	13:06	5.81E+02	2.03E+02	1.97E+02	-2.82E-01	7.33E-01	9.70E-01	8.54E-01	2.85E+00	2.94E+00	-8.16E-01	2.46E+00	2.60E+00	NA	NA	NA	
	003	163	-85.9	8/13/2007	11:35	4.93E+02	2.09E+02	2.08E+02	-6.38E-01	3.81E-01	6.52E-01	-1.42E+00	3.76E+00	3.37E+00	1.63E+00	1.69E+00	2.91E+00	NA	NA	NA	
	004	149.3	-72.2	10/26/2007	10:10	2.92E+03	2.94E+02	1.90E+02	-2.45E-01	4.89E-01	7.22E-01	1.99E-01	3.10E+00	3.51E+00	1.65E-01	3.56E+00	3.99E+00	NA	NA	NA	
	005	149.3	-72.2	1/18/2008	11:18	1.15E+03	2.69E+02	1.85E+02	3.04E-01	8.25E-01	9.53E-01	2.94E+00	4.29E+00	3.08E+00	-8.74E-01	2.82E+00	2.93E+00	NA	NA	NA	
	006	149.3	-72.2	5/5/2008	10:54	8.83E+02	1.31E+02	1.82E+02	7.39E-01	5.05E-01	7.94E-01	-2.99E+00	2.67E+00	3.71E+00	2.04E+00	2.12E+00	4.12E+00	NA	NA	NA	
	007	149.3	-72.2	7/31/2008	11:10	5.32E+02	1.31E+02	1.94E+02	1.38E-02	3.46E-01	6.80E-01	1.06E+00	1.65E+00	2.87E+00	1.42E+00	1.56E+00	2.81E+00	NA	NA	NA	
	008	149.3	-72.2	10/24/2008	10:28	5.03E+02	2.10E+02	1.72E+02	4.69E-01	6.52E-01	6.99E-01	1.80E+00	5.22E+00	6.07E+00	1.25E+00	4.96E+00	5.82E+00	NA	NA	NA	
	009	149.3	-72.2	2/4/2009	13:50	2.65E+02	1.18E+02	1.17E+02	4.53E-01	6.75E-01	7.34E-01	5.44E-01	2.99E+00	3.38E+00	3.32E-01	2.91E+00	3.28E+00	NA	NA	NA	
MW-32-173	001	172.8	-95.7	10/26/2007	9:55	5.89E+03	3.87E+02	1.92E+02	1.86E-02	5.87E-01	7.54E-01	6.92E-01	3.00E+00	3.51E+00	-9.97E-01	2.91E+00	3.02E+00	NA	NA	NA	MW-32-173
	002	172.8	-95.7	1/18/2008	11:05	3.40E+03	4.07E+02	1.82E+02	1.13E-01	6.02E-01	7.63E-01	-3.84E-01	2.00E+00	2.18E+00	-6.14E-01	2.09E+00	2.25E+00	NA	NA	NA	
	003	172.8	-95.7	5/5/2008	10:33	1.69E+03	1.52E+02	1.82E+02	1.11E-02	3.53E-01	7.09E-01	1.95E-01	2.18E+00	3.64E+00	5.47E-01	2.24E+00	3.91E+00	NA	NA	NA	
	004	172.8	-95.7	7/31/2008	10:52	1.08E+03	1.48E+02	1.92E+02	6.80E-01	4.52E-01	7.11E-01	-1.17E+00	1.58E+00	2.47E+00	6.06E-01	1.65E+00	2.96E+00	NA	NA	NA	
	005	172.8	-95.7	9/2/2008	11:30	9.72E+02	3.72E+02	5.48E+02	1.85E-01	4.64E-01	8.41E-01	-1.02E+00	2.67E+00	3.88E+00	NA	NA	NA	NA	NA	NA	
	006	172.8	-95.7	10/24/2008	10:25	1.03E+03	2.67E+02	1.74E+02	1.05E-01	3.60E-01	4.36E-01	8.63E-01	5.67E+00	6.61E+00	2.30E+00	6.36E+00	7.74E+00	NA	NA	NA	
	007	172.8	-95.7	2/4/2009	13:40	7.56E+02	1.45E+02	1.17E+02	2.57E-01	4.26E-01	4.74E-01	1.79E+00	3.65E+00	4.41E+00	2.56E+00	3.47E+00	4.49E+00	NA	NA	NA	
MW-32-190	001	194.5	-117.4	1/19/2007	9:55	1.13E+04	8.40E+02	5.20E+02	4.20E-01	1.50E+00	1.70E+00	2.60E-01	1.26E+00	1.40E+00	7.10E-01	1.50E+00	1.70E+00	NA	NA	NA	MW-32-190
	002	194.5	-117.4	6/28/2007	13:07	2.41E+03	2.72E+02	1.87E+02	-5.09E-02	6.12E-01	8.20E-01	1.52E+00	3.07E+00	3.64E+00	-1.29E+00	3.27E+00	3.37E+00	NA	NA	NA	
	003	194.5	-117.4	8/13/2007	11:25	1.72E+03	2.67E+02	2.03E+02	-3.65E-01	8.12E-01	1.04E+00	6.21E-01	2.49E+00	2.93E+00	-1.19E+00	2.38E+00	2.39E+00	NA	NA	NA	
	004	190.3	-113.7	10/26/2007	9:53	9.76E+03	4.80E+02	1.93E+02	-5.05E-01	7.75E-01	9.73E-01	-6.17E-01	3.07E+00	3.27E+00	-1.94E-01	3.18E+00	3.57E+00	NA	NA	NA	
	005	190.3	-113.7	1/18/2008	11:35	8.89E+03	6.32E+02	1.83E+02	4.28E-01	7.73E-01	8.69E-01	6.57E-01	1.71E+00	2.02E+00	5.18E-01	1.65E+00	1.96E+00	NA	NA	NA	
	006	190.3	-113.7	5/5/2008	10:57	6.73E+03	2.41E+02	1.82E+02	-1.68E-01	4.28E-01	8.16E-01	-1.18E+00	2.08E+00	3.24E+00	-2.62E+00	3.16E+00	2.97E+00	NA	NA	NA	
	007	190.3	-113.7	7/31/2008	11:24	4.71E+03	2.35E+02	1.94E+02	3.21E-01	3.35E-01	5.51E-01	-8.54E-01	1.55E+00	2.53E+00	2.22E+00	1.77E+00	3.30E+00	NA	NA	NA	
	008	190.3	-113.7	9/2/2008	11:40	3.81E+03	5.20E+02	5.44E+02	5.92E-01	5.81E-01	9.53E-01	1.39E+00	2.82E+00	4.63E+00	NA	NA	NA	NA	NA	NA	
	009	190.3	-113.7	10/24/2008	10:31	3.35E+03	4.31E+02	1.73E+02	3.30E-03	5.75E-01	7.41E-01	5.89E-01	5.33E+00	5.98E+00	3.85E+00	5.68E+00	7.16E+00	NA	NA	NA	
	010	190.3	-113.7	2/4/2009	13:45	2.69E+03	4.26E+02	1.98E+02	2.44E-01	5.57E-01	6.47E-01	3.60E-02	2.67E+00	2.95E+00	4.71E-01	3.02E+00	3.44E+00	NA	NA	NA	
MW-33	001	19.2	-0.4	12/15/2005	8:00	1.42E+05	4.26E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-33
	002	19.2	-0.4	12/19/2005	11:38	1.99E+05	5.97E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	19.2	-0.4	12/29/2005	11:30	2.20E+05	6.60E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	19.2	-0.4	1/6/2006	12:30	1.89E+05	5.67E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	19.2	-0.4	1/13/2006	12:10	2.32E+05	6.96E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	006	19.2	-0.4	1/20/2006	10:40	2.26E+05	6.78E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	007	19.2	-0.4	1/27/2006	11:10	2.42E+05	7.26E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	008	19.2	-0.4	2/3/2006	12:15	2.50E+05	2.84E+04	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	009	19.2	-0.4	2/7/2006	16:00	2.14E+05	2.64E+04	6.37E+02	1.36E-01	5.06E-01	6.25E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	010	19.2	-0.4	2/16/2006	13:55	2.61E+05	2.91E+04	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	011	19.2	-0.4	3/3/2006	10:20	2.53E+05	7.59E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	012	19.2	-0.4	4/7/2006	10:25	2.21E+05	6.63E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	014	19.2	-0.4	5/17/2006	12:50	1.35E+05	2.01E+04	1.60E+03	7.79E-01	1.43E+00	1.47E+00	1.17E+01	1.19E+01	1.37E+01	4.62E+00	1.41E+01	1.28E+01	NA	NA	NA	
	015	19.2	-0.4	6/7/2006	10:15	1.41E+05	1.85E+04	1.32E+03	6.74E-01	5.63E-01	6.44E-01	6.95E-01	8.72E+00	9.58E+00	-6.11E+00	8.63E+00	8.02E+00	NA	NA	NA	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	017	19.2	-0.4	7/3/2006	9:50	2.64E+05	2.01E+04	3.85E+03	4.78E-01	1.37E+00	1.57E+00	-6.85E-01	1.17E+01	1.27E+01	-5.24E+00	1.28E+01	1.21E+01	NA	NA	NA	
	018	19.2	-0.4	8/4/2006	8:15	1.84E+05	2.54E+04	1.87E+03	NA	NA	NA	3.53E+00	6.31E+00	7.84E+00	-1.14E+00	7.35E+00	8.60E+00	NA	NA	NA	
	019	19.2	-0.4	8/30/2006	13:00	1.15E+05	1.77E+04	4.39E+03	NA	NA	NA	-6.99E-01	8.47E+00	8.90E+00	3.71E+00	7.21E+00	9.60E+00	NA	NA	NA	
	020	19.2	-0.4	6/15/2007	15:48	9.06E+04	3.26E+03	3.61E+02	-2.82E-01	2.86E-01	4.85E-01	-2.78E-01	3.82E+00	3.76E+00	-1.64E+00	3.44E+00	3.39E+00	-8.12E-01	1.16E+01	1.37E+01	
	021	19.2	-0.4	8/3/2007	10:20	2.30E+04	7.08E+02	2.04E+02	5.80E-01	8.49E-01	9.33E-01	8.18E-01	2.37E+00	2.83E+00	2.45E-01	2.13E+00	2.46E+00	NA	NA	NA	
	022	19.2	-0.4	4/28/2008	15:00	5.85E+04	1.16E+03	2.58E+02	1.69E-01	2.97E-01	5.22E-01	1.08E-01	1.87E+00	3.12E+00	-4.51E-02	2.12E+00	3.49E+00	NA	NA	NA	
	023	19.2	-0.4	9/4/2008	14:41	6.80E+04	1.82E+03	5.47E+02	1.33E-01	4.05E-01	7.55E-01	5.46E-01	1.61E+00	2.83E+00	NA	NA	NA	NA	NA	NA	
MW-34	001	18.9	-0.4	12/13/2005	13:53	6.39E+04	1.92E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-34
	002	18.9	-0.4	12/19/2005	10:35	1.21E+05	3.63E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	18.9	-0.4	12/29/2005	10:50	1.47E+05	4.41E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	18.9	-0.4	1/6/2006	11:35	1.59E+05	4.77E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	18.9	-0.4	1/13/2006	11:40	1.31E+05	3.93E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	006	18.9	-0.4	1/20/2006	10:00	2.11E+05	6.33E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	007	18.9	-0.4	1/27/2006	10:50	2.12E+05	6.36E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	008	18.9	-0.4	2/3/2006	12:20	2.24E+05	2.69E+04	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	009	18.9	-0.4	2/7/2006	15:15	1.74E+05	2.38E+04	6.37E+02	9.22E-02	3.78E-01	4.67E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	010	18.9	-0.4	2/16/2006	13:55	1.99E+05	2.55E+04	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	011	18.9	-0.4	3/3/2006	9:35	2.30E+05	6.90E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	012	18.9	-0.4	4/7/2006	10:05	2.76E+05	8.28E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	013	18.9	-0.4	5/17/2006	13:15	3.64E+04	5.52E+03	8.35E+02	2.50E-02	6.63E-01	9.24E-01	7.84E+00	1.39E+01	1.55E+01	2.72E+00	1.31E+01	1.44E+01	NA	NA	NA	
	014	18.9	-0.4	6/26/2006	10:20	1.05E+04	8.52E+02	3.41E+02	3.71E-01	6.49E-01	7.79E-01	1.83E+00	7.85E+00	8.96E+00	5.84E+00	7.34E+00	9.37E+00	NA	NA	NA	
	015	18.9	-0.4	7/26/2006	10:20	4.07E+04	3.51E+03	1.57E+03	2.18E-01	8.97E-01	1.16E+00	-1.73E-01	4.87E+00	5.24E+00	-2.54E-01	5.64E+00	6.78E+00	NA	NA	NA	
	016	18.9	-0.4	8/24/2006	12:18	6.69E+04	1.05E+04	3.39E+03	NA	NA	NA	1.62E+00	5.81E+00	6.78E+00	-1.60E+00	5.89E+00	5.85E+00	NA	NA	NA	
	017	18.9	-0.4	9/21/2006	9:45	1.61E+04	2.78E+03	5.86E+02	0.00E+00	1.12E+00	1.31E+00	6.09E-02	1.69E+00	1.85E+00	-2.10E-01	1.65E+00	1.79E+00	NA	NA	NA	
	018	18.9	-0.4	8/3/2007	10:21	2.22E+04	7.44E+02	2.13E+02	3.94E-02	7.08E-01	9.04E-01	-1.55E+00	4.53E+00	4.44E+00	2.12E+00	3.40E+00	4.01E+00	NA	NA	NA	
MW-35	001	19	-0.4	12/13/2005	13:50	4.23E+04	3.18E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-35
	002	19	-0.4	12/19/2005	10:17	7.60E+04	2.28E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	19	-0.4	12/29/2005	10:00	8.05E+04	2.42E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	19	-0.4	1/6/2006	11:10	9.54E+04	2.86E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	19	-0.4	1/13/2006	10:50	9.78E+04	2.93E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	006	19	-0.4	1/20/2006	9:30	1.04E+05	3.12E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	007	19	-0.4	1/27/2006	11:00	3.87E+04	1.16E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	008	19	-0.4	2/3/2006	12:20	5.14E+04	1.29E+04	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	009	19	-0.4	2/7/2006	14:40	8.44E+04	1.66E+04	6.37E+02	1.62E-01	4.32E-01	5.28E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	010	19	-0.4	2/16/2006	13:30	9.04E+04	1.72E+04	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	011	19	-0.4	3/3/2006	9:05	1.19E+05	3.57E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	012	19	-0.4	4/7/2006	9:55	5.62E+04	1.69E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	013	19	-0.4	5/17/2006	13:37	4.07E+04	6.15E+03	8.72E+02	4.70E-01	7.53E-01	7.87E-01	6.46E+00	2.07E+01	1.64E+01	3.04E+00	1.37E+01	1.53E+01	NA	NA	NA	
	014	19	-0.4	6/26/2006	10:40	1.74E+04	1.37E+03	4.29E+02	-2.30E-01	6.66E-01	8.69E-01	-1.34E+00	1.01E+01	1.09E+01	-2.45E+00	8.92E+00	9.36E+00	NA	NA	NA	
	015	19	-0.4	9/21/2006	9:30	4.53E+04	7.19E+03	9.12E+02	6.26E-01	1.30E+00	1.41E+00	-3.15E-01	1.96E+00	1.82E+00	2.44E-01	1.49E+00	1.69E+00	NA	NA	NA	
	016	19	-0.4	6/15/2007	13:58	2.03E+03	5.87E+02	3.84E+02	2.26E-01	4.34E-01	4.91E-01	4.66E+01	8.82E+00	2.81E+00	-1.27E+00	2.58E+00	2.63E+00	6.18E+00	1.92E+01	2.20E+01	
	017	19	-0.4	8/3/2007	10:22	5.95E+03	5.58E+02	2.70E+02	9.45E-02	5.76E-01	6.98E-01	-9.20E-01	2.71E+00	2.82E+00	5.74E-01	2.88E+00	3.33E+00	NA	NA	NA	
	018	19	-0.4	4/28/2008	13:38	1.04E+03	1.77E+02	2.19E+02	2.34E-01	2.96E-01	5.03E-01	-2.93E-02	2.03E+00	3.34E+00	-5.77E-02	2.36E+00	3.87E+00	NA	NA	NA	
MW-36-24[6]	001	16.1	-4.3	2/7/2006	17:00	NA	NA	NA	1.29E+00	5.48E-01	5.53E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-36-246
	002	16.1	-4.3	2/27/2006	9:45	3.04E+04	9.95E+03	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	16.1	-4.3	3/23/2006	16:00	3.42E+04	3.81E+03	1.86E+03	9.99E-01	6.42E-01	6.42E-01	-3.86E+00	1.01E+01	1.05E+01	5.02E+00	9.33E+00	1.22E+01	6.41E+01	1.59E+01	1.53E+01	
	004	16.1	-4.3	4/5/2006	10:30	NA	NA	NA	1.56E+00	4.86E-01	4.35E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	16.1	-4.3	6/5/2006	12:20	2.02E+02	1.59E+02	1.51E+02	3.70E-01	7.66E-01	9.31E-01	3.99E+00	1.03E+01	1.21E+01	6.90E-02	1.02E+01	1.12E+01	NA	NA	NA	
	006	16.1	-4.3	8/28/2006	10:30	2.45E+02	1.80E+02	1.71E+02	NA	NA	NA	-1.04E+00	3.27E+00	3.32E+00	1.66E+00	3.06E+00	4.19E+00	NA	NA	NA	
	007	16.1	-4.3	6/27/2007	10:40	1.54E+02	1.76E+02	1.93E+02	5.90E-01	7.92E-01	8.46E-01	3.31E-01	2.81E+00	3.17E+00	4.00E-01	3.03E+00	3.45E+00	NA	NA	NA	
	008	16.1	-4.3	8/8/2007	13:45	1.63E+02	1.85E+02	2.04E+02	-5.35E-01	6.81E-01	9.31E-01	1.53E-01	3.40E+00	3.77E+00	3.56E+00	3.40E+00	4.17E+00	-7.46E+00	2.10E+01	2.54E+01	
	009	16.1	-4.3	10/18/2007	10:06	2.86E+02	1.91E+02	2.01E+02	8.56E-02	7.60E-01	9.26E-01	7.20E-01	2.91E+00	3.37E+00	3.11E-01	3.01E+00	3.47E+00	NA	NA	NA	
	010	16.1	-4.3	1/23/2008	14:18	2.16E+03	2.36E+02	1.70E+02	1.03E-01	3.12E-01	3.76E-01	2.92E-02	2.39E+00	2.67E+00	-4.84E-01	2.37E+00	2.57E+00	NA	NA	NA	
	011	16.1	-4.3	7/24/2008	13:57	1.02E+03	1.22E+02	1.63E+02	3.38E-01	3.75E-01	6.24E-01	3.97E-01	2.09E+00	3.61E+00	-5.45E-01	2.37E+00	3.85E+00	NA	NA	NA	
	012	16.1	-4.3	11/10/2008	15:33	2.01E+02	1.50E+02	1.61E+02	5.52E-01	7.53E-01	8.04E-01	0.00E+00	6.81E+00	4.46E+00	2.72E+00	3.84E+00	5.41E+00	NA	NA	NA	
	013	16.1	-4.3	1/22/2009	12:48	2.37E+02	1.16E+02	1.06E+02	-6.26E-01	7.37E-01	9.48E-01	5.41E-01	2.88E+00	3.34E+00	3.15E-01	3.35E+00	3.82E+00	NA	NA	NA	
MW-36-41	001	37	-25.2	2/10/2006	11:10	4.75E+04	1.24E+04	6.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-36-41
	002	37	-25.2	2/27/2006	13:45	4.58E+04	1.22E+04	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	37	-25.2	3/24/2006	12:45	5.52E+04	4.65E+03	1.86E+03	3.48E+00	5.46E-01	4.16E-01	-5.91E+00	1.39E+01	1.45E+01	2.97E+00	1.53E+01	1.74E+01	4.87E+01	1.65E+01	1.65E+01	
	004	37	-25.2	4/5/2006	12:55	NA	NA	NA	3.53E+00	6.24E-01	5.02E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	37	-25.2	6/5/2006	11:30	2.05E+04	3.17E+03	6.01E+02	2.30E+00	6.59E-01	6.10E-01	-3.37E+00	1.27E+01	1.33E+01	6.21E-02	1.03E+01	1.13E+01	NA	NA	NA	
	006	37	-25.2	8/28/2006	10:10	2.01E+04	3.09E+03	6.45E+02	NA	NA	NA	1.96E+00	4.15E+00	5.22E+00	-2.78E-01	3.56E+00	3.78E+00	NA	NA	NA	
	007	37	-25.2	6/27/2007	12:30	6.11E+03	3.50E+02	1.74E+02	2.18E+00	1.17E+00	9.85E-01	4.30E-01	4.61E+00	1.74E+00	1.36E+00	2.91E+00	3.67E+00	NA	NA	NA	
MW-36-52	001	49.7	-37.9	2/10/2006	10:30	2.24E+04	8.55E+03	6.38E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-36-52
	002	49.7	-37.9	2/27/2006	12:05	2.57E+04	9.14E+03	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	49.7	-37.9	3/24/2006	16:00	2.68E+04	3.47E+03	1.87E+03	4.11E+00	5.66E-01	5.14E-01	4.47E+00	9.06E+00	1.04E+01	-2.47E+00	9.69E+00	1.03E+01	1.18E+01	1.44E+01	1.54E+01	
	004	49.7	-37.9	4/5/2006	14:30	NA	NA	NA	5.01E+00	7.23E-01	6.26E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	49.7	-37.9	6/5/2006	11:30	2.40E+04	3.68E+03	6.40E+02	4.42E+00	8.33E-01	5.53E-01	3.49E+00	1.05E+01	1.21E+01	4.80E-01	1.04E+01	1.15E+01	NA	NA	NA	
	006	49.7	-37.9	8/28/2006	10:00	1.41E+04	2.19E+03	5.35E+02	NA	NA	NA	4.06E-01	6.52E+00	7.36E+00	-2.69E-01	5.23E+00	5.69E+00	NA	NA	NA	
	007	49.7	-37.9	6/27/2007	11:45	1.01E+04	4.89E+02	1.95E+02	2.62E+00	1.09E+00	3.28E-01	-3.82E-01	2.77E+00	2.99E+00	9.25E-01	2.61E+00	3.14E+00	NA	NA	NA	
	008	49.7	-37.9	8/8/2007	14:15	1.25E+04	1.24E+03	4.60E+02	2.26E+00	1.00E+00	2.82E-01	1.30E+00	2.97E+00	3.51E+00	-8.82E-01	3.31E+00	3.55E+00	4.27E+00	2.14E+01	2.47E+01	

See Page 17 for Notes

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	009	49.7	-37.9	1/23/2008	14:13	1.13E+04	4.47E+02	1.71E+02	4.85E+00	9.69E-01	4.24E-01	-2.89E-01	2.01E+00	2.25E+00	4.08E-01	1.86E+00	2.20E+00	NA	NA	NA	
	010	49.7	-37.9	7/24/2008	16:00	1.26E+04	7.66E+02	3.74E+02	5.67E+00	7.42E-01	4.73E-01	-4.79E-01	2.24E+00	3.69E+00	2.77E-02	2.11E+00	3.53E+00	NA	NA	NA	
	011	49.7	-37.9	11/10/2008	16:53	1.10E+04	4.40E+02	1.63E+02	8.27E+00	1.24E+00	3.89E-01	-3.85E-01	3.86E+00	4.21E+00	1.36E+00	4.67E+00	5.65E+00	NA	NA	NA	
	012	49.7	-37.9	1/22/2009	12:59	6.79E+03	6.03E+02	2.06E+02	3.37E+00	8.99E-01	6.07E-01	-6.07E-01	2.96E+00	3.24E+00	1.65E+00	3.24E+00	4.05E+00	NA	NA	NA	
MW-37-22	001			2/24/2006	9:50	1.07E+04	5.92E+03	6.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-37-22
	002			2/28/2006	10:20	1.28E+04	2.03E+03	1.31E+03	2.37E+00	8.91E-01	8.44E-01	2.41E+00	1.92E+01	1.95E+01	3.60E+00	1.58E+01	1.77E+01	4.24E+01	1.48E+01	1.47E+01	
	002			2/28/2006	10:20	NA	NA	NA	2.40E+00	9.10E-01	9.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003			3/10/2006	10:35	2.32E+04	2.57E+03	1.28E+03	4.70E+00	9.84E-01	7.87E-01	4.61E+00	1.46E+01	1.63E+01	5.65E+00	1.39E+01	1.57E+01	2.08E+01	1.27E+01	1.33E+01	
	004			3/27/2006	10:35	3.49E+04	3.78E+03	1.81E+03	4.05E+00	8.76E-01	6.97E-01	9.75E-01	4.68E+00	5.21E+00	7.46E-01	4.48E+00	4.97E+00	5.43E+01	1.53E+01	1.52E+01	
	005			6/27/2006	10:25	1.05E+04	8.55E+02	3.40E+02	9.57E+00	1.20E+00	7.87E-01	3.20E+00	6.92E+00	8.00E+00	-8.05E-01	6.94E+00	7.43E+00	NA	NA	NA	
	006			9/29/2006	9:30	7.37E+03	1.22E+03	3.76E+02	1.42E+01	1.80E+00	9.01E-01	-3.84E-02	8.51E+00	9.49E+00	-1.03E+00	7.63E+00	7.69E+00	NA	NA	NA	
	007			6/27/2007	10:50	4.05E+03	3.35E+02	1.94E+02	1.49E+01	2.13E+00	8.72E-01	-2.26E+00	4.88E+00	3.50E+00	-1.12E+00	3.24E+00	3.34E+00	NA	NA	NA	
	008			8/7/2007	10:55	2.79E+03	2.69E+02	1.89E+02	1.83E+01	2.07E+00	8.57E-01	2.74E+00	3.93E+00	4.22E+00	4.23E-01	3.07E+00	3.54E+00	NA	NA	NA	
	009			10/15/2007	14:30	2.26E+03	2.22E+02	1.69E+02	2.29E+01	2.28E+00	4.67E-01	1.33E+00	3.25E+00	3.78E+00	-1.42E+00	3.44E+00	3.44E+00	NA	NA	NA	
	010			1/23/2008	10:42	6.52E+03	3.54E+02	1.71E+02	8.73E+00	1.27E+00	4.63E-01	-2.09E+00	2.96E+00	2.86E+00	2.34E-01	3.08E+00	3.49E+00	NA	NA	NA	
	011			7/24/2008	11:20	4.33E+03	2.28E+02	1.95E+02	1.22E+01	1.25E+00	7.14E-01	4.32E-01	2.13E+00	3.66E+00	2.97E+00	2.57E+00	4.83E+00	NA	NA	NA	
	012			11/10/2008	12:20	2.68E+03	3.92E+02	1.74E+02	1.80E+01	1.88E+00	4.08E-01	2.81E+00	4.96E+00	5.96E+00	-2.85E-01	4.53E+00	4.88E+00	NA	NA	NA	
	013			1/21/2009	14:27	5.27E+03	5.36E+02	2.05E+02	8.81E+00	1.33E+00	6.79E-01	-3.12E-01	3.02E+00	3.27E+00	-2.03E+00	3.09E+00	2.82E+00	NA	NA	NA	
MW-37-32	002			2/28/2006	12:00	2.86E+04	2.73E+03	1.32E+03	1.78E+01	1.49E+00	2.22E+00	1.27E+01	1.93E+01	2.17E+01	1.50E+01	1.90E+01	2.20E+01	3.41E+01	1.46E+01	1.48E+01	MW-37-32
	002			2/28/2006	12:00	NA	NA	NA	1.82E+01	1.72E+00	2.28E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003			3/10/2006	12:50	2.83E+04	2.79E+03	1.28E+03	1.52E+01	1.39E+00	1.90E+00	1.43E+01	1.59E+01	1.78E+01	1.51E+00	1.51E+01	1.65E+01	1.13E+01	1.26E+01	1.34E+01	
	004			3/27/2006	11:10	1.39E+04	2.61E+03	1.72E+03	1.95E+01	1.59E+00	2.44E+00	1.10E+00	4.72E+00	5.25E+00	-8.50E-01	4.41E+00	4.80E+00	6.09E+00	1.40E+01	1.51E+01	
	005			6/27/2006	9:15	7.92E+03	6.63E+02	2.99E+02	2.98E+01	2.64E+00	3.72E+00	-2.37E-01	5.24E+00	6.07E+00	-2.02E-01	4.75E+00	5.78E+00	NA	NA	NA	
	006			9/29/2006	10:15	1.15E+04	1.88E+03	4.64E+02	1.53E+01	1.80E+00	1.91E+00	-3.21E+00	8.98E+00	8.67E+00	2.51E+00	8.73E+00	1.06E+01	NA	NA	NA	
	001			2/24/2007	10:55	3.01E+04	9.93E+03	6.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	007			6/27/2007	12:20	3.13E+03	3.05E+02	1.93E+02	1.85E+01	2.37E+00	2.31E+00	-1.49E+00	3.86E+00	3.38E+00	1.63E+00	3.38E+00	4.14E+00	NA	NA	NA	
	008			8/7/2007	10:56	3.81E+03	2.97E+02	1.87E+02	1.89E+01	2.02E+00	2.36E+00	1.99E+00	3.18E+00	3.88E+00	1.88E+00	3.19E+00	4.01E+00	NA	NA	NA	
	009			10/15/2007	14:36	2.49E+03	2.30E+02	1.69E+02	2.13E+01	2.19E+00	2.66E+00	8.79E-01	4.61E+00	4.81E+00	2.53E+00	3.75E+00	4.70E+00	NA	NA	NA	
	010			1/23/2008	11:03	6.76E+03	3.57E+02	1.70E+02	1.52E+01	1.59E+00	3.65E-01	1.09E+00	2.70E+00	3.16E+00	-5.32E-02	2.72E+00	2.55E+00	NA	NA	NA	
	011			7/24/2008	12:28	5.16E+03	2.45E+02	1.95E+02	2.06E+01	1.51E+00	8.63E-01	-4.08E-01	1.58E+00	2.18E+00	-1.46E-01	2.04E+00	2.58E+00	NA	NA	NA	
	012			11/10/2008	12:20	2.89E+03	4.01E+02	1.71E+02	1.86E+01	1.95E+00	3.99E-01	1.71E+00	5.33E+00	6.24E+00	4.09E-01	5.37E+00	6.14E+00	NA	NA	NA	
	013			1/21/2009	14:30	3.76E+03	4.61E+02	2.04E+02	1.11E+01	1.49E+00	6.27E-01	1.59E+00	2.84E+00	3.40E+00	-7.12E-01	3.32E+00	3.49E+00	NA	NA	NA	
MW-37-40	001	39.2	-24.2	2/24/2006	11:35	1.68E+04	7.41E+03	6.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-37-40
	002	39.2	-24.2	2/28/2006	11:40	1.47E+04	2.13E+03	1.32E+03	3.86E+00	1.23E+00	1.19E+00	1.79E+01	1.71E+01	1.96E+01	1.53E+00	1.64E+01	1.81E+01	5.65E+01	1.65E+01	1.61E+01	
	002	39.2	-24.2	2/28/2006	11:40	NA	NA	NA	4.91E+00	1.23E+00	1.08E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	39.2	-24.2	3/10/2006	10:25	1.70E+04	2.30E+03	1.29E+03	1.35E+01	1.32E+00	7.28E-01	5.51E+00	1.45E+01	1.62E+01	1.99E+00	1.47E+01	1.62E+01	1.24E+01	1.35E+01	1.44E+01	
	004	39.2	-24.2	3/27/2006	11:55	1.56E+04	2.82E+03	1.82E+03	1.11E+01	1.12E+00	5.90E-01	3.34E+00	6.14E+00	5.43E+00	4.03E+00	4.71E+00	5.39E+00	6.37E+00	1.35E+01	1.47E+01	
	006	39.2	-24.2	6/27/2006	10:15	1.42E+04	1.13E+03	3.89E+02	2.44E+01	1.71E+00	7.03E-01	8.68E+00	7.68E+00	9.25E+00	-4.36E+00	6.70E+00	6.60E+00	NA	NA	NA	
	007	39.2	-24.2	6/27/2007	11:00	6.35E+03	3.99E+02	1.93E+02	4.69E+00	1.14E+00	8.47E-01	5.92E-01	3.36E+00	3.91E+00	-1.07E+00	3.15E+00	3.22E+00	NA	NA	NA	
	008	39.2	-24.2	8/7/2007	13:45	5.85E+03	3.50E+02	1.88E+02	9.76E+00	1.51E+00	6.27E-01	1.10E+00	3.12E+00	3.71E+00	-2.48E-01	3.36E+00	3.70E+00	NA	NA	NA	
	009	39.2	-24.2	10/15/2007	15:00	5.69E+03	3.03E+02	1.69E+02	5.98E+00	1.28E+00	7.48E-01	7.63E-01	2.91E+00	3.38E+00	5.99E-01	2.82E+00	3.32E+00	NA	NA	NA	
	010	39.2	-24.2	2/1/2008	17:20	6.73E+03	3.17E+02	1.33E+02	9.48E-01	8.54E-01	8.45E-01	3.09E-01	2.63E+00	2.95E+00	-3.70E-01	2.75E+00	2.94E+00	-4.35E+00	1.46E+01	1.76E+01	
	011	39.2	-24.2	7/24/2008	13:12	5.24E+03	2.43E+02	1.91E+02	1.31E+00	4.41E-01	5.07E-01	-1.10E+00	1.52E+00	2.48E+00	-1.35E+00	2.11E+00	2.70E+00	NA	NA	NA	
	012	39.2	-24.2	11/10/2008	16:17	5.49E+03	5.45E+02	1.76E+02	1.13E+00	5.31E-01	3.83E-01	3.61E-01	6.03E+00	6.83E+00	5.04E+00	7.42E+00	9.22E+00	NA	NA	NA	
	013	39.2	-24.2	1/22/2009	13:05	4.91E+03	5.13E+02	2.00E+02	3.47E+00	8.85E-01	5.69E-01	-2.64E+00	3.78E+00	3.27E+00	2.67E+00	3.14E+00	4.08E+00	NA	NA	NA	
MW-37-57	001	53.2	-38.2	2/24/2006	10:30	1.60E+04	7.22E+03	6.39E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	MW-37-57
	002	53.2	-38.2	2/28/2006	13:35	1.33E+04	2.06E+00	1.32E+03	2.22E+01	1.75E+00	1.05E+00	1.81E+00	2.14E+01	2.44E+01	5.22E+00	1.82E+01	2.14E+01	2.91E+01	1.50E+01	1.54E+01	
	002	53.2	-38.2	2/28/2006	13:35	NA	NA	NA	2.27E+01	2.00E+00	1.02E+00	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	53.2	-38.2	3/10/2006	11:45	1.91E+04	2.40E+03	1.29E+03	2.29E+01	1.74E+00	7.68E-01	1.46E+00	1.76E+01	1.77E+01	7.74E+00	1.53E+01	1.73E+01	1.04E+01	1.33E+01	1.43E+01	
	004	53.2	-38.2	3/27/2006	13:55	1.59E+04	2.84E+03	1.81E+03	1.65E+01	1.38E+00	6.60E-01	2.52E+00	5.25E+00	5.80E+00	3.94E+00	4.86E+00	5.53E+00	3.71E+00	1.37E+01	1.49E+01	
	005	53.2	-38.2	6/27/2006	9:35	4.48E+04	3.42E+03	6.83E+02	2.73E+01	1.89E+00	8.18E-01	NA	NA	NA	2.04E+00	5.77E+00	6.52E+00	NA	NA	NA	
	006	53.2	-38.2	9/29/2006	10:40	1.05E+04	1.74E+03	4.52E+02	1.81E+01	1.88E+00	7.87E-01	-3.39E+00	8.04E+00	7.81E+00	2.60E+00	8.86E+00	1.07E+01	NA	NA	NA	
	007	53.2	-38.2	6/27/2007	12:20	5.89E+03	3.89E+02	1.95E+02	2.42E+01	3.03E+00	8.84E-01	2.45E+00	3.51E+00	4.32E+00	-9.58E-02	4.67E+00	4.84E+00	NA	NA	NA	
	008	53.2	-38.2	8/7/2007	12:55	6.68E+03	3.68E+02	1.88E+02	2.33E+01	2.15E+00	5.01E-01	-1.35E+00	3.27E+00	3.42E+00	-3.64E-02	3.86E+00	4.33E+00	NA	NA	NA	
	009	53.2	-38.2	10/15/2007	15:00	4.88E+03	2.85E+02	1.68E+02	2.78E+01	2.49E+00	5.53E-01	3.62E-01	2.67E+00	2.72E+00	1.20E-01	2.40E+00	2.77E+00	NA	NA	NA	
	010	53.2	-38.2	2/1/2008	16:31	6.63E+03	3.14E+02	1.33E+02	2.89E+01	3.20E+00	9.62E-01	-9.11E-01	3.72E+00	3.68E+00	-2.93E-01	3.12E+00	3.45E+00	8.47E-01	1.46E+01	1.71E+01	
	011	53.2	-38.2	7/24/2008	13:20	5.33E+03	2.47E+02	1.94E+02	2.12E+01	1.46E+00	5.27E-01	-7.11E-01	1.88E+00	3.07E+00	-1.17E+00	2.10E+00	3.24E+00	NA	NA	NA	
	012	53.2	-38.2	11/10/2008	11:04	4.27E+03	4.77E+02	1.71E+02	2.40E+01	2.29E+00	6.36E-01	-1.57E-01	6.08E+00	6.80E+00	9.78E-01	7.18E+00	8.14E+00	NA	NA	NA	
	013	53.2	-38.2	1/21/2009	14:22	5.04E+03	5.21E+02	2.02E+02	1.99E+01	1.97E+00	6.68E-01	3.77E-02	3.44E+00	3.80E+00	1.05E+00	3.71E+00	4.35E+00	NA	NA	NA	
MW-38	002	25.4	-11.1	12/8/2005	10:30	9.85E+02	4.38E+02	4.54E+02	-4.38E+00	9.29E+00	1.25E+01	2.93E+00	8.80E+00	6.57E+00	2.99E+00	8.98E+00	7.06E+00	NA	NA	NA	MW-38
	003	25.4	-11.1	12/30/2005	11:50	2.50E+02	4.29E+02	4.71E+02	NA	NA	NA	2.84E+00	8.51E+00	6.39E+00	2.81E+00	8.43E+00	6.71E+00	NA	NA	NA	
	004	25.4	-11.1	1/10/2006	13:50	1.01E+03	4.50E+02	4.66E+02	NA	NA	NA	3.71E+00	1.11E+01	8.02E+00	3.55E+00	1.06E+01	8.02E+00	NA	NA	NA	
	005	25.4	-11.1	1/19/2006	13:15	7.58E+02	4.29E+02	4.61E+02	NA	NA	NA	3.13E+00	9.38E+00	7.14E+00	3.71E+00	1.11E+01	8.77E+00	NA	NA	NA	
	006	25.4	-11.1	1/25/2006	12:15	1.44E+03	4.59E+02	4.61E+02	NA	NA	NA	3.67E+00	1.10E+01	8.21E+00	4.18E+00	1.25E+01	9.71E+00	NA	NA	NA	
	007	25.4	-11.1	2/1/2006	13:30	3.39E+02	4.23E+02	4.60E+02	NA	NA	NA	3.06E+00	9.19E+00	6.91E+00	3.03E+00	9.09E+00	7.30E+00	NA	NA	NA	
	008	25.4	-11.1	2/8/2006	11:15	1.88E+02	3.30E+02	3.46E+02	1.35E-01	4.34E-01	5.15E-01	5.29E+00	1.16E+01	1.31E+01	2.41E+00	1.17E+01	1.31E+01	NA	NA	NA	
	009	25.4	-11.1	2/16/2006	10:05	1.47E+02	4.11E+02	4.54E+02	NA	NA	NA	2.91E+00	8.74E+00	6.54E+00	2.48E+00	7.44E+00	6.05E+00	NA	NA	NA	
	010	25.4	-11.1	2/23/2006	13:25	2.63E+03	4.98E+02	4.61E+02	NA	NA	NA	1.97E+00	5.90E+00	4.22E+00	1.88E+00	5.63E+00	4.19E+00	NA	NA	NA	
	011	25.4	-11.1	3/3/2006	8:50	3.70E+02	4.71E+02	4.66E+02	NA	NA	NA	2.65E+00	7.94E+00	6.38E+00	4.53E+00	1.36E+01	1.08E+01	NA	NA	NA	
	013	25.4	-11.1	5/22/2006	9:20	7.59E+02	4.11E+02	4.46E+02	1.52E-01	2.88E-01	3.20E-01	3.42E+00	1.03E+01	7.57E+00	3.40E+00	1.02E+01	7.93E+00	NA	NA	NA	
	014	25.4	-11.1	6/21/2006	9:48	9.16E+02	4.38E+02	4.60E+02	-2.66E+00	2.16E+00	2.40E+00	2.52E+00	7.56E+00	5.45E+00	2.50E+00	7.49E+00	5.59E+00	1.10E+00	5.70E+00	6.40E+00	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	014	25.4	-11.1	6/21/2006	9:48	7.62E+02	1.77E+02	1.70E+02	NA	NA	NA	5.90E-01	2.10E+00	2.40E+00	1.20E+00	2.07E+00	2.20E+00	NA	NA	NA	
	015	25.4	-11.1	7/6/2006	12:00	5.93E+02	4.20E+02	4.52E+02	-3.70E-01	4.50E-01	5.20E-01	3.40E+00	1.02E+01	7.70E+00	2.98E+00	8.95E+00	7.41E+00	NA	NA	NA	
	016	25.4	-11.1	8/7/2006	13:23	2.15E+02	1.80E+02	1.74E+02	5.00E-02	6.30E-01	7.10E-01	2.29E+00	6.47E+00	9.51E+00	-7.22E-01	6.90E+00	9.33E+00	2.75E+01	2.94E+01	3.13E+01	
	017	25.4	-11.1	9/5/2006	11:30	3.53E+02	1.86E+02	1.67E+02	-5.30E-01	7.80E-01	8.70E-01	3.81E-01	7.68E+00	8.63E+00	-4.48E-01	6.20E+00	6.42E+00	NA	NA	NA	
	018	25.4	-11.1	11/22/2006	10:38	1.78E+02	4.08E+02	4.50E+02	-7.00E-02	6.60E-01	7.30E-01	3.13E+00	9.38E+00	7.14E+00	3.08E+00	9.25E+00	7.53E+00	NA	NA	NA	
	019	25.4	-11.1	2/12/2007	9:58	2.24E+03	6.00E+02	5.30E+02	-5.10E-01	1.32E+00	1.50E+00	2.73E+00	1.92E+00	2.00E+00	-1.03E+00	1.41E+00	1.80E+00	NA	NA	NA	
	020	25.4	-11.1	8/16/2007	11:30	6.04E+02	1.53E+02	1.44E+02	-9.21E-02	6.92E-01	8.85E-01	1.21E+00	3.07E+00	3.65E+00	2.48E+00	3.01E+00	3.98E+00	NA	NA	NA	
MW-39-67	001	67	13	5/22/2007	9:53	4.73E+02	1.77E+02	1.31E+02	2.76E+00	8.57E-01	5.71E-01	1.23E-01	1.67E+00	1.85E+00	1.84E+00	1.88E+00	2.08E+00	-3.11E+00	1.06E+01	1.23E+01	MW-39-67
	002	67	13	8/7/2007	16:30	3.25E+02	1.86E+02	1.95E+02	4.78E+00	1.13E+00	6.32E-01	2.59E+00	4.62E+00	3.57E+00	2.62E-01	2.55E+00	2.96E+00	NA	NA	NA	
	003	67	13	1/17/2008	14:35	3.57E+02	1.95E+02	1.83E+02	3.52E+00	1.29E+00	8.53E-01	-1.28E-01	3.17E+00	3.57E+00	1.76E+00	3.63E+00	4.25E+00	NA	NA	NA	
	004	67	13	5/1/2008	13:48	3.18E+02	1.24E+02	1.96E+02	2.21E+00	6.17E-01	6.78E-01	-3.01E-01	1.58E+00	2.53E+00	3.64E-01	1.80E+00	3.11E+00	NA	NA	NA	
	005	67	13	10/23/2008	12:53	4.15E+02	2.01E+02	1.99E+02	3.31E+00	1.12E+00	7.74E-01	-1.28E+00	5.46E+00	5.95E+00	-1.22E-01	5.38E+00	6.06E+00	NA	NA	NA	
MW-39-84	001	83.5	-3.5	5/22/2007	10:38	5.91E+02	1.89E+02	1.29E+02	1.72E+00	7.22E-01	5.57E-01	-9.07E-02	1.53E+00	1.69E+00	5.61E-01	1.58E+00	1.81E+00	-1.68E+00	9.99E+00	1.15E+01	MW-39-84
	002	83.5	-3.5	8/7/2007	15:30	2.52E+02	1.77E+02	1.91E+02	7.97E-01	7.18E-01	7.30E-01	3.55E-01	3.07E+00	3.44E+00	-1.11E+00	3.59E+00	3.76E+00	NA	NA	NA	
	003	83.5	-3.5	1/17/2008	13:25	1.43E+02	1.70E+02	1.84E+02	1.78E+00	9.47E-01	7.24E-01	-2.74E+00	2.99E+00	2.86E+00	8.36E-01	2.94E+00	3.50E+00	NA	NA	NA	
	004	83.5	-3.5	5/1/2008	14:10	1.50E+02	1.18E+02	1.96E+02	2.23E+00	7.07E-01	8.93E-01	-2.12E-01	2.24E+00	3.67E+00	-2.12E-01	2.24E+00	3.67E+00	NA	NA	NA	
	005	83.5	-3.5	10/23/2008	12:56	2.34E+02	1.88E+02	1.99E+02	1.04E+00	6.90E-01	5.86E-01	1.74E+00	5.88E+00	6.93E+00	1.12E+00	6.98E+00	8.05E+00	NA	NA	NA	
MW-39-102	001	101.5	-21.5	5/22/2007	10:40	8.05E+02	2.13E+02	1.29E+02	1.32E+00	7.17E-01	6.21E-01	-3.99E-02	1.81E+00	1.99E+00	6.54E-01	1.78E+00	2.11E+00	6.39E-02	1.15E+01	1.32E+01	MW-39-102
	002	101.5	-21.5	8/7/2007	14:25	3.21E+02	1.79E+02	1.88E+02	4.71E-01	5.61E-01	5.95E-01	-7.63E-01	3.35E+00	3.60E+00	-2.47E+00	4.70E+00	4.22E+00	NA	NA	NA	
	003	101.5	-21.5	1/17/2008	13:32	1.54E+02	1.67E+02	1.79E+02	9.88E-01	8.36E-01	7.97E-01	7.42E-01	2.37E+00	2.83E+00	7.91E-01	3.45E+00	2.98E+00	NA	NA	NA	
	004	101.5	-21.5	4/30/2008	14:56	5.03E+02	1.69E+02	2.44E+02	8.83E-01	5.43E-01	7.95E-01	-1.02E+00	2.63E+00	4.00E+00	4.88E-01	1.90E+00	3.34E+00	-1.07E+01	1.40E+01	2.48E+01	
	005	101.5	-21.5	10/22/2008	13:56	1.68E+02	1.83E+02	2.00E+02	1.23E+00	7.18E-01	5.92E-01	6.57E-01	6.18E+00	6.75E+00	-1.90E+00	5.47E+00	5.53E+00	NA	NA	NA	
MW-39-124	001	124	-44	5/22/2007	9:50	2.61E+02	1.49E+02	1.31E+02	9.26E-01	9.70E-01	1.00E+00	-1.15E-01	1.64E+00	1.80E+00	-5.31E-01	1.54E+00	1.63E+00	3.55E+00	1.17E+01	1.33E+01	MW-39-124
	002	124	-44	8/7/2007	13:40	1.92E+02	1.73E+02	1.88E+02	5.90E-01	8.57E-01	9.43E-01	-1.14E+00	2.94E+00	3.06E+00	4.97E-01	3.17E+00	3.61E+00	NA	NA	NA	
	003	124	-44	1/17/2008	15:40	1.67E+02	1.64E+02	1.73E+02	1.48E+00	9.71E-01	8.60E-01	6.55E-01	2.61E+00	3.00E+00	9.85E-01	2.03E+00	2.55E+00	NA	NA	NA	
	004	124	-44	4/30/2008	15:24	2.15E+02	9.50E+01	1.53E+02	1.79E+00	6.60E-01	8.91E-01	-1.23E+00	2.13E+00	3.40E+00	5.87E-01	2.19E+00	3.89E+00	-1.13E+01	1.42E+01	2.52E+01	
	005	124	-44	10/22/2008	14:00	2.31E+02	1.88E+02	2.00E+02	9.42E-01	6.47E-01	5.64E-01	1.03E+00	6.64E+00	7.61E+00	1.63E+00	6.98E+00	8.11E+00	NA	NA	NA	
MW-39-183	001	182.5	-102.5	5/22/2007	10:08	2.47E+02	1.45E+02	1.29E+02	6.51E-01	8.82E-01	9.53E-01	6.42E-01	1.88E+00	1.89E+00	3.09E-02	1.58E+00	1.79E+00	0.00E+00	1.09E+01	1.25E+01	MW-39-183
	002	182.5	-102.5	8/7/2007	12:40	1.88E+02	1.73E+02	1.89E+02	7.11E-01	8.02E-01	8.32E-01	1.38E+00	5.12E+00	5.12E+00	2.34E+00	4.56E+00	5.46E+00	NA	NA	NA	
	003	182.5	-102.5	1/17/2008	11:55	4.65E+01	1.56E+02	1.82E+02	8.29E-01	6.17E-01	5.82E-01	-3.72E-01	3.51E+00	3.92E+00	0.00E+00	2.03E+00	2.20E+00	NA	NA	NA	
	004	182.5	-102.5	4/30/2008	15:03	1.12E+02	1.06E+02	1.77E+02	1.12E+00	5.66E-01	7.83E-01	1.45E-01	2.45E+00	4.14E+00	7.95E-01	2.60E+00	4.48E+00	1.83E+00	1.46E+01	2.50E+01	
	005	182.5	-102.5	10/22/2008	14:07	5.39E+01	1.73E+02	1.97E+02	3.45E-01	7.29E-01	8.35E-01	-4.16E+00	6.88E+00	7.09E+00	-3.08E+00	7.77E+00	7.39E+00	NA	NA	NA	
MW-39-195	001	195	-115	5/22/2007	12:45	2.55E+02	1.50E+02	1.33E+02	1.30E+00	6.90E-01	5.69E-01	0.00E+00	7.67E+00	4.34E+00	3.54E-01	4.16E+00	4.82E+00	-2.52E+00	9.95E+00	1.15E+01	MW-39-195
	002	195	-115	8/7/2007	12:00	2.00E+02	1.70E+02	1.85E+02	5.92E-01	6.23E-01	6.55E-01	-4.08E-02	4.14E+00	4.06E+00	-2.76E-01	4.56E+00	4.30E+00	NA	NA	NA	
	003	195	-115	1/17/2008	17:28	9.63E+01	1.64E+02	1.84E+02	8.97E-01	8.51E-01	8.38E-01	7.57E-01	4.08E+00	4.05E+00	8.15E-01	3.42E+00	4.01E+00	NA	NA	NA	
	004	195	-115	4/30/2008	16:10	2.74E+02	1.50E+02	2.36E+02	1.21E+00	5.52E-01	8.29E-01	-1.17E+00	2.28E+00	3.71E+00	2.23E-02	2.48E+00	4.21E+00	-2.59E+00	1.45E+01	2.51E+01	
	005	195	-115	10/22/2008	14:26	1.72E+02	1.83E+02	2.00E+02	8.81E-01	7.23E-01	6.88E-01	4.14E+00	5.57E+00	6.90E+00	1.81E+00	6.76E+00	7.96E+00	NA	NA	NA	
MW-40-27	001	26.7	46.5	6/5/2007	11:00	1.56E+02	1.58E+02	1.63E+02	-7.82E-04	6.48E-01	8.50E-01	2.70E-02	3.04E+00	3.39E+00	1.48E+00	2.90E+00	3.17E+00	NA	NA	NA	MW-40-27
	002	26.7	46.5	7/23/2007	12:35	1.62E+02	1.59E+02	1.69E+02	3.32E-01	5.90E-01	6.62E-01	2.52E+00	3.39E+00	3.88E+00	-5.97E-02	3.45E+00	3.83E+00	NA	NA	NA	
	003	26.7	46.5	1/7/2008	16:28	1.44E+02	1.70E+02	1.82E+02	-4.39E-01	4.49E-01	7.84E-01	-4.17E-01	1.74E+00	1.87E+00	6.09E-01	1.70E+00	1.99E+00	NA	NA	NA	
	004	26.7	46.5	8/11/2008	13:19	2.22E+02	1.06E+02	1.72E+02	3.66E-01	4.20E-01	7.05E-01	6.08E-01	2.28E+00	4.00E+00	-3.72E-01	2.56E+00	3.83E+00	-7.57E+00	1.15E+01	2.05E+01	
	005	26.7	46.5	10/28/2008	14:58	1.42E+02	1.80E+02	1.95E+02	4.78E-01	5.84E-01	6.10E-01	-1.55E+00	5.73E+00	6.22E+00	-1.46E+00	6.86E+00	7.41E+00	6.28E+00	1.64E+01	1.85E+01	
	006	26.7	46.5	1/19/2009	14:29	1.20E+02	1.34E+02	1.48E+02	4.82E-01	6.36E-01	6.82E-01	6.25E-01	3.41E+00	3.86E+00	1.46E+00	2.90E+00	3.58E+00	-1.86E+00	1.80E+01	2.09E+01	
MW-40-46	001	46.2	27	6/5/2007	11:50	1.42E+02	1.58E+02	1.66E+02	-3.17E-01	5.82E-01	8.88E-01	7.90E-01	3.59E+00	3.39E+00	-2.35E+00	2.70E+00	2.27E+00	NA	NA	NA	MW-40-46
	002	46.2	27	7/23/2007	12:15	9.48E+01	1.53E+02	1.71E+02	3.50E-01	5.61E-01	6.28E-01	-9.08E-01	3.79E+00	4.09E+00	-1.72E+00	3.07E+00	2.90E+00	NA	NA	NA	
	003	46.2	27	10/12/2007	14:45	-1.59E+01	1.52E+02	1.74E+02	-2.14E-02	5.10E-01	6.85E-01	-3.80E-01	3.72E+00	3.59E+00	4.94E-01	3.72E+00	4.26E+00	NA	NA	NA	
	004	46.2	27	1/7/2008	14:42	-1.96E+01	1.45E+02	1.80E+02	8.04E-01	8.55E-01	8.75E-01	-1.21E+00	2.84E+00	3.00E+00	1.16E+00	2.58E+00	2.82E+00	NA	NA	NA	
	005	46.2	27	8/11/2008	13:35	1.68E+02	1.04E+02	1.71E+02	-3.25E-01	3.77E-01	8.09E-01	1.25E-01	1.99E+00	3.31E+00	1.09E+00	2.05E+00	3.64E+00	4.04E+00	1.17E+01	2.01E+01	
	006	46.2	27	10/28/2008	15:30	8.80E+01	1.74E+02	1.98E+02	6.53E-01	7.02E-01	7.20E-01	2.82E-01	6.58E+00	7.49E+00	1.83E+00	6.30E+00	7.48E+00	9.34E-01	1.71E+01	1.96E+01	
	007	46.2	27	1/19/2009	14:28	7.76E+01	1.33E+02	1.48E+02	2.69E-01	5.01E-01	5.67E-01	8.08E-01	2.88E+00	3.39E+00	-1.19E+00	2.78E+00	2.88E+00	-5.63E+00	1.89E+01	2.22E+01	
MW-40-81	001	80.7	-7.5	6/5/2007	12:37	1.63E+02	1.59E+02	1.63E+02	-2.93E-02	6.98E-01	9.11E-01	-1.00E+00	3.09E+00	3.22E+00	-4.70E-03	3.79E+00	3.62E+00	NA	NA	NA	MW-40-81
	002	80.7	-7.5	7/23/2007	13:00	6.95E+01	1.52E+02	1.72E+02	2.45E-01	6.00E-01	6.94E-01	-7.08E-01	4.95E+00	5.20E+00	2.31E+00	3.81E+00	4.95E+00	NA	NA	NA	
	003	80.7	-7.5	10/12/2007	10:52	6.99E+01	1.53E+02	1.73E+02	-9.65E-02	5.05E-01	7.10E-01	5.47E-01	4.00E+00	4.48E+00	7.73E-01	4.02E+00	4.64E+00	NA	NA	NA	
	004	80.7	-7.5	1/7/2008	14:35	1.09E+02	1.64E+02	1.81E+02	2.87E-01	7.05E-01	8.26E-01	-7.49E-01	2.51E+00	2.38E+00	-2.66E-01	1.77E+00	1.95E+00	NA	NA	NA	
	005	80.7	-7.5	8/11/2008	9:43	2.42E+02	1.06E+02	1.71E+02	1.68E-01	3.65E-01	6.52E-01	-7.84E-02	1.69E+00	2.78E+00	2.60E-01	1.92E+00	3.25E+00	-2.96E+00	1.10E+01	1.92E+01	
	006	80.7	-7.5	10/28/2008	11:20	3.04E+01	1.61E+02	1.93E+02	-1.84E-01	4.17E-01	6.28E-01	2.04E+00	5.28E+00	6.24E+00	-8.66E-01	6.75E+00	7.32E+00	-2.38E+00	2.33E+01	2.69E+01	
	007	80.7	-7.5	1/19/2009	10:38	1.61E+02	1.37E+02	1.48E+02	2.92E-01	5.76E-01	6.54E-01	-4.67E-01	3.62E+00	4.01E+00	-1.41E+00	3.77E+00	3.92E+00	-7.55E+00	1.77E+01	2.09E+01	
MW-40-100	001	100.2	-27	6/5/2007	11:15	1.76E+02	1.61E+02	1.64E+02	3.40E-01	6.16E-01	6.94E-01	-1.92E+00	3.06E+00	3.04E+00	-1.98E+00	3.87E+00	3.59E+00	NA	NA	NA	MW-40-100
	002	100.2	-27	7/23/2007	13:20	8.12E+01	1.55E+02	1.75E+02	2.91E-01	6.18E-01	6.96E-01	-4.67E-01	1.91E+00	2.10E+00	1.78E-01	1.94E+00	2.20E+00	NA	NA	NA	
	003	100.2	-27	10/12/2007	11:03	5.95E+01	1.53E+02	1.73E+02	-7.39E-02	5.75E-01	7.69E-01	1.93E+00	3.57E+00	3.87E+00	8.90E-01	3.30E+00	3.61E+00	NA	NA	NA	
	004	100.2	-27	1/7/2008	11:55	1.98E+01	1.52E+02	1.81E+02	-7.69E-02	5.85E-01	8.00E-01	3.13E-01	2.27E+00	2.60E+00	8.84E-02	2.75E+00	2.86E+00	NA	NA	NA	
	006	100.2	-27	5/30/2008	12:45	1.16E+02	9.84E+01	1.60E+02	1.16E-01	5.60E-01	9.81E-01	-7.43E-01	2.12E+00	3.48E+00	-8.73E-01	2.00E+00	3.15E+00	NA	NA	NA	
	007	100.2	-27	8/11/2008	10:10	1.93E+02	1.05E+02	1.71E+02	-3.44E-02	2.85E-01	5.83E-01	-1.18E-01	1.59E+00	2.68E+00	6.38E-01	1.52E+00	2.70E+00	0.00E+00	1.09E+01	1.89E+01	
	008	100.2	-27	10/28/2008	11:30	8.66E+01	1.73E+02	1.95E+02	1.13E-01	6.37E-01	7.83E-01	-1.25E+00	6.50E+00	7.11E+00	3.92E+00	7.02E+00	8.63E+00	-7.70E-01	1.79E+01	2.06E+01	
	009	100.2	-27	1/19/2009	11:52	4.24E+01	1.30E+02	1.48E+02	1.06E-01	6.03E-01	7.25E-01	6.13E-01	5.97E+00	3.85E+00	1.26E-01	3.15E+00	3.61E+00	-9.80E+00	1.89E+01	2.24E+01	
MW-40-127	001	127.2	-54	6/5/2007	12:55	1.87E+02	1.62E+02	1.63E+02	2.60E-01	5.05E-01	5.71E-01	7.57E-01	2.98E+00	3.41E+00	-5.59E-03	2.94E+00	3.26E+00	NA	NA	NA	MW-40-127
	002	127.2	-54	7/23/2007	15:15	4.26E+01	1.44E+02	1.68E+02	3.83E-01	5.15E-01	5.73E-01	-1.17E+00	1.67E+00	1.76E+00	2.04E-01	1.59E+00	1.77E+00	NA	NA	NA	
	003	127.2	-54	10/12/2007	11:30	2.83E+01	1.44E+02	1.64E+02	1.01E-01	4.97E-01	6.24E-01	-2.32E+00	3.90E+00	4.06E+00	-1.51E+00	3.72E+00	3.79E+00	NA	NA	NA	
	004	127.2	-54	1/7/2008	12:30	9.75E+00	1.48E+02	1.79E+02	5.17E-01	6.83E-01	7.23E-01	6.45E-01	2.42E+00	2.77E+00	3.24E-01	2.28E+00	2.59E+00	NA	NA	NA	
	006	127.2	-54	5/30/2008	13:00	3.27E+01	9.16E+01	1.63E+02	-4.84E-01	5.30E-01	9.68E-01	6.92E-01	2.23E+00	3.43E+00	1.36E+00	2.00E+00	3.62E+00	NA	NA	NA	
	007	127.2	-54	8/11/2008	10:34	1.68E+02	1.04E+02	1.70E+02	1.65E-01	2.41E-01	4.19E-01	1.24E-01	1.65E+00	2.81E+00	7.30E-03	1.49E+00	2.51E+00	-8.77E+00	1.13E+01	2.01E+01	

See Page 17 for Notes

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	008	127.2	-54	10/28/2008	12:10	7.53E+01	1.70E+02	1.95E+02	4.36E-01	7.10E-01	7.87E-01	-2.53E+00	6.46E+00	6.88E+00	-4.33E+00	8.23E+00	7.68E+00	0.00E+00	1.66E+01	1.93E+01	
	009	127.2	-54	1/19/2009	11:25	9.22E+01	1.33E+02	1.48E+02	-7.90E-02	7.19E-01	9.00E-01	-1.20E+00	3.75E+00	3.94E+00	1.68E+00	3.66E+00	4.45E+00	-3.34E+00	1.85E+01	2.16E+01	
MW-40-162	001	161.7	-88.5	6/5/2007	14:45	1.40E+02	1.56E+02	1.64E+02	2.94E-01	4.53E-01	5.04E-01	-1.67E+00	5.33E+00	4.95E+00	3.85E-01	4.68E+00	4.53E+00	NA	NA	NA	MW-40-162
	002	161.7	-88.5	7/23/2007	17:40	2.59E+01	1.46E+02	1.73E+02	1.19E-01	4.45E-01	5.07E-01	-2.51E-01	2.81E+00	1.75E+00	7.27E-01	1.45E+00	1.69E+00	NA	NA	NA	
	003	161.7	-88.5	10/12/2007	12:54	4.45E+01	1.49E+02	1.69E+02	-5.48E-02	6.20E-01	8.19E-01	-1.11E+00	4.47E+00	4.05E+00	-1.01E+00	3.31E+00	3.47E+00	NA	NA	NA	
	004	161.7	-88.5	1/7/2008	13:10	4.96E+01	1.56E+02	1.82E+02	7.93E-02	3.63E-01	4.48E-01	4.17E-01	2.52E+00	2.87E+00	3.63E-01	2.40E+00	2.72E+00	NA	NA	NA	
	005	161.7	-88.5	8/11/2008	11:44	2.30E+02	1.08E+02	1.75E+02	7.70E-02	4.19E-01	7.81E-01	6.25E-01	2.43E+00	4.16E+00	3.15E+00	2.07E+00	4.11E+00	-5.27E+00	1.22E+01	2.16E+01	
	006	161.7	-88.5	10/28/2008	13:15	1.12E+02	1.77E+02	1.96E+02	2.80E-01	6.35E-01	7.35E-01	-2.00E+00	5.84E+00	6.26E+00	2.11E+00	6.08E+00	7.29E+00	3.75E+00	1.79E+01	2.04E+01	
	007	161.7	-88.5	1/19/2009	11:47	1.07E+02	1.33E+02	1.48E+02	1.32E-01	5.16E-01	6.16E-01	-3.98E-01	3.32E+00	3.67E+00	4.22E-01	2.96E+00	3.41E+00	-9.17E+00	1.85E+01	2.20E+01	
MW-41-40	002	34.4	20.5	4/12/2006	15:00	7.26E+02	2.07E+02	1.56E+02	2.63E+00	1.74E+00	1.58E+00	2.91E+00	2.62E+00	3.03E+00	-7.58E-01	2.55E+00	2.74E+00	NA	NA	NA	MW-41-40
	003	34.4	20.5	5/25/2006	10:00	6.07E+02	2.22E+02	1.88E+02	5.18E+00	1.46E+00	1.07E+00	4.35E+00	1.06E+01	1.24E+01	-1.16E+00	1.07E+01	1.14E+01	NA	NA	NA	
	004	34.4	20.5	6/12/2006	9:50	6.76E+02	2.00E+02	1.51E+02	3.58E+00	6.83E-01	5.31E-01	5.30E+00	1.02E+01	1.19E+01	9.42E-02	9.32E+00	1.02E+01	NA	NA	NA	
	005	34.4	20.5	7/14/2006	8:45	9.83E+02	2.64E+02	2.07E+02	7.02E+00	2.83E+00	2.09E+00	3.44E+00	1.29E+01	1.63E+01	-2.31E+00	1.07E+01	1.29E+01	NA	NA	NA	
	006	34.4	20.5	8/16/2006	13:15	4.47E+02	1.95E+02	1.68E+02	NA	NA	NA	7.39E-01	6.84E+00	8.78E+00	1.70E-01	5.46E+00	7.51E+00	NA	NA	NA	
	007	34.4	20.5	11/13/2006	12:55	4.25E+02	1.38E+02	1.30E+02	4.64E+00	8.70E-01	6.90E-01	5.00E-01	5.70E+00	6.90E+00	1.30E+00	6.90E+00	8.20E+00	3.10E+00	5.70E+00	6.40E+00	
	008	34.4	20.5	6/19/2007	14:45	3.91E+03	7.32E+02	3.60E+02	5.99E+00	1.15E+00	7.49E-01	-3.09E+00	4.42E+00	3.28E+00	-3.47E-01	2.81E+00	3.01E+00	2.21E-01	1.27E+01	1.49E+01	
	009	34.4	20.5	8/14/2007	14:35	3.80E+02	1.97E+02	2.00E+02	5.96E+00	1.17E+00	7.45E-01	0.00E+00	3.52E+00	3.31E+00	1.40E+00	4.08E+00	4.00E+00	NA	NA	NA	
	010	34.4	20.5	1/24/2008	16:28	2.15E+02	1.80E+02	1.93E+02	3.05E+00	1.07E+00	7.54E-01	2.67E+00	2.55E+00	2.21E+00	-5.18E-01	2.00E+00	2.16E+00	NA	NA	NA	
	011	34.4	20.5	10/22/2008	14:49	2.21E+03	7.26E+02	5.92E+02	5.91E+00	1.10E+00	4.21E-01	3.07E+00	6.33E+00	7.66E+00	-3.60E+00	8.64E+00	8.40E+00	NA	NA	NA	
MW-41-63	001	59.5	-4.6	4/12/2006	14:45	7.01E+02	2.03E+02	1.53E+02	5.49E+00	2.21E+00	1.60E+00	6.98E-01	2.27E+00	2.52E+00	-3.89E-02	2.68E+00	2.78E+00	NA	NA	NA	MW-41-63
	002	59.5	-4.6	5/25/2006	10:20	3.61E+02	2.07E+02	1.92E+02	5.22E+00	1.53E+00	1.10E+00	7.91E-02	9.63E+00	1.15E+01	3.51E+00	7.87E+00	1.07E+01	NA	NA	NA	
	003	59.5	-4.6	6/12/2006	10:05	2.68E+02	1.67E+02	1.52E+02	8.45E-01	5.28E-01	5.86E-01	8.20E-01	8.70E+00	9.55E+00	2.12E+00	7.05E+00	8.29E+00	NA	NA	NA	
	004	59.5	-4.6	7/18/2006	13:04	2.43E+02	1.95E+02	1.92E+02	2.17E+00	9.90E-01	8.04E-01	3.04E+00	9.49E+00	1.11E+01	1.73E-01	8.00E+00	8.75E+00	NA	NA	NA	
	005	59.5	-4.6	8/16/2006	13:00	3.56E+02	1.89E+02	1.70E+02	NA	NA	NA	3.69E+00	8.12E+00	1.03E+01	-1.55E+00	7.58E+00	7.11E+00	NA	NA	NA	
	006	59.5	-4.6	11/13/2006	13:10	1.57E+02	1.35E+02	1.30E+02	2.06E+00	6.60E-01	6.60E-01	-1.60E+00	4.50E+00	5.70E+00	0.00E+00	5.40E+00	6.60E+00	3.00E+00	6.60E+00	7.30E+00	
	007	59.5	-4.6	6/20/2007	11:05	5.52E+02	1.97E+02	1.86E+02	7.08E+00	1.28E+00	6.27E-01	-3.10E-01	2.37E+00	2.65E+00	-1.06E-02	2.33E+00	2.65E+00	-4.39E-01	1.26E+01	1.48E+01	
	008	59.5	-4.6	8/14/2007	16:10	5.47E+02	2.04E+02	1.99E+02	3.55E+00	9.02E-01	5.31E-01	-2.83E+00	3.40E+00	3.20E+00	1.32E-01	3.48E+00	3.87E+00	NA	NA	NA	
	009	59.5	-4.6	1/25/2008	10:05	3.03E+02	2.79E+02	2.93E+02	3.76E+00	1.13E+00	8.22E-01	0.00E+00	3.33E+00	1.89E+00	5.24E-02	1.64E+00	1.88E+00	NA	NA	NA	
	010	59.5	-4.6	10/22/2008	12:34	6.91E+02	5.73E+02	5.92E+02	5.69E+00	1.13E+00	4.41E-01	2.60E+00	5.59E+00	6.71E+00	9.04E-01	6.08E+00	7.02E+00	NA	NA	NA	
MW-42-49	001	42.6	27.1	3/23/2006	11:15	2.63E+03	6.60E+02	5.89E+02	5.19E+01	1.72E+00	4.88E-01	1.02E+05	7.14E+02	1.00E+02	1.94E+02	2.78E+01	2.32E+01	NA	NA	NA	MW-42-49
	002	42.6	27.1	3/31/2006	9:29	2.49E+03	4.49E+02	2.37E+02	2.10E+01	9.96E-01	3.67E-01	6.55E+03	1.24E+02	2.76E+01	2.29E+01	2.10E+01	2.50E+01	NA	NA	NA	
	003	42.6	27.1	4/7/2006	17:52	2.51E+03	7.88E+02	7.37E+02	1.09E+02	2.16E+00	4.09E-01	8.11E+04	7.08E+02	1.01E+02	8.81E+01	2.52E+01	1.97E+01	2.22E+03	1.76E+02	5.84E+01	
	004	42.6	27.1	6/18/2007	15:00	1.34E+03	5.00E+02	3.74E+02	7.73E+01	4.04E+00	6.07E-01	1.90E+04	1.85E+03	1.31E+01	4.29E+00	3.71E+00	4.82E+00	1.03E+03	4.53E+01	1.44E+01	
	007	42.6	27.1	10/4/2007	12:40	2.46E+03	2.87E+02	1.93E+02	4.65E+01	3.12E+00	6.02E-01	3.69E+04	3.14E+03	1.83E+01	1.59E+01	6.25E+00	3.61E+00	1.17E+03	4.94E+01	1.88E+01	
	008	42.6	27.1	1/21/2008	16:11	1.32E+03	5.25E+02	4.15E+02	3.34E+01	3.18E+00	9.11E-01	3.38E+04	2.93E+03	2.02E+01	0.00E+00	4.13E+00	5.42E+00	5.01E+02	5.01E+01	2.68E+01	
	010	42.6	27.1	5/13/2008	13:20	3.24E+03	2.56E+02	1.44E+02	2.36E+01	1.54E+00	5.48E-01	1.41E+04	7.89E+02	1.47E+01	1.69E+01	4.47E+00	4.67E+00	7.34E+02	2.85E+01	2.19E+01	
	011	42.6	27.1	8/4/2008	14:24	3.16E+03	2.65E+02	1.91E+02	3.56E+01	1.72E+00	5.59E-01	1.06E+04	6.13E+02	1.20E+01	-8.47E-03	2.69E+00	4.52E+00	3.13E+02	2.60E+01	2.61E+01	
	012	42.6	27.1	9/5/2008	12:52	1.32E+04	8.36E+02	5.08E+02	2.96E+02	4.98E+00	4.02E-01	2.21E+04	1.38E+03	1.58E+01	NA	NA	NA	4.62E+02	2.17E+01	2.03E+01	
	013	42.6	27.1	10/31/2008	13:27	2.60E+03	3.77E+02	1.63E+02	9.61E+01	4.34E+00	4.16E-01	1.78E+04	1.58E+03	1.83E+01	5.88E-01	6.96E+00	7.78E+00	2.71E+02	2.73E+01	1.99E+01	
	014	42.6	27.1	11/17/2008	14:56	1.12E+03	2.01E+02	1.73E+02	1.02E+02	6.96E+00	1.28E+00	1.54E+04	1.16E+03	1.74E+01	3.26E+00	5.21E+00	6.76E+00	2.44E+02	3.00E+01	2.25E+01	
	015	42.6	27.1	1/26/2009	16:16	1.28E+03	3.03E+02	2.06E+02	6.77E+02	1.13E+01	7.44E-01	8.05E+04	8.01E+03	2.66E+01	0.00E+00	5.24E+00	5.56E+00	9.12E+02	4.50E+01	1.90E+01	
MW-42-78	001	74	-4.3	3/24/2006	9:45	1.28E+03	5.87E+02	5.75E+02	3.09E-01	3.90E-01	4.08E-01	4.46E+03	1.36E+02	2.22E+01	1.08E+01	1.71E+01	2.08E+01	NA	NA	NA	MW-42-78
	002	74	-4.3	4/7/2006	17:58	7.92E+02	7.04E+02	7.30E+02	1.03E-01	3.68E-01	3.98E-01	1.98E+03	1.19E+02	3.13E+01	-2.34E+00	2.35E+01	2.51E+01	3.66E+01	1.39E+01	1.43E+01	
	003	74	-4.3	6/18/2007	14:40	3.78E+02	1.88E+02	1.88E+02	3.83E-01	5.34E-01	5.78E-01	6.28E+01	1.21E+01	4.11E+00	2.31E+00	3.40E+00	4.00E+00	2.48E+00	1.32E+01	1.52E+01	
	006	74	-4.3	10/4/2007	13:25	4.34E+02	1.94E+02	1.94E+02	2.33E-01	3.09E-01	3.43E-01	3.04E+02	3.44E+01	4.71E+00	3.10E+00	4.04E+00	5.18E+00	6.86E-01	1.53E+01	1.77E+01	
	007	74	-4.3	1/21/2008	15:33	3.46E+02	1.89E+02	1.96E+02	-2.51E-01	6.81E-01	9.32E-01	1.08E+02	1.52E+01	3.35E+00	1.71E-01	3.33E+00	3.61E+00	9.73E+00	2.42E+01	2.75E+01	
	009	74	-4.3	8/4/2008	12:07	6.18E+02	1.50E+02	1.91E+02	3.91E-01	2.57E-01	3.76E-01	2.71E+00	2.02E+00	3.75E+00	-6.44E-01	2.10E+00	3.29E+00	-7.57E-01	1.52E+01	2.68E+01	
	010	74	-4.3	10/31/2008	13:34	5.62E+02	2.12E+02	1.65E+02	4.17E-02	3.01E-01	3.87E-01	3.31E-01	5.68E+00	6.34E+00	8.32E-01	6.72E+00	7.68E+00	3.69E+00	1.77E+01	2.02E+01	
	011	74	-4.3	1/30/2009	11:22	3.65E+02	2.18E+02	2.00E+02	4.40E-01	6.45E-01	7.03E-01	6.70E-01	3.32E+00	3.88E+00	-1.89E-01	3.57E+00	3.99E+00	NA	NA	NA	
MW-43-28	002	23.5	25.3	4/12/2006	12:45	3.46E+02	1.79E+02	1.59E+02	9.40E-02	7.40E-01	8.06E-01	-1.44E+00	2.52E+00	2.54E+00	1.56E+00	2.24E+00	2.56E+00	NA	NA	NA	MW-43-28
	003	23.5	25.3	5/25/2006	12:10	1.20E+02	1.83E+02	1.89E+02	2.65E+00	1.89E+00	1.77E+00	-8.64E-01	9.47E+00	1.03E+01	-1.33E-01	9.42E+00	1.06E+01	NA	NA	NA	
	004	23.5	25.3	6/12/2006	12:45	2.30E+02	1.62E+02	1.52E+02	1.39E-01	4.27E-01	5.27E-01	2.85E+00	6.93E+00	7.82E+00	-7.55E-01	5.93E+00	6.39E+00	NA	NA	NA	
	005	23.5	25.3	7/12/2006	9:40	1.09E+02	1.88E+02	1.95E+02	1.10E+00	1.69E+00	1.72E+00	2.41E+00	9.87E+00	1.11E+01	-7.95E-01	8.58E+00	9.11E+00	NA	NA	NA	
	006	23.5	25.3	8/16/2006	12:10	2.60E+02	1.83E+02	1.72E+02	NA	NA	NA	5.47E-01	8.43E-01	9.56E-01	-5.16E-01	7.70E-01	8.30E-01	NA	NA	NA	
	007	23.5	25.3	6/18/2007	13:30	2.78E+02	1.70E+02	1.74E+02	1.07E+00	5.97E-01	4.86E-01	-3.68E-01	3.13E+00	3.39E+00	-3.72E-01	3.31E+00	3.46E+00	3.58E+00	1.50E+01	1.73E+01	
	008	23.5	25.3	8/13/2007	11:35	9.56E+01	1.71E+02	1.93E+02	-6.25E-01	7.50E-01	1.02E+00	-7.36E-01	3.57E+00	3.68E+00	2.77E-01	2.70E+00	3.12E+00	NA	NA	NA	
	009	23.5	25.3	1/25/2008	11:11	3.06E+02	2.82E+02	2.96E+02	1.46E-01	6.06E-01	7.38E-01	1.88E+00	2.16E+00	2.66E+00	1.46E+00	2.51E+00	3.03E+00	8.44E+00	1.76E+01	1.99E+01	
	010	23.5	25.3	10/31/2008	14:17	2.65E+02	1.58E+02	1.66E+02	-1.08E-01	3.95E-01	5.66E-01	4.07E+00	5.19E+00	6.44E+00	-1.16E+00	6.21E+00	6.63E+00	NA	NA	NA	
MW-43-62	002	51	-2.2	4/12/2006	11:55	2.00E+02	1.65E+02	1.58E+02	4.34E-01	4.63E-01	4.83E-01	3.27E+00	4.04E+00	3.73E+00	1.82E+00	3.09E+00	3.47E+00	NA	NA	NA	MW-43-62
	003	51	-2.2	5/25/2006	12:30	1.24E+02	1.77E+02	1.82E+02	3.23E-01	1.64E+00	1.77E+00	-1.21E+00	1.26E+01	1.36E+01	-2.10E+00	9.81E+00	1.02E+01	NA	NA	NA	
	004	51	-2.2	6/12/2006	12:40	1.29E+02	1.40E+02	1.38E+02	1.25E+00	5.58E-01	5.86E-01	4.97E+00	7.02E+00	7.98E+00	-6.81E-01	7.19E+00	7.85E+00	NA	NA	NA	
	005	51	-2.2	7/12/2006	10:05	2.04E+01	1.53E+02	1.65E+02	4.76E-01	1.46E+00	1.54E+00	1.34E+01	1.10E+01	1.36E+01	3.73E-01	1.01E+01	1.11E+01	NA	NA	NA	
	006	51	-2.2	8/16/2006	11:55	1.08E+02	1.67E+02	1.70E+02	NA	NA	NA	2.23E-01	9.10E-01	1.01E+00	-1.95E-01	8.33E-01	9.13E-01	NA	NA	NA	
	007	51	-2.2	6/19/2007	9:36	1.97E+02	1.88E+02	2.02E+02	8.55E-01	6.58E-01	6.40E-01	-6.77E-01	3.21E+00	3.42E+00	-8.52E-01	3.10E+00	3.26E+00	1.38E+00	1.33E+01	1.55E+01	
	008	51	-2.2	8/13/2007	12:42	1.14E+02	1.73E+02	1.92E+02	1.29E-01	6.90E-01	8.27E-01	-1.18E+00	3.65E+00	3.89E+00	1.53E-01	3.31E+00	3.80E+00	NA	NA	NA	
	009	51	-2.2	1/25/2008	10:57	1.23E+02	1.74E+02	1.93E+02	1.00E+00	6.47E-01	5.52E-01	4.31E-01	2.42E+00	2.39E+00	-1.11E+00	2.07E+00	2.10E+00	3.76E+00	1.67E+01	1.91E+01	
	010	51	-2.2	10/31/2008	13:16	2.25E+02	1.56E+02	1.66E+02	1.97E-01	4.13E-01	4.74E-01	-3.65E-03	6.45E+00	6.96E+00	2.59E+00	6.30E+00	7.60E+00	NA	NA	NA	
MW-44-66	001	62.4	31.1	3/28/2006	14:05	3.38E+02	1.91E+02	1.73E+02	7.38E-02	1.53E+00	1.67E+00	6.54E-01	1.05E+01	1.17E+01	-2.87E+00	1.02E+01	1.09E+01	NA	NA	NA	MW-44-66
	002	62.4	31.1	5/24/2006	9:05	2.37E+02	1.97E+02	1.92E+02	7.41E-01	4.11E-01	4.45E-01	-3.07E-01	8.97E+00	9.69E+00	4.85E+00	9.06E+00	1.11E+01	NA	NA	NA	
	003	62.4	31.1	7/20/2006	11:15	8.92E+02	2.27E+02	1.63E+02	7.55E-01	1.22E+00	1.31E+00	3.54E+01	1.74E+01	9.59E+00	6.24E-01	7.37E+00	8.48E+00	NA	NA	NA	
	004	63	30.5	6/29/2007	15:00	2.68E+02	1.73E+02	1.84E+02	-4.25E-01	7.28E-01	9.04E-01	2.64E-01	3.03E+00	3.47E+00	7.78E-01	3.40E+00	3.98E+00	NA	NA	NA	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	005	63	30.5	8/14/2007	13:10	4.17E+02	1.98E+02	2.00E+02	9.30E-02	4.72E-01	5.75E-01	-8.93E-01	2.91E+00	3.08E+00	-3.39E-01	3.40E+00	3.11E+00	NA	NA	NA	
	006	63	30.5	10/31/2007	13:30	5.13E+02	1.82E+02	1.81E+02	3.77E-01	4.10E-01	4.21E-01	2.76E+00	4.29E+00	4.81E+00	1.91E+00	3.90E+00	4.71E+00	NA	NA	NA	
	007	63	30.5	1/24/2008	12:55	2.91E+02	2.00E+02	2.12E+02	2.85E-01	4.53E-01	4.99E-01	1.73E+01	4.35E+00	2.31E+00	1.40E+00	3.17E+00	2.43E+00	NA	NA	NA	
	008	63	30.5	4/30/2008	15:38	1.61E+02	1.19E+02	1.96E+02	4.11E-02	4.06E-01	7.89E-01	-8.72E-02	2.06E+00	3.38E+00	9.13E-01	2.44E+00	4.27E+00	NA	NA	NA	
	009	63	30.5	7/25/2008	12:18	5.50E+02	2.55E+02	3.75E+02	3.07E-01	3.66E-01	6.17E-01	-2.33E+00	2.53E+00	3.03E+00	-2.09E-01	1.74E+00	2.85E+00	NA	NA	NA	
	010	63	30.5	10/23/2008	13:17	3.18E+02	1.61E+02	1.66E+02	3.23E-01	3.83E-01	3.92E-01	-3.20E+00	5.21E+00	5.30E+00	-1.59E+00	5.73E+00	6.02E+00	NA	NA	NA	
	011	63	30.5	2/3/2009	9:40	2.06E+02	1.92E+02	1.97E+02	4.52E-01	7.98E-01	8.95E-01	1.96E+00	3.53E+00	4.18E+00	3.09E+00	3.06E+00	4.12E+00	NA	NA	NA	
MW-44-102	001	91	2.5	6/13/2006	10:35	2.53E+02	2.01E+02	1.96E+02	3.53E-01	9.93E-01	1.26E+00	-3.22E+00	8.26E+00	8.67E+00	-7.71E-01	7.99E+00	8.52E+00	NA	NA	NA	MW-44-102
	002	91	2.5	7/20/2006	10:50	3.16E+02	1.82E+02	1.64E+02	-3.39E-01	1.05E+00	1.29E+00	-2.99E+00	9.39E+00	9.83E+00	-2.34E+00	9.50E+00	9.39E+00	NA	NA	NA	
	003	91	2.5	8/4/2006	9:40	7.61E+02	2.30E+02	1.81E+02	NA	NA	NA	-4.04E+00	8.10E+00	7.76E+00	-2.00E+00	7.01E+00	6.82E+00	NA	NA	NA	
	004	91	2.5	9/13/2006	11:30	2.67E+02	1.94E+02	2.00E+02	NA	NA	NA	7.19E+00	9.68E+00	1.12E+01	-4.76E-01	8.18E+00	8.99E+00	NA	NA	NA	
	005	80	13.5	6/19/2007	17:46	2.98E+02	1.76E+02	1.83E+02	-1.33E-01	4.81E-01	6.39E-01	1.88E+00	2.15E+00	2.63E+00	6.41E-01	2.02E+00	2.38E+00	-4.92E+00	1.31E+01	1.58E+01	
	006	80	13.5	8/14/2007	14:55	2.84E+02	1.89E+02	1.99E+02	1.97E-01	7.63E-01	8.99E-01	-1.46E+00	2.76E+00	2.77E+00	-1.35E+00	2.79E+00	2.73E+00	NA	NA	NA	
	007	80	13.5	10/31/2007	12:01	3.54E+02	1.76E+02	1.82E+02	-2.58E-01	7.75E-01	9.60E-01	-6.60E-01	2.88E+00	3.11E+00	-1.23E+00	3.60E+00	3.11E+00	NA	NA	NA	
	008	80	13.5	1/24/2008	13:05	4.17E+02	2.94E+02	2.96E+02	2.06E-01	5.16E-01	6.04E-01	1.18E+01	4.64E+00	3.19E+00	-4.44E-03	2.85E+00	3.11E+00	NA	NA	NA	
	009	80	13.5	4/30/2008	15:28	2.56E+02	1.22E+02	1.96E+02	7.90E-02	3.71E-01	7.13E-01	1.03E+00	2.03E+00	3.63E+00	-2.07E+00	3.04E+00	4.52E+00	NA	NA	NA	
	010	80	13.5	7/25/2008	12:18	4.37E+02	2.46E+02	3.75E+02	-2.83E-02	1.83E-01	3.21E-01	-4.07E-01	1.78E+00	2.88E+00	1.35E+00	1.87E+00	3.41E+00	NA	NA	NA	
	011	80	13.5	10/23/2008	13:48	4.75E+02	1.68E+02	1.65E+02	2.01E-01	4.65E-01	5.44E-01	1.72E+00	6.24E+00	7.28E+00	2.39E+00	8.12E+00	8.47E+00	NA	NA	NA	
	012	80	13.5	2/2/2009	12:06	2.57E+02	1.94E+02	1.93E+02	4.66E-01	6.12E-01	6.71E-01	9.83E-01	3.39E+00	4.02E+00	-9.65E-01	3.53E+00	3.74E+00	NA	NA	NA	
MW-45-42	001	34.4	19.2	4/4/2006	17:20	5.18E+02	2.22E+02	2.17E+02	8.83E-01	5.94E-01	5.95E-01	1.41E+01	1.35E+01	1.54E+01	-4.38E-02	1.22E+01	1.34E+01	NA	NA	NA	MW-45-42
	002	34.4	19.2	5/25/2006	9:25	1.82E+03	3.74E+02	2.45E+02	9.78E-01	1.14E+00	1.18E+00	-7.92E+00	1.21E+01	1.17E+01	-3.97E+00	1.21E+01	1.23E+01	NA	NA	NA	
	003	34.4	19.2	6/12/2006	10:45	2.27E+03	4.13E+02	2.15E+02	1.02E+00	6.80E-01	7.49E-01	9.06E-02	5.68E+00	6.29E+00	2.61E+00	5.68E+00	6.70E+00	NA	NA	NA	
	004	34.4	19.2	7/14/2006	9:30	4.19E+02	2.18E+02	2.00E+02	0.00E+00	1.45E+00	1.59E+00	1.22E+00	8.17E+00	9.27E+00	2.33E+00	9.82E+00	1.13E+01	NA	NA	NA	
	005	34.4	19.2	8/11/2006	10:00	3.16E+03	5.51E+02	2.71E+02	NA	NA	NA	-1.16E-01	1.51E+00	1.64E+00	-4.26E-01	1.40E+00	1.54E+00	NA	NA	NA	
	006	34.4	19.2	9/13/2006	11:50	4.15E+03	7.32E+02	3.27E+02	NA	NA	NA	-1.58E+00	5.85E+00	6.00E+00	-1.46E+00	5.39E+00	5.27E+00	NA	NA	NA	
	007	34.4	19.2	11/13/2006	13:20	5.25E+02	1.38E+02	1.40E+02	-7.10E-01	7.50E-01	8.50E-01	3.70E+00	5.40E+00	5.60E+00	5.00E-01	6.90E+00	8.30E+00	3.00E-01	3.60E+00	4.10E+00	
	008	37	16.6	6/21/2007	15:05	2.32E+03	6.27E+02	4.36E+02	-6.08E-02	6.25E-01	7.76E-01	1.31E-01	4.14E+00	4.59E+00	2.51E+00	2.82E+00	4.08E+00	3.58E+00	1.30E+01	1.49E+01	
	009	37	16.6	8/15/2007	11:30	1.16E+03	1.80E+02	1.47E+02	-3.79E-01	7.74E-01	9.47E-01	1.92E+00	2.76E+00	3.41E+00	1.19E+00	2.60E+00	3.23E+00	NA	NA	NA	
	010	37	16.6	10/5/2007	11:05	2.22E+03	3.05E+02	1.50E+02	3.55E-01	5.10E-01	5.56E-01	0.00E+00	4.13E+00	1.99E+00	3.65E-01	1.94E+00	2.21E+00	NA	NA	NA	
	011	37	16.6	1/25/2008	12:15	1.44E+03	3.90E+02	2.96E+02	2.08E-01	5.15E-01	6.03E-01	1.60E+00	2.43E+00	2.88E+00	5.96E-01	2.31E+00	2.66E+00	NA	NA	NA	
	012	37	16.6	5/1/2008	15:15	1.13E+03	1.51E+02	1.96E+02	-4.10E-02	3.11E-01	6.29E-01	6.65E-01	1.99E+00	3.47E+00	-1.17E+00	3.62E+00	4.55E+00	NA	NA	NA	
	013	37	16.6	7/25/2008	16:40	2.32E+03	3.77E+02	3.74E+02	3.02E-01	2.75E-01	4.42E-01	-1.77E+00	1.76E+00	2.53E+00	1.09E+00	1.76E+00	3.19E+00	NA	NA	NA	
	014	37	16.6	10/22/2008	14:55	3.14E+03	8.03E+02	5.91E+02	4.62E-01	5.15E-01	5.29E-01	-1.64E+00	5.07E+00	5.26E+00	-3.00E+00	4.93E+00	4.36E+00	NA	NA	NA	
	015	37	16.6	2/2/2009	18:02	1.41E+03	3.27E+02	1.97E+02	-1.78E-01	4.41E-01	6.64E-01	-1.41E+00	2.57E+00	2.67E+00	-1.27E+00	2.55E+00	2.57E+00	NA	NA	NA	
MW-45-61	001	57.7	-4.1	4/4/2006	17:00	2.98E+02	2.18E+02	2.23E+02	1.82E-01	5.03E-01	5.39E-01	8.62E+00	1.14E+01	1.32E+01	1.40E+00	1.02E+01	1.17E+01	NA	NA	NA	MW-45-61
	002	57.7	-4.1	5/25/2006	9:10	1.71E+03	3.57E+02	2.37E+02	5.63E-01	9.81E-01	1.03E+00	7.76E-01	9.14E+00	1.02E+01	5.35E+00	1.06E+01	1.31E+01	NA	NA	NA	
	003	57.7	-4.1	6/12/2006	11:00	1.02E+03	2.31E+02	1.56E+02	4.81E-01	5.85E-01	6.90E-01	-4.60E+00	6.63E+00	7.11E+00	9.35E-02	6.22E+00	7.59E+00	NA	NA	NA	
	004	57.7	-4.1	7/20/2006	12:50	3.72E+02	1.88E+02	1.66E+02	0.00E+00	1.36E+00	1.59E+00	-3.98E-01	5.08E+00	5.30E+00	1.33E+00	3.96E+00	5.02E+00	NA	NA	NA	
	005	57.7	-4.1	8/11/2006	9:45	1.35E+03	2.88E+02	1.91E+02	NA	NA	NA	6.43E+00	9.17E+00	1.16E+01	-8.33E-01	9.00E+00	9.75E+00	NA	NA	NA	
	006	57.7	-4.1	9/13/2006	9:30	1.45E+03	3.09E+02	2.04E+02	NA	NA	NA	-6.55E+00	7.21E+00	5.92E+00	-3.06E+00	7.35E+00	6.87E+00	NA	NA	NA	
	007	57.7	-4.1	11/13/2006	11:20	9.57E+02	1.44E+02	1.40E+02	1.73E+00	7.50E-01	7.60E-01	-3.00E-01	4.50E+00	5.30E+00	-3.20E+00	4.50E+00	6.30E+00	2.50E+00	6.60E+00	7.30E+00	
	008	58	-4.4	6/21/2007	12:55	1.47E+03	5.42E+02	4.34E+02	-7.02E-02	7.47E-01	9.67E-01	3.52E+00	4.72E+00	3.52E+00	-7.21E-01	3.56E+00	3.69E+00	3.35E+00	1.49E+01	1.71E+01	
	009	58	-4.4	8/15/2007	11:55	1.50E+03	1.88E+02	1.41E+02	4.74E-02	7.90E-01	9.41E-01	3.33E+00	4.25E+00	4.03E+00	-6.51E-01	3.86E+00	3.59E+00	NA	NA	NA	
	010	58	-4.4	10/5/2007	11:30	2.15E+03	3.03E+02	1.52E+02	4.87E-01	5.23E-01	5.36E-01	-1.73E-01	1.43E+00	1.56E+00	6.59E-02	1.46E+00	1.62E+00	NA	NA	NA	
	011	58	-4.4	1/25/2008	11:55	2.66E+03	4.80E+02	2.96E+02	4.26E-01	5.76E-01	6.21E-01	2.42E+00	3.60E+00	2.52E+00	-2.05E-01	2.88E+00	3.19E+00	NA	NA	NA	
	012	58	-4.4	5/1/2008	10:16	2.21E+03	1.80E+02	1.95E+02	6.93E-01	4.96E-01	7.66E-01	3.16E-01	2.07E+00	3.59E+00	-1.29E+00	2.25E+00	3.53E+00	NA	NA	NA	
	013	58	-4.4	7/25/2008	13:51	1.80E+03	3.46E+02	3.76E+02	2.36E-01	2.45E-01	4.05E-01	-1.88E+00	1.91E+00	2.80E+00	7.83E-01	1.91E+00	3.40E+00	NA	NA	NA	
	014	58	-4.4	10/22/2008	9:33	1.27E+03	6.35E+02	5.90E+02	1.99E-01	5.82E-01	6.91E-01	-1.52E+00	5.07E+00	5.32E+00	1.04E+00	5.73E+00	6.58E+00	NA	NA	NA	
	015	58	-4.4	2/2/2009	13:13	1.36E+03	3.24E+02	1.99E+02	-1.47E-01	7.61E-01	9.47E-01	9.93E-01	3.59E+00	4.20E+00	2.30E-01	3.23E+00	3.66E+00	NA	NA	NA	
MW-46	002	10.5	7.6	4/12/2006	17:15	1.38E+03	2.81E+02	1.76E+02	6.24E-01	4.82E-01	4.89E-01	9.28E-01	2.98E+00	3.31E+00	-5.36E-01	2.67E+00	2.88E+00	NA	NA	NA	MW-46
	003	10.5	7.6	5/24/2006	12:55	9.00E+02	1.71E+03	6.33E+02	3.07E-01	6.15E-01	7.47E-01	-7.06E-02	9.87E+00	1.18E+01	5.38E+00	8.80E+00	1.21E+01	NA	NA	NA	
	003	10.5	7.6	5/24/2006	12:55	6.23E+02	2.24E+02	1.87E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	10.5	7.6	6/13/2006	13:10	6.79E+01	1.80E+02	1.91E+02	3.46E-01	1.04E+00	1.33E+00	2.58E+00	7.28E+00	8.29E+00	-9.79E-01	8.23E+00	8.81E+00	NA	NA	NA	
	005	10.5	7.6	7/12/2006	13:23	7.86E+02	2.36E+02	1.92E+02	5.77E-01	1.21E+00	1.23E+00	3.98E+00	9.37E+00	1.09E+01	4.49E+00	8.68E+00	1.06E+01	NA	NA	NA	
	006	10.5	7.6	8/4/2006	8:40	1.15E+03	2.75E+02	1.98E+02	NA	NA	NA	1.15E+00	5.05E+00	6.52E+00	-3.50E+00	5.84E+00	5.97E+00	NA	NA	NA	
	007	10.5	7.6	9/13/2006	13:15	1.47E+03	3.30E+02	2.19E+02	NA	NA	NA	3.73E-01	6.01E+00	6.95E+00	2.75E+00	7.27E+00	6.27E+00	NA	NA	NA	
	008	10.5	7.6	6/14/2007	13:50	3.43E+03	5.64E+02	2.95E+02	2.15E-01	4.65E-01	5.35E-01	3.08E-01	3.92E+00	4.37E+00	8.52E-02	3.65E+00	4.09E+00	-1.05E+00	1.52E+01	1.78E+01	
	009	10.5	7.6	8/1/2007	11:35	6.62E+02	3.50E+02	2.44E+02	7.89E-02	3.66E-01	4.49E-01	6.63E-01	3.52E+00	3.80E+00	6.33E-02	2.43E+00	2.77E+00	NA	NA	NA	
	010	10.5	7.6	10/22/2007	14:20	1.67E+03	5.27E+02	4.01E+02	2.17E-01	4.72E-01	5.44E-01	4.68E-01	2.97E+00	3.34E+00	-7.20E-01	2.94E+00	3.09E+00	NA	NA	NA	
	011	10.5	7.6	1/22/2008	12:19	5.49E+02	1.74E+02	1.70E+02	5.30E-01	7.71E-01	8.47E-01	-3.99E-01	2.64E+00	2.84E+00	1.73E+00	2.61E+00	3.31E+00	NA	NA	NA	
	012	10.5	7.6	4/29/2008	16:00	5.21E+02	1.53E+02	2.20E+02	4.10E-01	3.51E-01	5.64E-01	7.87E-01	2.12E+00	3.75E+00	4.57E-01	2.24E+00	3.90E+00	NA	NA	NA	
	013	10.5	7.6	7/24/2008	16:56	7.71E+02	2.75E+02	3.77E+02	2.74E-01	3.07E-01	5.10E-01	6.05E-01	1.96E+00	3.38E+00	-1.89E+00	2.10E+00	3.09E+00	NA	NA	NA	
	014	10.5	7.6	10/20/2008	15:27	1.38E+03	6.44E+02	5.89E+02	9.33E-01	5.85E-01	5.11E-01	-2.27E+00	5.88E+00	5.91E+00	-5.88E-01	5.63E+00	6.09E+00	NA	NA	NA	
	015	10.5	7.6	2/5/2009	13:46	1.00E+03	2.88E+02	1.96E+02	-1.30E-01	6.23E-01	7.82E-01	-1.68E+00	2.78E+00	2.71E+00	7.02E-01	2.82E+00	3.28E+00	NA	NA	NA	
MW-47-56	002	53.2	17.1	4/13/2006	12:05	7.60E+02	2.22E+02	1.67E+02	2.27E+00	7.65E-01	7.30E-01	8.27E-02	5.45E+00	5.95E+00	-4.55E-01	5.30E+00	5.77E+00	NA	NA	NA	MW-47-56
	003	53.2	17.1	7/18/2006	10:13	1.54E+02	1.95E+02	1.99E+02	1.91E-01	1.47E+00	1.59E+00	3.70E+00	7.80E+00	9.34E+00	2.47E+00	1.04E+01	1.29E+01	NA	NA	NA	
	004	53.2	17.1	6/20/2007	10:07	5.29E+02	1.95E+02	1.85E+02	5.93E-01	5.25E-01	5.10E-01	0.00E+00	6.66E+00	3.37E+00	3.57E+00	3.71E+00	4.73E+00	NA	NA	NA	
	004	53.2	17.1	6/20/2007	10:07	NA	NA	NA	NA	NA	NA	0.00E+00	4.28E+00	3.79E+00	1.63E+00	3.17E+00	3.79E+00	3.81E+00	1.32E+01	1.51E+01	
	005	53.2	17.1	8/10/2007	11:00	2.70E+02	1.88E+02	2.02E+02	5.07E-01	8.04E-01	8.91E-01	-3.84E-01	3.48E+00	3.75E+00	1.49E-01	2.94E+00	3.37E+00	NA	NA	NA	
MW-47-80	001	74	-3.7	4/13/2006	11:45	2.33E+03	4.28E+02	2.29E+02	2.73E+00	7.35E-01	6.53E-01	-5.82E-01	4.48E+00	5.14E+00	2.25E-01	3.91E+00	4.76E+00	NA	NA	NA	MW-47-80
	002	74	-3.7	7/18/2006	8:51	1.87E+03	3.87E+02	2.58E+02	2.86E+00	1.43E+00	1.14E+00	1.67E+00	1.05E+01	1.19E+01	2.39E+00	9.21E+00	1.09E+01	NA	NA	NA	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	003	74	-3.7	6/19/2007	11:00	2.36E+03	5.94E+02	3.58E+02	3.27E+00	8.98E-01	5.28E-01	2.05E+00	3.81E+00	4.58E+00	-2.27E+00	4.82E+00	3.92E+00	4.08E-01	1.18E+01	1.38E+01	
	004	74	-3.7	8/10/2007	12:21	3.51E+03	7.25E+02	4.52E+02	3.55E+00	1.21E+00	9.05E-01	-9.39E-02	3.21E+00	3.56E+00	-8.20E-02	3.18E+00	3.50E+00	NA	NA	NA	
MW-48-23	001	20.4	-5	2/8/2006	10:10	1.66E+02	3.26E+02	3.42E+02	1.93E-01	5.04E-01	5.94E-01	-2.14E-01	1.04E+01	1.13E+01	1.46E+00	9.95E+00	1.12E+01	NA	NA	NA	MW-48-23
	002	20.4	-5	4/12/2006	9:58	1.24E+02	4.08E+02	4.52E+02	-1.10E-01	3.90E-01	4.40E-01	3.25E+00	9.75E+00	7.26E+00	2.49E+00	7.47E+00	6.18E+00	NA	NA	NA	
	003	20.4	-5	4/27/2006	13:42	2.38E+02	1.94E+02	2.03E+02	-2.50E-02	4.58E-01	5.04E-01	-1.88E+00	5.06E+00	5.65E+00	-1.19E-01	4.40E+00	5.27E+00	NA	NA	NA	
	004	20.4	-5	5/22/2006	10:30	7.55E+02	4.26E+02	4.46E+02	2.42E-01	2.88E-01	3.10E-01	3.22E+00	9.67E+00	7.12E+00	4.29E+00	1.29E+01	9.62E+00	NA	NA	NA	
	005	20.4	-5	6/9/2006	11:15	6.03E+01	4.39E+02	6.24E+02	3.70E-01	3.60E-01	4.00E-01	2.59E+00	7.76E+00	5.90E+00	3.25E+00	9.74E+00	7.61E+00	1.60E+01	1.53E+01	1.62E+01	
	005	20.4	-5	6/9/2006	11:15	2.95E+02	4.14E+02	4.53E+02	3.10E-01	9.88E-01	1.26E+00	1.09E+00	5.21E+00	5.80E+00	3.08E+00	5.41E+00	5.96E+00	NA	NA	NA	
	005	20.4	-5	6/9/2006	11:15	7.37E+02	2.09E+02	1.56E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	006	20.4	-5	7/6/2006	12:00	4.21E+02	4.17E+02	4.52E+02	-2.20E-01	4.20E-01	4.90E-01	2.55E+00	7.64E+00	5.49E+00	2.60E+00	7.79E+00	5.78E+00	NA	NA	NA	
	007	20.4	-5	8/8/2006	10:30	1.04E+02	1.68E+02	1.72E+02	7.00E-02	6.30E-01	7.00E-01	1.93E+00	4.76E+00	5.56E+00	1.99E+00	4.41E+00	5.37E+00	NA	NA	NA	
	008	20.4	-5	9/5/2006	10:05	2.44E+01	1.59E+02	1.72E+02	-6.00E-02	7.80E-01	8.60E-01	-2.90E+00	7.82E+00	8.12E+00	1.05E-01	8.58E+00	1.02E+01	NA	NA	NA	
	009	20.4	-5	11/22/2006	9:23	1.67E+02	4.08E+02	4.50E+02	-7.00E-02	6.30E-01	7.10E-01	3.91E+00	1.17E+01	8.71E+00	3.22E+00	9.67E+00	7.76E+00	NA	NA	NA	
	010	20.4	-5	2/9/2007	10:54	2.72E+02	1.68E+02	1.70E+02	-1.60E-01	1.53E+00	1.70E+00	3.70E-01	1.80E+00	2.00E+00	8.30E-01	2.07E+00	2.30E+00	NA	NA	NA	
	011	20.4	-5	8/16/2007	11:00	3.93E+02	1.64E+02	1.61E+02	-3.94E-01	5.69E-01	8.47E-01	1.66E+00	4.92E+00	3.58E+00	5.36E-01	3.03E+00	3.55E+00	NA	NA	NA	
MW-48-37	001	36	-20.6	2/10/2006	14:10	1.00E+01	4.26E+02	4.73E+02	NA	NA	NA	1.18E+00	3.54E+00	2.53E+00	2.07E+00	6.21E+00	4.39E+00	NA	NA	NA	MW-48-37
	002	36	-20.6	4/12/2006	10:00	-5.40E+01	4.02E+02	4.52E+02	2.10E-01	3.90E-01	4.30E-01	1.70E+00	5.09E+00	3.53E+00	3.34E+00	1.00E+01	6.89E+00	NA	NA	NA	
	003	36	-20.6	4/27/2006	13:20	-2.15E+02	1.77E+02	2.04E+02	-4.96E-02	3.79E-01	4.20E-01	7.95E+00	9.91E+00	1.01E+01	-3.17E-01	8.42E+00	9.20E+00	NA	NA	NA	
	004	36	-20.6	5/22/2006	10:00	1.39E+02	4.02E+02	4.46E+02	-1.20E-01	3.60E-01	4.10E-01	1.35E+00	4.05E+00	2.94E+00	2.31E+00	6.94E+00	5.00E+00	NA	NA	NA	
	005	36	-20.6	6/9/2006	11:30	5.96E+02	1.38E+03	6.24E+02	1.05E-01	7.89E-01	1.03E+00	1.50E+00	5.71E+00	6.44E+00	-1.58E+00	5.25E+00	5.52E+00	NA	NA	NA	
	005	36	-20.6	6/9/2006	11:30	1.43E+02	1.67E+02	1.66E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	36	-20.6	6/9/2006	11:30	1.66E+02	4.11E+02	4.53E+02	2.08E+00	4.50E-01	4.00E-01	2.40E+00	7.20E+00	4.95E+00	4.14E+00	1.24E+01	8.50E+00	4.58E+00	1.35E+01	1.46E+01	
	006	36	-20.6	7/6/2006	8:45	1.47E+02	4.08E+02	4.52E+02	1.70E-01	8.10E-01	8.80E-01	2.10E+00	6.31E+00	4.44E+00	4.21E+00	1.26E+01	8.77E+00	NA	NA	NA	
	007	36	-20.6	8/8/2006	10:20	1.09E+01	1.55E+02	1.69E+02	6.00E-02	6.90E-01	7.80E-01	1.86E+00	5.68E+00	6.65E+00	2.95E-01	5.29E+00	5.93E+00	NA	NA	NA	
	008	36	-20.6	9/5/2006	10:20	5.73E+02	2.12E+02	1.75E+02	0.00E+00	6.90E-01	7.70E-01	-2.86E-01	5.59E+00	6.04E+00	1.60E+00	5.35E+00	6.37E+00	NA	NA	NA	
	009	36	-20.6	11/22/2006	9:34	2.62E+02	4.11E+02	4.50E+02	0.00E+00	6.30E-01	7.00E-01	1.60E+00	4.80E+00	3.39E+00	3.58E+00	1.07E+01	7.47E+00	NA	NA	NA	
	010	36	-20.6	2/9/2007	10:59	2.70E+01	1.65E+02	1.70E+02	-1.40E-01	1.38E+00	1.50E+00	-6.10E-01	1.26E+00	1.50E+00	-4.70E-01	1.38E+00	1.60E+00	NA	NA	NA	
	011	36	-20.6	8/16/2007	11:07	1.29E+02	1.59E+02	1.75E+02	4.11E-02	6.27E-01	7.94E-01	1.78E+00	4.35E+00	4.53E+00	-4.00E-01	4.51E+00	5.01E+00	NA	NA	NA	
MW-49-26	001	19.1	-4.4	3/22/2006	16:50	1.54E+04	2.81E+03	1.82E+03	1.84E+01	9.96E-01	4.29E-01	-5.28E-01	9.40E+00	1.02E+01	-1.35E+00	8.98E+00	9.69E+00	NA	NA	NA	MW-49-26
	003	19.1	-4.4	5/19/2006	14:55	9.40E+03	1.50E+03	4.96E+02	9.03E+00	9.40E-01	5.45E-01	2.65E+00	7.87E+00	9.09E+00	1.15E+00	5.99E+00	6.92E+00	NA	NA	NA	
	003	19.1	-4.4	5/19/2006	14:55	1.42E+04	6.75E+03	6.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	19.1	-4.4	6/6/2006	9:55	1.40E+04	2.16E+03	4.95E+02	1.41E+01	1.17E+00	5.80E-01	6.14E+00	1.18E+01	1.41E+01	2.42E+00	1.02E+01	1.21E+01	NA	NA	NA	
	005	19.1	-4.4	7/7/2006	9:15	1.00E+04	2.06E+03	1.51E+03	1.26E+01	2.67E+00	1.51E+00	1.38E+00	8.45E+00	9.49E+00	-1.98E+00	8.42E+00	8.90E+00	NA	NA	NA	
	006	19.1	-4.4	8/1/2006	9:28	1.37E+04	1.13E+03	6.16E+02	NA	NA	NA	-5.93E+00	6.06E+00	4.56E+00	-3.09E+00	5.14E+00	4.31E+00	3.67E+01	3.09E+01	3.26E+01	
	007	19.1	-4.4	8/28/2006	12:30	1.10E+04	1.12E+03	7.68E+02	NA	NA	NA	-2.69E+00	5.42E+00	5.50E+00	-3.57E+00	4.78E+00	3.71E+00	NA	NA	NA	
	008	19.1	-4.4	11/15/2006	11:28	6.39E+03	1.38E+03	1.00E+03	1.55E+01	1.95E+00	7.70E-01	8.00E-01	3.00E+00	3.40E+00	-3.00E-01	4.20E+00	5.00E+00	8.40E+00	2.04E+01	2.20E+01	
	009	19.1	-4.4	6/26/2007	12:30	7.76E+03	3.48E+02	1.79E+02	1.27E+01	1.40E+00	7.13E-01	1.36E+00	2.55E+00	2.83E+00	-8.28E-01	2.23E+00	2.31E+00	-1.92E+00	1.28E+01	1.50E+01	
	010	19.1	-4.4	8/9/2007	11:17	6.72E+03	9.50E+02	4.62E+02	1.43E+01	2.16E+00	9.06E-01	4.09E-01	3.72E+00	4.23E+00	2.50E+00	3.51E+00	4.54E+00	7.93E-01	2.07E+01	2.42E+01	
	011	19.1	-4.4	1/28/2008	16:28	4.21E+03	5.76E+02	2.98E+02	2.29E+01	2.40E+00	8.52E-01	-1.19E+00	1.95E+00	2.07E+00	4.31E-01	1.97E+00	2.29E+00	5.16E+00	1.53E+01	1.75E+01	
	012	19.1	-4.4	4/25/2008	12:45	5.00E+03	3.13E+02	1.44E+02	1.81E+01	1.32E+00	5.69E-01	2.68E+00	2.36E+00	4.34E+00	2.08E+00	2.22E+00	4.14E+00	1.76E+00	1.19E+01	2.05E+01	
	013	19.1	-4.4	7/30/2008	15:03	3.96E+03	1.73E+02	1.30E+02	1.62E+01	1.27E+00	8.36E-01	-9.75E-01	1.74E+00	2.74E+00	1.31E+00	2.17E+00	3.93E+00	-2.81E+00	1.64E+01	2.92E+01	
	014	19.1	-4.4	11/5/2008	15:54	3.47E+03	4.55E+02	1.91E+02	1.53E+01	2.06E+00	6.10E-01	-1.36E+00	5.03E+00	5.26E+00	-3.17E-01	4.65E+00	5.18E+00	2.96E+00	1.77E+01	2.02E+01	
	015	19.1	-4.4	2/6/2009	13:03	3.10E+03	2.66E+02	1.69E+02	1.38E+01	1.91E+00	8.59E-01	1.77E+00	4.34E+00	4.54E+00	1.26E+00	3.56E+00	4.24E+00	2.31E+01	2.21E+01	2.42E+01	
MW-49-42	001	38.1	-23.4	3/22/2006	16:45	1.13E+04	2.55E+03	1.83E+03	1.94E+01	1.04E+00	4.30E-01	3.30E+00	1.19E+01	1.32E+01	-4.57E+00	1.11E+01	1.14E+01	NA	NA	NA	MW-49-42
	003	38.1	-23.4	5/19/2006	15:07	9.39E+03	1.49E+03	4.90E+02	1.20E+01	9.57E-01	4.54E-01	2.16E+00	1.39E+01	1.56E+01	3.96E+00	1.40E+01	1.63E+01	NA	NA	NA	
	003	38.1	-23.4	5/19/2006	15:07	8.83E+03	5.33E+03	6.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	38.1	-23.4	6/6/2006	10:10	8.28E+03	1.32E+03	3.86E+02	1.63E+01	1.27E+00	5.67E-01	2.88E+00	1.37E+01	1.58E+01	-1.26E+00	1.07E+01	1.13E+01	NA	NA	NA	
	005	38.1	-23.4	7/7/2006	9:15	5.85E+03	1.82E+03	1.52E+03	1.92E+01	3.23E+00	1.49E+00	2.01E+00	1.14E+01	1.30E+01	-1.61E+00	1.06E+01	1.11E+01	NA	NA	NA	
	006	38.1	-23.4	8/1/2006	9:40	8.80E+03	9.68E+02	6.16E+02	NA	NA	NA	-4.22E+00	9.33E+00	8.64E+00	-1.94E+00	8.78E+00	8.99E+00	8.06E+00	9.86E+00	1.05E+01	
	007	38.1	-23.4	8/28/2006	12:40	8.69E+03	9.57E+02	6.10E+02	NA	NA	NA	-8.31E-02	1.05E+01	1.16E+01	-6.74E+00	9.40E+00	6.18E+00	NA	NA	NA	
	008	38.1	-23.4	11/15/2006	14:21	6.19E+03	1.38E+03	1.00E+03	2.11E+01	2.46E+00	8.10E-01	-6.60E-01	2.25E+00	2.60E+00	1.18E+00	2.34E+00	2.60E+00	2.60E+00	5.70E+00	6.20E+00	
	009	38.1	-23.4	6/26/2007	12:30	4.44E+03	2.90E+02	1.86E+02	2.08E+01	1.65E+00	6.22E-01	-3.62E-01	4.56E+00	4.32E+00	-2.09E+00	3.66E+00	3.54E+00	-5.19E+00	1.30E+01	1.54E+01	
	010	38.1	-23.4	8/9/2007	12:05	4.30E+03	7.91E+02	4.59E+02	2.56E+01	2.77E+00	8.29E-01	-1.17E+00	3.27E+00	3.37E+00	2.77E+00	3.52E+00	4.56E+00	4.03E-01	2.10E+01	2.46E+01	
	011	38.1	-23.4	1/28/2008	15:49	2.81E+03	4.92E+02	2.98E+02	2.94E+01	2.57E+00	5.58E-01	8.68E-01	2.10E+00	2.43E+00	8.96E-01	2.13E+00	2.52E+00	5.79E+00	1.73E+01	1.97E+01	
	012	38.1	-23.4	4/25/2008	12:38	3.20E+03	2.54E+02	1.44E+02	2.33E+01	1.49E+00	5.24E-01	4.07E-01	1.82E+00	3.18E+00	5.91E-01	2.37E+00	4.13E+00	-1.03E+00	1.17E+01	2.04E+01	
	013	38.1	-23.4	7/30/2008	15:06	2.52E+03	1.45E+02	1.30E+02	2.16E+01	1.41E+00	6.09E-01	4.49E-01	1.59E+00	2.79E+00	7.96E-01	1.70E+00	3.09E+00	-2.73E+00	1.59E+01	2.84E+01	
	014	38.1	-23.4	11/5/2008	14:31	2.54E+03	4.04E+02	1.97E+02	2.16E+01	2.50E+00	7.01E-01	-1.27E+00	6.33E+00	6.92E+00	-1.93E+00	8.10E+00	7.46E+00	4.70E+00	1.84E+01	2.09E+01	
	015	38.1	-23.4	2/6/2009	9:57	2.25E+03	2.40E+02	1.70E+02	2.07E+01	2.37E+00	9.73E-01	1.38E+00	3.51E+00	4.09E+00	-2.43E+00	3.38E+00	3.11E+00	-2.15E+00	2.15E+01	2.48E+01	
MW-49-65	001	60	-45.4	3/22/2006	16:55	5.43E+03	2.13E+03	1.82E+03	1.85E+01	1.01E+00	4.13E-01	1.36E+00	1.43E+01	1.72E+01	5.51E+00	1.37E+01	1.81E+01	NA	NA	NA	MW-49-65
	003	60	-45.4	5/19/2006	15:55	5.70E+03	9.38E+02	3.84E+02	1.13E+01	8.98E-01	4.28E-01	-2.86E+00	8.51E+00	8.67E+00	-1.43E-01	9.39E+00	1.03E+01	NA	NA	NA	
	003	60	-45.4	5/19/2006	15:55	5.75E+03	4.30E+03	6.29E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	60	-45.4	6/6/2006	10:40	4.32E+03	7.20E+02	2.88E+02	1.72E+01	1.30E+00	6.17E-01	4.52E+00	1.41E+01	1.63E+01	4.24E+00	1.28E+01	1.52E+01	NA	NA	NA	
	005	60	-45.4	7/7/2006	9:10	4.63E+03	1.73E+03	1.52E+03	1.56E+01	3.24E+00	1.86E+00	-2.76E+00	6.49E+00	6.88E+00	1.84E+00	6.45E+00	7.36E+00	NA	NA	NA	
	006	60	-45.4	8/1/2006	10:00	5.76E+03	8.48E+02	6.14E+02	NA	NA	NA	-1.20E+00	6.84E+00	7.48E+00	-6.55E-01	8.18E+00	9.78E+00	5.75E+00	1.06E+01	1.15E+01	
	007	60	-45.4	8/28/2006	12:35	5.54E+03	8.40E+02	6.16E+02	NA	NA	NA	-4.07E+00	9.28E+00	9.08E+00	-1.27E+00	7.42E+00	7.60E+00				
	008	60	-45.4	11/15/2006	13:46	3.04E+03	1.20E+03	1.00E+03	1.92E+01	2.31E+00	8.40E-01	2.12E+00	2.61E+00	2.80E+00	3.00E-01	2.07E+00	2.40E+00	-1.80E+00	6.90E+00	7.70E+00	
	009	60	-45.4	6/26/2007	12:30	2.62E+03	2.45E+02	1.85E+02	1.58E+01	1.58E+00	8.28E-01	-1.36E-03	3.06E+00	3.38E+00	-3.59E+00	4.30E+00	2.75E+00	-7.43E+00	1.41E+01	1.68E+01	
	010	60	-45.4	8/9/2007	11:20	2.41E+03	6.42E+02	4.60E+02	2.08E+01	2.40E+00	9.11E-01	3.44E-01	2.76E+00	3.13E+00	1.65E+00	3.03E+00	3.73E+00	3.50E+00	2.14E+01	2.49E+01	
	011	60	-45.4	1/28/2008	16:52	1.85E+03	4.22E+02	2.95E+02	2.73E+01	2.79E+00	6.29E-01	2.83E+00	3.72E+00	3.81E+00	-1.63E+00	3.17E+00	3.09E+00	1.01E+01	1.95E+01	2.20E+01	
	012	60	-45.4	4/25/2008	13:13	1.93E+03	1.86E+02	1.96E+02	1.90E+01	6.62E-01	3.64E-01	-8.45E-02	1.93E+00	3.28E+00	-1.40E-01	2.29E+00	3.84E+00	6.81E+00	9.59E+00	1.62E+01	
	013	60	-45.4	7/30/2008	13:58	1.56E+03	1.23E+02	1.30E+02	1.78E+01	1.29E+00	5.51E-01	-4.77E-01	2.20E+00	3.63E+00	8.42E-02	2.02E+00	3.39E+00	-6.53E+00	1.67E+01	2.96E+01	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	014	60	-45.4	11/5/2008	14:43	1.26E+03	3.02E+02	1.92E+02	1.72E+01	2.23E+00	5.97E-01	-4.96E+00	6.60E+00	6.62E+00	2.51E+00	6.11E+00	7.41E+00	8.42E-01	1.80E+01	2.06E+01	
	015	60	-45.4	2/6/2009	9:59	1.42E+03	2.10E+02	1.70E+02	1.73E+01	2.10E+00	9.15E-01	-9.15E-01	2.96E+00	3.20E+00	7.61E-01	2.64E+00	3.21E+00	2.70E+00	2.22E+01	2.54E+01	
MW-50-42	001	42	-27.1	3/22/2006	14:25	9.75E+03	5.78E+02	2.14E+02	1.93E+01	1.12E+00	4.76E-01	-1.36E+00	9.90E+00	1.13E+01	-5.74E-01	8.55E+00	1.02E+01	4.01E+00	1.34E+01	1.46E+01	MW-50-42
	003	42	-27.1	5/19/2006	13:55	4.59E+03	7.74E+02	3.53E+02	1.95E+01	1.25E+00	4.77E-01	4.84E+00	8.95E+00	1.18E+01	-4.07E-01	8.17E+00	1.02E+01	NA	NA	NA	
	003	42	-27.1	5/19/2006	13:55	4.58E+03	3.84E+03	6.30E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	42	-27.1	6/7/2006	9:00	1.79E+02	1.89E+02	1.56E+02	3.94E+00	7.62E-01	6.06E-01	1.15E-01	7.81E+00	8.62E+00	-1.70E+00	7.37E+00	7.69E+00	NA	NA	NA	
	005	42	-27.1	7/3/2006	11:35	3.98E+02	2.18E+02	2.02E+02	3.45E+00	2.00E+00	1.65E+00	6.90E+00	1.38E+01	1.65E+01	4.75E+00	1.04E+01	1.30E+01	NA	NA	NA	
	006	42	-27.1	8/1/2006	11:20	1.41E+03	6.42E+02	6.14E+02	NA	NA	NA	8.99E+00	1.01E+01	1.33E+01	6.21E+00	9.26E+00	1.24E+01	1.12E+01	1.53E+01	1.64E+01	
	007	42	-27.1	8/28/2006	11:50	3.11E+02	1.89E+02	1.76E+02	NA	NA	NA	1.97E+00	5.84E+00	6.74E+00	3.49E+00	6.36E+00	7.93E+00	NA	NA	NA	
	008	42	-27.1	11/15/2006	11:50	1.70E+03	1.11E+03	1.00E+03	1.13E+01	1.56E+00	8.30E-01	7.20E+00	4.20E+00	4.30E+00	-9.00E-01	3.00E+00	3.80E+00	-1.20E+00	6.00E+00	6.70E+00	
	009	42	-27.1	6/26/2007	14:30	2.15E+02	1.71E+02	1.86E+02	1.16E+01	1.35E+00	7.64E-01	1.91E+00	4.44E+00	5.12E+00	-1.64E+00	4.29E+00	3.94E+00	-6.30E+00	1.84E+01	2.19E+01	
	010	42	-27.1	7/26/2007	11:20	1.45E+02	1.74E+02	1.93E+02	1.94E+01	1.81E+00	5.31E-01	-5.50E+00	4.71E+00	3.68E+00	2.53E+00	3.39E+00	4.32E+00	4.92E+00	1.91E+01	2.19E+01	
	011	42	-27.1	10/18/2007	14:08	1.01E+02	1.76E+02	1.97E+02	2.45E+01	2.52E+00	5.74E-01	3.02E-01	3.38E+00	3.87E+00	6.26E-01	3.75E+00	3.81E+00	-9.14E-01	1.62E+01	1.87E+01	
	013	42	-27.1	2/26/2008	12:19	6.13E+02	2.94E+02	2.87E+02	2.40E+00	8.61E-01	7.34E-01	-1.95E+00	4.80E+00	4.66E+00	1.77E+00	3.90E+00	4.68E+00	1.71E+01	2.40E+01	2.67E+01	
	014	42	-27.1	7/31/2008	15:43	3.73E+02	1.34E+02	1.91E+02	9.28E+00	8.66E-01	4.39E-01	-9.40E-01	1.99E+00	3.20E+00	9.53E-01	1.91E+00	3.44E+00	1.58E+01	1.76E+01	2.96E+01	
	015	42	-27.1	11/6/2008	10:44	1.29E+02	1.76E+02	1.92E+02	2.56E+00	9.87E-01	6.85E-01	1.65E+00	4.98E+00	5.77E+00	5.18E-01	5.36E+00	6.17E+00	0.00E+00	1.76E+01	2.03E+01	
	016	42	-27.1	1/22/2009	15:23	2.15E+02	1.38E+02	1.48E+02	1.96E+00	8.06E-01	6.31E-01	-1.74E+00	2.48E+00	2.37E+00	-5.18E-01	2.31E+00	2.39E+00	-3.34E+00	1.74E+01	2.03E+01	
MW-50-66	001	67	-52.1	3/22/2006	14:50	6.81E+03	4.94E+02	2.13E+02	2.55E+01	1.21E+00	4.90E-01	-7.67E+00	1.60E+01	1.66E+01	-2.18E+00	1.68E+01	1.81E+01	5.33E+00	1.35E+01	1.47E+01	MW-50-66
	003	67	-52.1	5/19/2006	15:20	1.08E+04	5.90E+03	6.30E+02	NA	NA	NA	3.23E+00	1.06E+01	1.23E+01	7.78E-01	1.12E+01	1.25E+01	NA	NA	NA	
	003	67	-52.1	5/19/2006	15:20	9.61E+03	1.52E+03	4.94E+02	1.95E+01	1.22E+00	5.16E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	67	-52.1	6/7/2006	9:20	1.05E+04	1.65E+03	4.29E+02	1.98E+01	1.18E+00	4.66E-01	-1.97E+00	8.71E+00	9.38E+00	2.49E+00	8.98E+00	1.04E+01	NA	NA	NA	
	005	67	-52.1	7/3/2006	11:00	8.62E+03	2.00E+03	1.52E+03	2.53E+01	3.79E+00	1.67E+00	-2.04E+00	9.54E+00	1.02E+01	4.40E-01	8.34E+00	9.23E+00	NA	NA	NA	
	006	67	-52.1	8/1/2006	9:28	7.93E+03	9.36E+02	6.16E+02	NA	NA	NA	5.59E-01	5.98E+00	6.68E+00	-4.31E+00	6.18E+00	5.00E+00	1.06E+01	1.06E+01	1.13E+01	
	007	67	-52.1	8/28/2006	12:05	6.77E+03	1.59E+03	1.30E+03	NA	NA	NA	7.66E-02	4.67E+00	5.86E+00	1.34E+00	4.23E+00	5.88E+00	NA	NA	NA	
	008	67	-52.1	11/15/2006	10:37	5.05E+03	1.32E+03	1.00E+03	2.15E+01	2.34E+00	8.10E-01	2.00E-01	3.30E+00	3.70E+00	2.60E+00	3.30E+00	3.50E+00	1.50E+00	5.70E+00	6.30E+00	
	009	60	-45.1	6/26/2007	14:02	4.21E+03	2.85E+02	1.86E+02	2.93E+01	1.86E+00	5.25E-01	-2.19E+00	2.64E+00	2.49E+00	1.63E-01	2.36E+00	2.74E+00	-6.05E-01	1.50E+01	1.74E+01	
	010	60	-45.1	7/26/2007	11:25	4.50E+03	3.39E+02	2.04E+02	3.10E+01	2.50E+00	5.78E-01	-1.12E+00	4.54E+00	4.18E+00	1.08E-02	3.46E+00	3.94E+00	1.93E+01	1.86E+01	2.02E+01	
	011	60	-45.1	10/18/2007	14:38	3.85E+03	6.53E+02	3.62E+02	4.74E+01	3.72E+00	7.97E-01	-2.28E+00	4.61E+00	4.36E+00	1.65E+00	4.20E+00	4.96E+00	-3.71E+00	1.58E+01	1.83E+01	
	013	60	-45.1	2/26/2008	13:46	3.74E+03	7.98E+02	5.31E+02	3.58E+01	2.36E+00	7.40E-01	7.87E-01	2.69E+00	3.18E+00	2.54E-01	2.54E+00	2.96E+00	4.87E+00	1.86E+01	2.12E+01	
	015	60	-45.1	5/12/2008	15:40	2.80E+03	2.39E+02	1.44E+02	3.38E+01	1.85E+00	7.01E-01	7.08E-01	2.24E+00	3.87E+00	1.23E+00	2.13E+00	3.83E+00	7.86E+00	1.28E+01	2.17E+01	
	016	60	-45.1	7/31/2008	17:02	2.71E+03	2.48E+02	1.91E+02	3.30E+01	1.59E+00	4.02E-01	2.31E+00	1.82E+00	3.43E+00	6.64E-01	1.46E+00	2.68E+00	3.58E+00	1.40E+01	2.43E+01	
	017	60	-45.1	9/8/2008	16:21	2.08E+03	4.17E+02	5.04E+02	3.23E+01	1.66E+00	4.88E-01	-8.81E-01	2.69E+00	3.96E+00	NA	NA	NA	1.22E+01	1.23E+01	2.06E+01	
	018	60	-45.1	11/6/2008	12:38	2.73E+03	4.17E+02	1.98E+02	3.20E+01	3.00E+00	7.41E-01	-8.66E-01	5.97E+00	6.56E+00	-2.52E+00	8.96E+00	8.45E+00	-1.63E+00	2.07E+01	2.39E+01	
	019	60	-45.1	11/19/2008	16:29	2.43E+03	2.49E+02	1.73E+02	4.99E+01	3.75E+00	8.66E-01	2.50E+00	5.26E+00	2.61E+00	5.13E-01	2.70E+00	3.17E+00	-5.06E-01	1.98E+01	2.29E+01	
	020	60	-45.1	1/22/2009	16:01	2.30E+03	2.16E+02	1.48E+02	2.75E+01	2.28E+00	4.07E-01	-1.68E+00	4.20E+00	3.99E+00	-1.97E-01	3.32E+00	3.66E+00	-9.33E+00	1.88E+01	2.23E+01	
MW-51-40	001	39.7	28	5/30/2007	11:45	1.98E+02	1.65E+02	1.68E+02	-5.30E-01	6.73E-01	9.82E-01	1.04E-01	3.48E+00	3.77E+00	1.61E+00	3.23E+00	3.77E+00	NA	NA	NA	MW-51-40
	002	39.7	28	7/24/2007	15:30	2.23E+02	1.59E+02	1.60E+02	7.09E-02	4.71E-01	5.38E-01	1.65E-02	3.39E+00	3.85E+00	-1.32E+00	4.02E+00	4.13E+00	NA	NA	NA	
	004	39.7	28	11/9/2007	15:40	1.47E+02	1.55E+02	1.70E+02	-8.16E-02	3.87E-01	4.52E-01	1.68E+00	2.96E+00	3.52E+00	-5.71E-02	3.15E+00	3.49E+00	NA	NA	NA	
	005	39.7	28	1/8/2008	10:47	5.86E+01	1.56E+02	1.79E+02	1.57E-01	6.77E-01	8.32E-01	1.83E-02	2.66E+00	2.93E+00	7.71E-01	2.75E+00	2.87E+00	NA	NA	NA	
	007	39.7	28	5/30/2008	10:27	1.41E+02	1.01E+02	1.60E+02	3.71E-01	5.67E-01	9.67E-01	3.19E-01	2.03E+00	3.41E+00	2.18E+00	2.36E+00	3.50E+00	NA	NA	NA	
	008	39.7	28	8/8/2008	14:40	3.29E+02	1.60E+02	2.03E+02	3.74E-01	4.02E-01	6.70E-01	1.59E+00	2.19E+00	3.98E+00	-1.99E-01	1.79E+00	2.99E+00	-8.33E+00	1.02E+01	1.83E+01	
	009	39.7	28	10/27/2008	13:11	1.68E+02	1.85E+02	1.95E+02	1.84E-02	4.26E-01	5.67E-01	4.51E-01	4.28E+00	4.88E+00	-1.93E+00	6.35E+00	6.59E+00	-5.03E+00	2.11E+01	2.46E+01	
	010	39.7	28	1/20/2009	14:50	2.37E+01	1.68E+02	1.92E+02	1.92E-01	7.95E-01	9.70E-01	9.89E-01	2.81E+00	3.26E+00	1.05E+00	2.75E+00	3.30E+00	8.95E+00	1.67E+01	1.87E+01	
MW-51-79	001	78.7	-11	5/30/2007	12:42	9.89E+01	1.55E+02	1.72E+02	-2.36E-01	6.98E-01	9.58E-01	2.20E+00	3.63E+00	3.90E+00	3.52E-01	3.31E+00	3.76E+00	NA	NA	NA	MW-51-79
	002	78.7	-11	7/24/2007	17:00	4.24E+01	1.43E+02	1.67E+02	8.02E-03	5.35E-01	6.15E-01	-6.37E-01	3.88E+00	4.21E+00	-2.83E-01	4.51E+00	4.93E+00	NA	NA	NA	
	004	78.7	-11	11/9/2007	16:18	5.00E+01	1.50E+02	1.71E+02	-4.97E-02	2.99E-01	3.52E-01	2.66E+00	2.97E+00	3.56E+00	-2.43E-01	4.02E+00	4.45E+00	NA	NA	NA	
	005	78.7	-11	1/8/2008	10:08	9.26E+01	1.59E+02	1.79E+02	-4.64E-01	7.01E-01	9.74E-01	-7.91E-01	2.22E+00	2.42E+00	2.58E-01	2.37E+00	2.70E+00	NA	NA	NA	
	007	78.7	-11	5/30/2008	10:55	6.70E+01	9.41E+01	1.61E+02	2.46E-02	4.94E-01	9.94E-01	-1.14E+00	3.43E+00	4.80E+00	-5.13E-01	2.70E+00	4.31E+00	NA	NA	NA	
	008	78.7	-11	8/8/2008	12:55	1.61E+02	1.31E+02	2.01E+02	2.03E-01	2.99E-01	5.18E-01	9.63E-01	2.17E+00	3.82E+00	5.64E-01	2.30E+00	3.98E+00	-1.07E+01	1.07E+01	1.93E+01	
	009	78.7	-11	10/27/2008	13:30	1.14E+01	1.62E+02	1.99E+02	3.14E-03	6.14E-01	7.85E-01	8.42E-01	5.07E+00	5.75E+00	2.41E+00	5.21E+00	6.37E+00	3.72E+00	1.77E+01	2.02E+01	
	010	78.7	-11	1/20/2009	15:21	1.01E+02	1.33E+02	1.48E+02	-1.71E-01	3.15E-01	5.02E-01	5.93E-01	5.57E+00	3.65E+00	-2.94E-01	3.21E+00	3.56E+00	1.58E+01	1.73E+01	1.90E+01	
MW-51-104	001	103.7	-36	5/30/2007	11:05	5.71E+01	1.48E+02	1.71E+02	-6.74E-02	7.59E-01	9.90E-01	1.25E+00	3.27E+00	3.35E+00	7.70E-02	3.25E+00	3.62E+00	NA	NA	NA	MW-51-104
	002	103.7	-36	7/24/2007	17:06	9.07E+01	1.47E+02	1.64E+02	3.62E-01	4.86E-01	5.41E-01	-4.20E+00	4.62E+00	3.92E+00	1.42E+00	4.44E+00	5.33E+00	NA	NA	NA	
	004	103.7	-36	11/9/2007	14:35	5.17E+01	1.50E+02	1.70E+02	-2.40E-01	3.18E-01	3.86E-01	-1.26E+00	2.85E+00	2.92E+00	1.15E+00	2.61E+00	3.18E+00	NA	NA	NA	
	005	103.7	-36	1/8/2008	12:15	-4.84E+00	1.45E+02	1.78E+02	-6.19E-02	7.22E-01	9.34E-01	-9.37E-01	2.09E+00	2.26E+00	-3.84E-01	2.54E+00	2.50E+00	NA	NA	NA	
	006	103.7	-36	8/8/2008	10:50	2.82E+02	1.55E+02	2.08E+02	-2.66E-01	4.00E-01	7.92E-01	1.56E+00	2.03E+00	3.60E+00	-1.21E-01	2.07E+00	3.38E+00	-4.19E+00	1.34E+01	2.36E+01	
	007	103.7	-36	10/27/2008	10:07	1.21E+02	1.39E+02	1.49E+02	1.19E-01	4.97E-01	6.13E-01	5.61E+00	6.81E+00	8.52E+00	-5.72E+00	8.93E+00	8.26E+00	-1.01E+00	1.84E+01	2.12E+01	
	008	103.7	-36	1/20/2009	10:46	9.95E+01	1.33E+02	1.48E+02	9.07E-03	3.78E-01	5.04E-01	-1.33E+00	2.87E+00	3.03E+00	-1.01E+00	2.37E+00	2.42E+00	-2.06E+00	2.00E+01	2.33E+01	
MW-51-135	001	135.2	-67.5	5/30/2007	13:00	8.24E+01	1.50E+02	1.70E+02	-4.68E-01	5.53E-01	8.40E-01	-4.01E-01	3.62E+00	4.03E+00	2.56E+00	3.84E+00	4.48E+00	NA	NA	NA	MW-51-135
	002	135.2	-67.5	7/24/2007	12:40	9.51E+01	1.43E+02	1.59E+02	5.33E-02	5.04E-01	5.76E-01	-4.56E-01	4.07E+00	4.36E+00	3.42E-01	3.30E+00	3.84E+00	NA	NA	NA	
	004	135.2	-67.5	11/9/2007	11:55	9.83E+01	1.53E+02	1.72E+02	-2.42E-01	2.54E-01	3.18E-01	-7.27E-01	3.46E+00	3.70E+00	-3.14E-01	3.29E+00	3.66E+00	NA	NA	NA	
	005	135.2	-67.5	1/8/2008	13:20	4.91E+01	1.55E+02	1.80E+02	3.47E-02	7.04E-01	8.79E-01	6.30E-02	1.88E+00	2.09E+00	1.43E-02	1.71E+00	1.90E+00	NA	NA	NA	
	006	135.2	-67.5	8/8/2008	11:50	2.09E+02	1.39E+02	1.99E+02	5.09E-02	2.40E-01	4.57E-01	-1.03E+00	2.08E+00	3.29E+00	1.01E-02	2.01E+00	3.34E+00	-6.78E+00	1.14E+01	2.02E+01	
	007	135.2	-67.5	10/27/2008	10:05	7.68E+01	1.73E+02	1.99E+02	2.72E-04	5.05E-01	6.63E-01	-1.74E+00	5.26E+00	5.63E+00	3.92E+00	6.09E+00	7.69E+00	-2.05E-01	1.74E+01	2.01E+01	
	008	135.2	-67.5	1/20/2009	11:02	1.31E+02	1.35E+02	1.48E+02	-3.04E-01	3.41E-01	5.84E-01	-6.92E-01	3.89E+00	4.31E+00	9.34E-01	3.06E+00	3.66E+00	-1.08E+01	1.76E+01	2.10E+01	
MW-51-163	001	162.7	-95	5/30/2007	14:40	1.18E+02	1.56E+02	1.69E+02	3.29E-01	1.16E+00	1.36E+00	-2.81E-01	3.09E+00	3.45E+00	1.77E-01	2.82E+00	3.20E+00	NA	NA	NA	MW-51-163
	002	162.7	-95	7/24/2007	14:05	4.98E+01	1.44E+02	1.66E+02	1.05E-01	4.58E-01	5.21E-01	-2.43E-01	3.44E+00	3.78E+00	8.64E-02	3.25E+00	3.63E+00	NA	NA	NA	
	004	162.7	-95	11/9/2007	13:32	7.30E+01	1.52E+02	1.71E+02	2.08E-01	2.82E-01	3.12E-01	1.41E-01	3.54E+00	3.51E+00	-1.11E+00	3.01E+00	3.11E+00	NA	NA	NA	
	005	162.7	-95	1/8/2008	13:57	-1.99E+01	1.47E+02	1.82E+02	4.40E-01	8.22E-01	9.29E-01	-1.74E+00	2.66E+00	2.46E+00	8.69E-02	2.15E+00	2.44E+00	NA	NA	NA	
	006	162.7	-95	8/8/2008	11:16	6.92E+01	8.27E+01	1.40E+02	-1.22E-01	2.63E-01	5.44E-01	-1.54E+00	2.25E+00	3.56E+00	3.78E-01	1.97E+00	3.39E+00	4.33E+00	1.26E+01	2.15E+01	
	007	162.7	-95	10/27/2008	10:20	5.58E+01	1.67E+02	1.95E+02	2.55E-01	5.76E-01	6.67E-01	-1.70E+00	6.18E+00	6.74E+00	5.42E-01	5.38E+00	6.25E+00	2.11E+00	1.88E+01	2.14E+01	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS																Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)				
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC		
	008	162.7	-95	1/20/2009	11:44	4.60E+01	1.30E+02	1.48E+02	-1.98E-01	4.97E-01	6.98E-01	-9.70E-01	3.14E+00	3.27E+00	-7.70E-02	3.24E+00	3.54E+00	-1.01E+01	1.80E+01	2.14E+01		
MW-51-189	001	189.2	-121.5	5/30/2007	14:00	1.87E+02	1.67E+02	1.71E+02	-2.88E-02	8.90E-01	1.11E+00	-3.62E-02	3.98E+00	3.82E+00	4.56E+00	3.57E+00	4.63E+00	NA	NA	NA		MW-51-189
	002	189.2	-121.5	7/24/2007	13:15	9.49E+01	1.46E+02	1.63E+02	3.93E-01	4.08E-01	4.48E-01	-8.87E-01	4.11E+00	3.58E+00	1.57E+00	4.02E+00	4.31E+00	NA	NA	NA		
	003	189.2	-121.5	10/2/2007	12:20	8.45E+00	1.70E+02	1.96E+02	-5.06E-02	2.16E-01	2.58E-01	1.38E+01	5.45E+00	2.92E+00	-4.14E-01	2.79E+00	3.04E+00	NA	NA	NA		
	004	189.2	-121.5	11/9/2007	13:05	-6.26E+00	1.48E+02	1.71E+02	1.93E-01	3.61E-01	4.08E-01	3.04E+00	3.27E+00	4.07E+00	-8.07E-02	3.65E+00	4.05E+00	NA	NA	NA		
	005	189.2	-121.5	1/8/2008	13:10	-4.82E+00	1.44E+02	1.77E+02	-3.17E-02	7.01E-01	8.92E-01	1.35E+00	2.13E+00	2.49E+00	1.42E+00	1.98E+00	2.41E+00	NA	NA	NA		
	006	189.2	-121.5	8/8/2008	11:17	1.10E+02	8.97E+01	1.43E+02	-1.43E-01	3.38E-01	6.60E-01	-2.27E+00	2.13E+00	3.12E+00	-1.79E+00	2.70E+00	3.57E+00	-5.89E+00	1.15E+01	2.04E+01		
	007	189.2	-121.5	10/27/2008	10:11	7.69E+01	1.74E+02	1.99E+02	5.61E-01	7.16E-01	7.51E-01	6.11E-01	6.38E+00	7.30E+00	3.04E+00	6.13E+00	7.60E+00	-6.95E+00	1.84E+01	2.17E+01		
	008	189.2	-121.5	1/20/2009	11:33	3.32E+01	1.30E+02	1.48E+02	-2.14E-01	3.45E-01	5.59E-01	-2.05E+00	3.48E+00	3.62E+00	1.91E+00	3.32E+00	4.20E+00	-8.33E+00	1.79E+01	2.11E+01		
MW-52-11	001	10	6.8	6/20/2007	12:35	1.47E+02	1.68E+02	1.84E+02	-3.58E-01	6.33E-01	8.33E-01	1.96E+00	2.54E+00	2.99E+00	6.12E-01	2.29E+00	2.65E+00	-4.56E+00	1.28E+01	1.54E+01		MW-52-11
	002	10	6.8	8/6/2007	16:18	7.71E+01	1.73E+02	1.94E+02	-5.43E-01	6.12E-01	9.38E-01	-2.16E+00	3.42E+00	3.23E+00	3.39E-02	2.79E+00	3.12E+00	NA	NA	NA		
	003	10	6.8	4/28/2008	13:23	1.13E+03	1.53E+02	1.96E+02	1.97E-01	4.73E-01	8.46E-01	5.19E-01	1.93E+00	3.36E+00	-2.15E+00	3.52E+00	4.08E+00	NA	NA	NA		
MW-52-18	001	17.5	-2.6	5/24/2007	10:44	1.62E+02	1.52E+02	1.65E+02	-2.20E-01	4.98E-01	7.30E-01	6.53E-01	3.19E+00	3.74E+00	3.13E+00	3.30E+00	4.22E+00	-1.09E+00	9.82E+00	1.14E+01		MW-52-18
	002	17.5	-2.6	8/6/2007	13:45	6.73E+01	1.74E+02	1.96E+02	-7.91E-02	6.92E-01	8.93E-01	-1.43E+00	3.54E+00	3.67E+00	1.11E-01	3.15E+00	3.54E+00	NA	NA	NA		
MW-52-48	001	48	-33.1	5/24/2007	11:35	7.02E+01	1.48E+02	1.67E+02	-3.61E-01	7.44E-01	1.01E+00	3.66E-01	2.94E+00	3.39E+00	-9.91E-01	3.03E+00	3.11E+00	-2.74E+00	8.16E+00	9.55E+00		MW-52-48
	002	48	-33.1	8/6/2007	14:00	1.15E+02	1.76E+02	1.96E+02	-5.59E-01	4.83E-01	7.33E-01	7.85E-01	3.24E+00	3.75E+00	4.31E-01	3.29E+00	3.75E+00	NA	NA	NA		
MW-52-64	001	64	-49.1	5/24/2007	14:44	3.82E+00	1.70E+02	1.98E+02	-3.20E-01	7.68E-01	9.77E-01	-1.03E+00	3.25E+00	3.45E+00	8.00E-01	3.54E+00	4.11E+00	-2.85E+00	9.12E+00	1.07E+01		MW-52-64
	002	64	-49.1	8/6/2007	15:50	3.72E+01	1.71E+02	1.96E+02	-1.70E-02	7.22E-01	9.23E-01	5.10E-01	3.50E+00	3.68E+00	1.80E+00	6.08E+00	4.12E+00	NA	NA	NA		
MW-52-122	001	122	-107.1	5/24/2007	14:55	6.78E+01	1.47E+02	1.66E+02	-4.24E-01	6.62E-01	9.64E-01	2.52E+00	3.59E+00	3.62E+00	-1.76E+00	3.38E+00	3.29E+00	-1.94E+00	9.68E+00	1.13E+01		MW-52-122
	002	122	-107.1	8/6/2007	12:05	4.42E+01	1.71E+02	1.96E+02	-4.19E-01	7.10E-01	9.60E-01	1.99E+00	4.09E+00	4.34E+00	2.10E-01	4.13E+00	4.70E+00	NA	NA	NA		
	003	122	-107.1	4/28/2008	15:23	8.87E+01	8.60E+01	1.44E+02	1.21E-01	2.92E-01	5.22E-01	-1.25E+00	2.05E+00	3.24E+00	2.72E+00	2.38E+00	4.52E+00	NA	NA	NA		
MW-52-162	001	161.5	-146.6	5/24/2007	11:55	2.82E+02	1.95E+02	2.03E+02	-5.15E-01	4.87E-01	8.12E-01	-5.80E-01	3.59E+00	3.29E+00	1.59E+00	3.15E+00	3.88E+00	-7.54E-01	9.75E+00	1.13E+01		MW-52-162
	002	161.5	-146.6	8/6/2007	11:30	2.11E+02	1.80E+02	1.95E+02	1.53E-02	4.79E-01	6.03E-01	3.61E-02	3.44E+00	3.77E+00	-3.73E-02	3.12E+00	3.52E+00	NA	NA	NA		
	003	161.5	-146.6	4/28/2008	10:22	1.45E+02	8.73E+01	1.43E+02	1.03E+00	3.62E-01	4.43E-01	-9.14E-01	2.03E+00	3.31E+00	2.33E+00	2.13E+00	4.14E+00	NA	NA	NA		
MW-52-181	001	181	-166.1	5/24/2007	12:06	2.48E+02	1.94E+02	2.04E+02	-3.19E-01	5.07E-01	7.58E-01	-5.99E-01	3.30E+00	3.52E+00	-2.81E-01	3.74E+00	4.19E+00	-2.23E-01	1.01E+01	1.17E+01		MW-52-181
	002	181	-166.1	8/6/2007	11:40	1.19E+02	1.77E+02	1.97E+02	5.84E-02	5.56E-01	6.77E-01	-1.21E+00	2.87E+00	2.97E+00	1.28E+00	2.96E+00	3.57E+00	NA	NA	NA		
	003	181	-166.1	4/29/2008	10:24	1.56E+02	8.77E+01	1.44E+02	1.62E-01	2.46E-01	4.28E-01	1.08E+00	2.25E+00	3.96E+00	4.11E-01	2.12E+00	3.63E+00	NA	NA	NA		
MW-53-82	001	72.7	-2.4	8/23/2006	12:50	1.18E+04	1.85E+03	5.02E+02	6.68E+00	3.10E+00	2.74E+00	-3.52E+00	7.20E+00	6.64E+00	1.30E+00	1.02E+01	1.16E+01	4.44E+00	9.39E+00	1.02E+01		MW-53-82
	001	72.7	-2.4	8/23/2006	12:50	1.32E+04	1.11E+03	6.12E+02	NA	NA	NA	9.35E-01	5.78E+00	6.37E+00	1.36E+00	5.70E+00	6.30E+00	NA	NA	NA		
	002	72.7	-2.4	11/9/2006	11:15	4.54E+02	1.38E+02	1.40E+02	8.00E-02	8.10E-01	9.00E-01	-1.20E+00	3.00E+00	3.60E+00	-1.30E+00	3.30E+00	4.00E+00	1.30E+00	4.20E+00	4.60E+00		
	003	75	-4.7	6/22/2007	15:30	8.68E+03	1.05E+03	4.31E+02	3.98E+00	1.45E+00	1.04E+00	3.81E+00	3.78E+00	4.53E+00	1.95E+00	3.62E+00	4.63E+00	4.53E+00	1.54E+01	1.77E+01		
	004	75	-4.7	8/9/2007	11:31	7.76E+02	2.06E+02	2.04E+02	-3.41E-02	6.87E-01	8.82E-01	6.29E-01	2.33E+00	2.76E+00	-1.05E+00	2.17E+00	2.17E+00	-2.21E+00	1.99E+01	2.36E+01		
	005	75	-4.7	10/24/2007	13:53	1.11E+03	4.71E+02	4.03E+02	2.35E-01	3.11E-01	3.43E-01	3.07E-01	2.71E+00	3.05E+00	-1.06E+00	2.44E+00	2.38E+00	-1.59E+00	2.09E+01	2.41E+01		
	006	75	-4.7	1/21/2008	12:52	9.42E+02	1.86E+02	1.71E+02	2.19E-01	4.28E-01	4.87E-01	0.00E+00	5.42E+00	3.23E+00	-1.36E+00	2.84E+00	2.84E+00	3.84E+00	1.85E+01	2.11E+01		
	008	75	-4.7	8/4/2008	12:25	1.21E+03	1.84E+02	1.91E+02	6.95E-01	3.04E-01	3.94E-01	2.79E+00	2.26E+00	4.16E+00	2.55E-02	2.14E+00	3.58E+00	1.15E+01	1.24E+01	2.09E+01		
	009	75	-4.7	10/30/2008	15:52	7.94E+02	2.37E+02	1.65E+02	-4.79E-02	2.99E-01	4.19E-01	3.66E+00	6.21E+00	7.56E+00	-1.78E+00	6.33E+00	6.63E+00	-4.83E+00	1.65E+01	1.92E+01		
	010	75	-4.7	1/26/2009	12:00	4.26E+03	3.06E+02	1.92E+02	2.30E+00	1.07E+00	9.76E-01	1.10E+00	3.96E+00	4.51E+00	-2.25E-01	3.59E+00	3.88E+00	8.04E+00	1.64E+01	1.84E+01		
MW-53-120	001	109.8	-39.5	8/30/2006	11:30	4.42E+03	1.25E+03	1.12E+03	NA	NA	NA	-6.13E+00	9.49E+00	9.40E+00	4.98E-01	8.96E+00	9.83E+00	NA	NA	NA		MW-53-120
	002	109.8	-39.5	11/9/2006	11:20	7.90E+03	1.47E+03	1.00E+03	2.47E+01	1.83E+00	7.90E-01	-4.60E-01	2.70E+00	3.10E+00	-3.50E-01	2.76E+00	3.30E+00	2.71E+01	1.32E+01	1.30E+01		
	003	109.8	-39.5	6/22/2007	14:22	9.61E+03	1.10E+03	4.32E+02	3.57E+01	3.69E+00	1.04E+00	7.93E+00	5.09E+00	2.84E+00	9.47E-01	3.15E+00	3.72E+00	1.73E+01	1.38E+01	1.47E+01		
	004	109.8	-39.5	8/9/2007	12:45	8.05E+03	1.02E+03	4.59E+02	3.70E+01	3.18E+00	9.24E-01	1.37E+00	3.62E+00	4.27E+00	-1.59E-01	3.74E+00	4.17E+00	1.95E+01	2.14E+01	2.35E+01		
	005	109.8	-39.5	10/24/2007	13:38	7.40E+03	9.29E+02	4.02E+02	3.81E+01	2.27E+00	4.82E-01	-5.34E-01	3.51E+00	3.29E+00	-2.23E-01	3.35E+00	3.72E+00	7.06E+00	2.10E+01	2.38E+01		
	006	109.8	-39.5	1/21/2008	10:43	7.48E+03	3.48E+02	1.72E+02	3.12E+01	2.40E+00	6.46E-01	1.38E+00	3.02E+00	3.18E+00	1.14E-01	3.30E+00	3.71E+00	1.71E+01	1.85E+01	2.02E+01		
	008	109.8	-39.5	5/13/2008	10:10	5.91E+03	3.38E+02	1.43E+02	3.11E+01	1.73E+00	6.73E-01	-1.39E+00	1.98E+00	3.10E+00	1.33E+00	2.15E+00	3.99E+00	2.22E+01	1.28E+01	2.08E+01		
	009	109.8	-39.5	8/4/2008	10:15	5.80E+03	3.46E+02	1.91E+02	3.03E+01	1.52E+00	3.11E-01	-9.74E-01	1.93E+00	3.02E+00	-1.15E-01	2.33E+00	3.20E+00	2.65E+01	1.30E+01	2.11E+01		
	010	109.8	-39.5	9/5/2008	10:55	5.76E+03	5.90E+02	5.07E+02	3.10E+01	1.59E+00	4.10E-01	-3.34E-01	2.41E+00	3.94E+00	NA	NA	NA	1.94E+01	1.19E+01	3.88E-01		
	011	109.8	-39.5	10/30/2008	13:00	5.57E+03	5.39E+02	1.66E+02	2.53E+01	2.04E+00	3.80E-01	2.73E+00	4.75E+00	5.74E+00	0.00E+00	9.13E+00	9.26E+00	5.82E+00	1.69E+01	1.93E+01		
	012	109.8	-39.5	11/17/2008	10:31	5.04E+03	3.23E+02	1.72E+02	4.25E+01	3.63E+00	6.74E-01	3.25E-01	4.72E+00	5.28E+00	-1.96E-02	4.09E+00	4.49E+00	2.12E+01	2.03E+01	2.21E+01		
	013	109.8	-39.5	1/26/2009	12:43	5.06E+03	3.26E+02	1.92E+02	2.64E+01	2.37E+00	7.50E-01	-3.60E-01	4.53E+00	5.10E+00	2.32E+00	4.34E+00	5.39E+00	1.27E+01	2.22E+01	2.49E+01		
MW-54-37	001	36.5	-23.4	5/3/2007	16:19	8.01E+02	3.14E+02	3.02E+02	1.25E+01	2.12E+00	7.94E-01	2.44E+00	3.63E+00	4.42E+00	-1.43E+00	2.71E+00	2.51E+00	6.09E+00	1.98E+01	2.27E+01		MW-54-37
	002	36.5	-23.4	7/31/2007	10:30	8.88E+02	4.14E+02	2.68E+02	5.30E+00	1.11E+00	6.26E-01	1.46E+00	2.54E+00	3.03E+00	-2.64E-02	2.82E+00	3.13E+00	-4.74E+00	1.83E+01	2.14E+01		
	003	36.5	-23.4	10/19/2007	13:25	1.04E+03	4.26E+02	3.66E+02	6.19E+00	1.37E+00	6.14E-01	6.04E-01	3.30E+00	3.84E+00	6.61E-01	3.54E+00	4.19E+00	1.04E+01	1.59E+01	1.77E+01		
	004	36.5	-23.4	1/15/2008	13:18	1.07E+03	4.97E+02	4.18E+02	5.79E+00	1.47E+00	7.26E-01	7.48E-02	2.81E+00	3.11E+00	1.03E+00	2.79E+00	3.00E+00	-1.88E-01	2.06E+01	2.43E+01		
	005	36.5	-23.4	5/2/2008	13:59	8.70E+02	1.47E+02	1.43E+02	5.08E+00	7.44E-01	5.59E-01	-9.28E-01	2.12E+00	3.29E+00	-8.38E-01	2.56E+00	4.06E+00	3.37E+00	1.24E+01	2.12E+01		
	006	36.5	-23.4	7/22/2008	17:00	9.50E+02	1.08E+02	1.31E+02	6.20E+00	7.50E-01	4.63E-01	1.34E+00	2.22E+00	3.94E+00	-4.43E-01	2.09E+00	3.34E+00	1.42E+00	1.68E+01	2.95E+01		
	007	36.5	-23.4	11/11/2008	13:16	1.25E+03	2.07E+02	1.73E+02	7.33E+00	1.45E+00	5.76E-01	-2.50E+00	6.27E+00	6.87E+00	2.81E+00	5.14E+00	6.50E+00	2.49E+00	1.92E+01	2.21E+01		
	008	36.5	-23.4	2/3/2009	15:34	1.16E+03	1.86E+02	1.64E+02	5.93E+00	1.16E+00	6.66E-01	1.70E+00	3.33E+00	3.92E+00	-1.15E+00	3.24E+00	3.14E+00	-3.14E+00	2.16E+01	2.50E+01		
MW-54-58	001	57.5	-44.4	5/3/2007	16:45	7.60E+02	3.11E+02	3.02E+02	2.22E+00	9.99E-01	7.02E-01	-3.77E-01	2.81E+00	3.07E+00	1.15E-01	2.71E+00	3.09E+00	7.50E+00	1.88E+01	2.12E+01		MW-54-58
	002	57.5	-44.4	7/31/2007	9:55	6.93E+02	3.72E+02	2.62E+02	1.76E+00	8.53E-01	7.52E-01	-1.32E+00	3.12E+00	3.23E+00	8.17E-03	3.01E+00	3.35E+00	1.97E-01	1.80E+01	2.08E+01		
	003	57.5	-44.4	10/19/2007	13:35	5.61E+02	2.00E+02	1.94E+02	4.38E-01	8.43E-01	9.56E-01	-2.08E-01	3.03E+00	3.40E+00	3.56E-01	2.96E+00	3.39E+00	2.09E+00	1.59E+01	1.81E+01		
	004	57.5	-44.4	1/15/2008	13:45	6.47E+02	4.40E+02	4.18E+02	2.32E+00	1.09E+00	8.13E-01	2.16E+00	4.59E+00	3.18E+00	-7.34E-01	3.06E+00	3.27E+00	4.41E+00	2.34E+01	2.71E+01		
	005	57.5	-44.4	5/2/2008	14:15	7.33E+02	1.39E+02	1.43E+02	1.69E+00	4.97E-01	5.77E-01	8.65E-01	2.13E+00	3.75E+00	1.63E+00	2.46E+00	4.54E+00	9.78E-01	1.27E+01	2.20E+01		
	006	57.5	-44.4	7/22/2008	17:05	5.78E+02	9.64E+01	1.31E+02	1.71E+00	5.24E-01	6.47E-01	3.78E-01	2.07E+00	3.59E+00	-1.41E-01	2.67E+00	4.23E+00	1.37E+01	1.69E+01	2.85E+01		
	007	57.5	-44.4	11/11/2008	13:02	6.98E+02	1.85E+02	1.74E+02	9.02E+00	1.65E+00	5.87E-01	-7.43E-01	3.71E+00	3.89E+00	-1.72E+00	3.50E+00	3.31E+00	3.01E+00	1.91E+01	2.18E+01		
	008	57.5	-44.4	2/3/2009	14:53	6.82E+02	1.71E+02	1.66E+02	1.98E+00	8.52E-01	7.24E-01	9.58E-01	2.78E+00	3.29E+00	4.22E-01	2.94E+00	3.39E+00	-3.05E+00	1.95E+01	2.27E+01		
MW-54-123	001	123	-109.9	5/3/2007	14:18	1.11E+03	3.75E+02	3.36E+02	2.19E+01	2.71E+00	8.06E-01	4.21E+00	3.50E+00	3.67E+00	-2.65E+00	7.07E+00	3.31E+00	7.45E+00	1.79E+01	2.03E+01		MW-54-123
	002	123	-109.9	7/31/2007	11:10	9.63E+02	4.29E+02	3.69E+02	1.35E+01	1.47E+00	8.87E-01	0.00E+00	4.68E+00	4.49E+00	2.96E+00	4.02E+00	5.06E+00	-3.63E+00	1.86E+01	2.17E+01		
	003	123	-109.9	10/19/2007	12:09	7.01E+02	3.87E+02	3.62E+02	1.16E+01	1.88E+00	8.13E-01	4.02E-02	3.51E+00	3.88E+00	-1.72E+00	3.65E+00	3.68E+00	-4.31E-01	2.19E+01	2.51E+01		
	004	123	-109.9	1/15/2008	10:52	5.33E+02	4.23E+02	4.18E+02	9.56E+00	1.92E+00	7.51E-01	8.25E-01	3.48E+00	3.94E+00	4.41E-01	3.00E+00	3.42E+00	6.86E+00	2.25E+01	2.58E+01		
	005	123	-109.9	5/2/2008	10:06	6.98E+02	1.34E+02	1.39E+02	6.45E+00	8.46E-01	5.98E-01	-1.28E+00	2.22E+00	3.42E+00	4.12E+00	2.63E+00	5.24E+00	-3.04E+00	1.19E+01	2.08E+01		
	006	123	-109.9	7/22/2008	15:30	6.12E+02	9.77E+01	1.32E+02	6.52E+00	8.15E-01	5.56E-01	-2.82E-01	2.22E+00	3.72E+00	-2.93E+00	2.52E+00	3.55E+00	4.33E+00	1.57E+01	2.73E+01		

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	007	123	-109.9	11/11/2008	11:03	5.80E+02	1.77E+02	1.71E+02	1.26E+01	2.10E+00	7.26E-01	-6.72E-01	5.14E+00	5.51E+00	2.63E+00	4.29E+00	5.62E+00	-4.68E+00	1.83E+01	2.15E+01	
	008	123	-109.9	2/3/2009	11:55	5.31E+02	1.64E+02	1.64E+02	5.91E+00	1.15E+00	5.70E-01	9.03E-01	3.03E+00	3.59E+00	5.33E-02	3.09E+00	3.52E+00	9.09E-01	2.00E+01	2.30E+01	
MW-54-144	001	144	-130.9	5/3/2007	14:31	1.34E+03	5.64E+02	4.68E+02	1.61E+01	2.42E+00	6.97E-01	-1.34E+00	3.62E+00	3.78E+00	5.23E-01	3.36E+00	3.84E+00	4.64E+00	1.68E+01	1.93E+01	MW-54-144
	002	144	-130.9	7/31/2007	13:33	1.89E+03	5.67E+02	2.66E+02	1.92E+01	1.98E+00	6.71E-01	-1.19E+00	2.90E+00	3.03E+00	5.02E-02	3.33E+00	3.77E+00	-6.13E+00	1.89E+01	2.23E+01	
	003	144	-130.9	10/19/2007	12:12	1.54E+03	4.73E+02	3.62E+02	1.58E+01	2.15E+00	7.69E-01	8.53E-01	2.85E+00	3.35E+00	-4.41E-01	3.18E+00	3.39E+00	4.35E-01	1.54E+01	1.78E+01	
	004	144	-130.9	1/15/2008	11:22	1.40E+03	5.34E+02	4.16E+02	1.53E+01	2.34E+00	8.48E-01	3.67E+00	5.04E+00	4.39E+00	4.86E-02	3.96E+00	4.34E+00	9.81E+00	2.24E+01	2.54E+01	
	005	144	-130.9	5/2/2008	10:20	1.15E+03	1.64E+02	1.43E+02	1.59E+01	1.31E+00	7.05E-01	-9.63E-01	2.26E+00	3.61E+00	-1.06E+00	2.37E+00	3.65E+00	-2.00E+00	1.21E+01	2.11E+01	
	006	144	-130.9	7/22/2008	15:35	1.13E+03	1.13E+02	1.31E+02	1.69E+01	1.23E+00	5.01E-01	1.57E+00	1.91E+00	3.48E+00	-4.98E-01	2.43E+00	3.49E+00	1.11E+01	1.69E+01	2.87E+01	
	007	144	-130.9	11/11/2008	11:06	1.14E+03	2.03E+02	1.72E+02	2.02E+01	2.27E+00	4.69E-01	-6.18E-01	3.90E+00	4.30E+00	5.67E-01	5.17E+00	5.96E+00	4.08E+00	2.09E+01	2.39E+01	
	008	144	-130.9	2/3/2009	12:41	1.13E+03	2.03E+02	1.77E+02	1.44E+01	1.76E+00	6.51E-01	-5.38E-03	3.15E+00	3.46E+00	-2.00E-02	2.91E+00	3.20E+00	2.21E+00	2.37E+01	2.76E+01	
MW-54-173	001	172.5	-159.4	5/3/2007	14:43	1.90E+03	6.27E+02	4.71E+02	2.09E+01	2.64E+00	8.31E-01	-4.52E-01	3.82E+00	4.16E+00	1.92E+00	3.46E+00	4.27E+00	5.00E+00	1.94E+01	2.21E+01	MW-54-173
	002	172.5	-159.4	7/31/2007	13:40	2.08E+03	5.94E+02	2.68E+02	1.45E+01	1.85E+00	8.29E-01	7.90E-01	2.63E+00	3.10E+00	7.75E-01	2.22E+00	2.74E+00	3.92E+00	1.81E+01	2.07E+01	
	003	172.5	-159.4	10/19/2007	12:14	1.91E+03	5.07E+02	3.63E+02	1.49E+01	2.07E+00	6.21E-01	1.05E+00	3.29E+00	3.79E+00	-3.08E-01	2.87E+00	3.18E+00	1.37E+00	1.49E+01	1.70E+01	
	004	172.5	-159.4	1/15/2008	11:15	1.84E+03	5.84E+02	4.16E+02	1.41E+01	1.80E+00	9.29E-01	-3.68E-01	2.81E+00	3.08E+00	5.21E-01	3.00E+00	3.49E+00	4.79E+00	2.30E+01	2.65E+01	
	005	172.5	-159.4	5/2/2008	10:35	2.11E+03	2.10E+02	1.42E+02	1.22E+01	1.18E+00	9.06E-01	-6.44E-01	2.22E+00	3.66E+00	1.71E+00	2.10E+00	4.01E+00	4.47E+00	1.23E+01	2.10E+01	
	006	172.5	-159.4	7/22/2008	15:51	2.05E+03	1.35E+02	1.30E+02	1.29E+01	1.08E+00	5.25E-01	-6.92E-02	2.07E+00	3.52E+00	-1.62E+00	2.11E+00	3.15E+00	7.86E+00	1.59E+01	2.72E+01	
	007	172.5	-159.4	11/11/2008	11:07	1.66E+03	2.24E+02	1.75E+02	1.61E+01	2.12E+00	7.21E-01	1.51E-01	4.23E+00	4.77E+00	-5.84E-01	3.93E+00	4.19E+00	3.04E+00	1.92E+01	2.20E+01	
	008	172.5	-159.4	2/3/2009	12:19	1.98E+03	5.45E+02	3.85E+02	1.02E+01	1.45E+00	5.93E-01	-1.52E+00	3.03E+00	3.08E+00	-2.37E+00	3.20E+00	2.94E+00	4.01E+00	2.37E+01	2.76E+01	
MW-54-190	001	190	-176.9	5/3/2007	15:00	1.87E+03	6.23E+02	4.71E+02	1.95E+01	2.56E+00	7.00E-01	1.82E+00	3.23E+00	3.90E+00	3.32E-01	2.90E+00	3.30E+00	1.54E+00	1.88E+01	2.18E+01	MW-54-190
	002	190	-176.9	7/31/2007	13:45	2.25E+03	6.12E+02	2.66E+02	1.79E+01	2.15E+00	7.59E-01	-2.13E+00	3.35E+00	3.12E+00	9.32E-01	3.09E+00	3.67E+00	-3.07E+00	1.66E+01	1.94E+01	
	003	190	-176.9	10/19/2007	12:20	2.13E+03	5.24E+02	3.60E+02	2.04E+01	2.46E+00	7.97E-01	-1.04E+00	3.45E+00	3.07E+00	7.41E-01	4.05E+00	3.33E+00	-3.38E+00	1.71E+01	1.97E+01	
	004	190	-176.9	1/15/2008	11:37	2.24E+03	6.26E+02	4.16E+02	1.93E+01	2.54E+00	8.15E-01	6.45E-01	2.64E+00	3.11E+00	-3.88E-01	2.28E+00	2.50E+00	9.23E+00	2.42E+01	2.75E+01	
	005	190	-176.9	5/2/2008	10:30	1.84E+03	1.98E+02	1.43E+02	1.95E+01	1.40E+00	7.88E-01	8.19E-01	1.98E+00	3.46E+00	8.81E-01	1.95E+00	3.51E+00	6.07E+00	1.25E+01	2.13E+01	
	006	190	-176.9	7/22/2008	15:50	1.25E+03	1.15E+02	1.30E+02	2.13E+01	1.37E+00	5.60E-01	8.45E-01	1.98E+00	3.41E+00	-1.64E+00	2.06E+00	3.02E+00	-8.42E+00	1.61E+01	2.92E+01	
	007	190	-176.9	11/11/2008	11:09	1.44E+03	2.10E+02	1.69E+02	3.38E+01	3.12E+00	6.14E-01	-5.41E-01	5.00E+00	5.54E+00	-6.47E-01	3.54E+00	3.63E+00	4.86E-01	1.91E+01	2.20E+01	
	008	190	-176.9	2/3/2009	12:35	1.43E+03	4.88E+02	3.80E+02	1.90E+01	1.85E+00	3.85E-01	-1.18E+00	3.48E+00	3.74E+00	7.39E-01	3.08E+00	3.70E+00	-5.10E+00	2.37E+01	2.84E+01	
MW-55-24	001	19.1	-0.8	11/9/2006	13:20	2.00E+03	1.11E+03	1.00E+03	1.66E+01	2.40E+00	1.90E+00	-7.00E-01	4.50E+00	5.80E+00	4.00E-01	5.40E+00	6.70E+00	1.10E+00	5.40E+00	6.00E+00	MW-55-24
	002	16	2.3	6/28/2007	11:20	3.08E+03	2.96E+02	1.87E+02	3.25E+01	3.51E+00	1.06E+00	0.00E+00	4.00E+00	3.70E+00	1.16E+00	3.81E+00	4.60E+00	NA	NA	NA	
	003	16	2.3	8/2/2007	11:17	2.71E+03	7.28E+02	5.47E+02	2.31E+01	2.67E+00	9.19E-01	-4.91E-01	2.79E+00	3.02E+00	1.40E+00	2.94E+00	3.47E+00	-7.94E+00	1.91E+01	2.31E+01	
	004	16	2.3	10/16/2007	10:15	2.20E+03	5.36E+02	3.68E+02	2.29E+01	2.61E+00	8.43E-01	6.26E-01	3.63E+00	4.21E+00	7.46E-01	3.29E+00	3.47E+00	NA	NA	NA	
	005	16	2.3	1/28/2008	12:57	1.14E+03	3.65E+02	2.96E+02	2.26E+01	2.46E+00	9.24E-01	3.33E+00	3.26E+00	2.50E+00	1.04E+00	1.55E+00	2.51E+00	1.44E+01	1.82E+01	2.00E+01	
	006	16	2.3	4/25/2008	14:15	1.05E+03	1.59E+02	1.44E+02	2.55E+01	1.57E+00	4.89E-01	1.08E+00	2.31E+00	4.02E+00	-9.33E-01	2.55E+00	4.02E+00	1.25E+00	1.14E+01	1.97E+01	
	007	16	2.3	8/1/2008	13:15	1.40E+03	1.93E+02	1.91E+02	2.22E+01	1.36E+00	5.73E-01	-7.37E-03	2.19E+00	3.69E+00	2.85E+00	2.34E+00	4.16E+00	6.11E+00	1.24E+01	2.11E+01	
	008	16	2.3	10/21/2008	13:19	7.82E+02	2.57E+02	1.93E+02	1.08E+01	1.80E+00	5.55E-01	1.30E+00	5.13E+00	5.92E+00	-3.49E+00	6.66E+00	6.59E+00	4.77E+00	1.79E+01	2.03E+01	
	009	16	2.3	2/11/2009	12:55	1.04E+03	4.49E+02	3.84E+02	1.69E+01	1.74E+00	3.85E-01	1.90E+00	2.88E+00	3.50E+00	1.35E+00	3.14E+00	3.76E+00	-1.21E+01	2.45E+01	2.99E+01	
MW-55-35	001	32.4	-14.2	11/9/2006	13:40	9.04E+03	1.50E+03	1.00E+03	4.04E+01	4.80E+00	3.30E+00	-1.10E+00	3.30E+00	3.90E+00	-5.00E-01	3.30E+00	4.10E+00	4.30E+00	5.40E+00	5.80E+00	MW-55-35
	002	32	-13.8	6/28/2007	11:50	3.09E+03	2.93E+02	1.84E+02	3.25E+01	3.31E+00	9.74E-01	-4.64E-01	3.46E+00	3.78E+00	-1.00E+00	3.62E+00	3.75E+00	NA	NA	NA	
	003	32	-13.8	8/2/2007	11:20	3.68E+03	7.91E+02	5.33E+02	3.40E+01	3.45E+00	8.95E-01	9.35E-01	3.19E+00	3.24E+00	7.69E-01	2.23E+00	2.70E+00	2.90E+00	1.96E+01	2.28E+01	
	004	32	-13.8	10/16/2007	10:02	5.09E+03	7.34E+02	3.63E+02	3.16E+01	3.04E+00	1.04E+00	2.62E+00	3.36E+00	3.58E+00	1.44E+00	3.44E+00	4.20E+00	NA	NA	NA	
	005	32	-13.8	1/28/2008	11:46	2.33E+03	4.59E+02	2.97E+02	2.64E+01	2.60E+00	5.21E-01	-5.28E-01	2.12E+00	2.26E+00	-6.90E-01	2.19E+00	2.32E+00	1.12E+01	1.76E+01	1.96E+01	
	006	32	-13.8	4/25/2008	12:07	1.60E+03	1.86E+02	1.42E+02	3.44E+01	1.86E+00	6.11E-01	1.46E+00	2.26E+00	4.06E+00	2.34E+00	2.40E+00	4.61E+00	5.22E+00	1.25E+01	2.14E+01	
	007	32	-13.8	8/1/2008	10:47	1.73E+03	2.08E+02	1.91E+02	2.54E+01	1.42E+00	4.28E-01	3.51E-01	2.17E+00	3.74E+00	2.59E-01	2.33E+00	3.99E+00	1.26E+01	1.23E+01	2.05E+01	
	008	32	-13.8	2/4/2009	13:46	8.53E+02	4.28E+02	3.84E+02	1.71E+01	1.82E+00	4.39E-01	1.01E+00	3.14E+00	3.69E+00	1.58E-01	2.78E+00	3.15E+00	8.49E-01	2.30E+01	2.69E+01	
MW-55-54	001	49	-30.8	11/9/2006	13:30	1.31E+04	1.68E+03	1.00E+03	2.28E+01	1.35E+00	8.10E-01	1.00E+00	3.30E+00	3.80E+00	-3.20E+00	4.50E+00	5.70E+00	1.70E+00	4.80E+00	5.40E+00	MW-55-54
	002	47	-28.8	6/28/2007	11:40	1.04E+04	4.79E+02	1.84E+02	2.47E+01	2.88E+00	9.85E-01	1.30E-01	3.09E+00	3.43E+00	-4.69E-01	3.27E+00	3.48E+00	NA	NA	NA	
	003	47	-28.8	8/2/2007	12:00	9.91E+03	1.19E+03	5.51E+02	2.22E+01	2.38E+00	9.10E-01	-1.09E+00	3.69E+00	3.80E+00	1.46E+00	2.87E+00	3.56E+00	6.13E+00	1.99E+01	2.28E+01	
	004	47	-28.8	10/16/2007	10:05	1.03E+04	9.96E+02	3.61E+02	2.23E+01	2.49E+00	6.15E-01	-9.80E-01	2.82E+00	3.02E+00	8.80E-01	3.65E+00	2.99E+00	NA	NA	NA	
	005	47	-28.8	1/28/2008	11:42	7.48E+03	7.35E+02	2.97E+02	2.28E+01	2.40E+00	5.39E-01	-8.47E-01	2.16E+00	2.30E+00	-1.29E+00	2.81E+00	2.20E+00	1.09E+01	1.86E+01	2.09E+01	
	006	47	-28.8	4/25/2008	10:35	5.96E+03	3.39E+02	1.44E+02	2.67E+01	1.62E+00	6.56E-01	1.74E+00	2.35E+00	4.25E+00	1.63E+00	2.59E+00	4.75E+00	7.69E+00	1.25E+01	2.13E+01	
	007	47	-28.8	8/1/2008	10:38	6.31E+03	3.59E+02	1.91E+02	2.32E+01	1.30E+00	3.56E-01	6.53E-01	2.07E+00	3.52E+00	1.29E+00	1.79E+00	3.30E+00	1.82E+01	1.26E+01	2.08E+01	
	008	47	-28.8	10/21/2008	10:21	7.76E+03	6.65E+02	1.96E+02	1.94E+01	2.37E+00	6.25E-01	-3.17E+00	5.29E+00	5.27E+00	-1.63E+00	5.43E+00	5.54E+00	-9.99E+00	1.69E+01	2.01E+01	
	009	47	-28.8	2/4/2009	12:42	7.33E+03	9.09E+02	3.82E+02	2.11E+01	2.01E+00	3.69E-01	-3.34E-01	3.11E+00	3.46E+00	-3.64E-01	3.35E+00	3.69E+00	5.24E+00	2.34E+01	2.70E+01	
MW-56-53	001	52.5	17.8	1/4/2007	9:39	7.80E+02	5.40E+02	5.10E+02	-9.00E-02	7.80E-01	8.80E-01	1.36E+01	4.80E+00	4.20E+00	2.00E+00	3.60E+00	3.80E+00	-3.70E+00	6.60E+00	7.80E+00	MW-56-53
	002	52	18.3	6/26/2007	10:51	2.89E+02	1.70E+02	1.82E+02	-4.49E-02	5.50E-01	6.66E-01	-5.30E-01	4.46E+00	4.11E+00	2.93E+00	4.88E+00	4.84E+00	1.30E+00	1.41E+01	1.62E+01	
	003	52	18.3	8/10/2007	12:25	2.16E+02	1.86E+02	2.03E+02	-5.66E-01	6.10E-01	9.04E-01	8.31E-01	2.79E+00	3.21E+00	3.99E-02	2.56E+00	2.85E+00	NA	NA	NA	
	004	52	18.3	1/31/2008	12:30	2.63E+02	1.27E+02	1.31E+02	5.70E-01	8.81E-01	9.77E-01	3.38E-01	3.69E+00	3.87E+00	5.97E-01	3.48E+00	3.99E+00	1.74E+00	1.55E+01	1.80E+01	
	005	52	18.3	10/24/2008	12:21	3.99E+02	1.64E+02	1.65E+02	5.40E-01	5.47E-01	5.45E-01	-7.92E-02	5.88E+00	6.64E+00	-5.42E+00	7.44E+00	6.23E+00	NA	NA	NA	
MW-56-83	001	75.8	-5.5	9/8/2006	11:15	5.40E+02	1.62E+02	1.26E+02	2.70E+00	1.12E+00	9.59E-01	1.82E+00	6.51E+00	8.45E+00	-2.15E-01	5.23E+00	6.87E+00	NA	NA	NA	MW-56-83
	002	74	-3.7	11/9/2006	10:20	1.65E+02	1.35E+02	1.40E+02	7.00E-02	7.20E-01	8.10E-01	7.70E-01	2.70E+00	3.10E+00	-2.20E-01	2.91E+00	3.50E+00	3.30E+00	5.40E+00	5.80E+00	
	003	74	-3.7	1/4/2007	13:20	1.28E+03	5.70E+02	5.20E+02	2.30E+00	9.00E-01	8.90E-01	1.18E+01	4.80E+00	4.40E+00	1.00E-01	3.00E+00	3.60E+00	-7.00E-01	7.80E+00	8.80E+00	
	004	74	-3.7	6/22/2007	10:44	1.85E+03	5.76E+02	4.30E+02	1.87E+00	1.15E+00	1.09E+00	1.47E-01	3.39E+00	3.85E+00	-1.87E+00	2.82E+00	2.46E+00	3.95E+00	1.27E+01	1.46E+01	
	005	74	-3.7	8/10/2007	11:10	1.49E+03	5.52E+02	4.55E+02	2.43E+00	1.05E+00	9.23E-01	-9.15E-01	3.86E+00	4.02E+00	1.87E-01	2.75E+00	3.15E+00	NA	NA	NA	
	006	74	-3.7	1/31/2008	9:30	1.94E+03	1.97E+02	1.34E+02	3.56E+00	1.34E+00	9.49E-01	-8.03E-01	3.69E+00	3.23E+00	1.60E+00	2.78E+00	3.51E+00	6.57E-01	1.59E+01	1.85E+01	
	007	74	-3.7	10/24/2008	12:22	2.98E+03	7.91E+02	5.91E+02	2.13E+00	7.32E-01	4.94E-01	-1.15E+00	4.62E+00	4.98E+00	3.29E+00	5.58E+00	8.07E+00	NA	NA	NA	
MW-57-11	001	10	5	6/22/2007	12:17	4.61E+03	8.10E+02	4.36E+02	4.55E+01	3.96E+00	7.97E-01	2.29E+00	6.04E+00	4.31E+00	3.69E-02	3.87E+00	4.37E+00	2.24E+01	1.79E+01	1.91E+01	MW-57-11
	002	10	5	8/6/2007	12:30	4.09E+03	3.21E+06	1.97E+02	3.79E+01	2.77E+00	5.36E-01	1.15E+00	3.78E+00	4.16E+00	3.95E-03	3.01E+00	3.41E+00	-5.75E-01	2.16E+01	2.50E+01	
	003	10	5	5/5/2008	12:43	2.17E+03	2.29E+02	2.65E+02	2.27E+01	1.95E+00	9.08E-01	8.71E-01	2.21E+00	3.83E+00	2.87E+00	2.26E+00	4.47E+00	-1.12E+00	1.35E+01	2.34E+01	
	004	10	5	11/12/2008	10:55	3.28E+03	2.76E+02	1.73E+02	4.16E+01	3.39E+00	7.64E-01	3.34E+00	7.25E+00	4.76E+00	1.81E+00	3.78E+00	5.03E+00	-5.18E-01	2.03E+01	2.35E+01	
MW-57-20	001	19	-4	6/22/2007	12:30	1.65E+03	5.58E+02	4.32E+02	1.96E+00	1.07E+00	9.67E-01	-1.33E+00	3.69E+00	3.90E+00	-9.51E-01	3.65E+00	3.84E+00	4.77E-01	1.36E+01	1.59E+01	MW-57-20
	002	19	-4	8/6/2007	12:15	9.96E+02	2.15E+02	1.96E+02	1.23E+00	6.67E-01	5.78E-01	1.21E+00	3.59E+00	3.64E+00	6.05E-01	2.75E+00	3.22E+00	-1.19E+01	2.06E+01	2.46E+01	
	003	19	-4	5/5/2008	13:18	7.27E+02	1.45E+02	1.97E+02	1.23E+00	2.16E-01	2.85E-01	-2.17E+00	1.99E+00	2.84E+00	-9.61E-01	3.60E+00	4.56E+00	-6.89E+00	9.27E+00	1.62E+01	

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS																Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)				
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC		
	004	19	-4	11/12/2008	11:30	1.51E+03	2.16E+02	1.72E+02	3.06E+00	1.30E+00	1.14E+00	-1.91E+00	3.94E+00	3.82E+00	-4.35E-01	3.52E+00	3.67E+00	-5.58E-01	1.94E+01	2.25E+01		
MW-57-45	001	40	-25	8/24/2006	9:30	4.00E+03	6.98E+02	3.17E+02	1.88E+01	3.51E+00	2.11E+00	-5.40E-01	6.75E+00	7.36E+00	1.19E+00	6.35E+00	7.50E+00	8.29E+00	9.09E+00	9.70E+00		MW-57-45
	001	40	-25	8/24/2006	9:30	4.06E+03	8.82E+02	7.71E+02	NA	NA	NA	-2.85E-01	4.41E+00	4.80E+00	-1.81E-01	3.89E+00	4.37E+00	NA	NA	NA		
	002	40	-25	6/22/2007	12:55	9.55E+02	4.85E+02	4.35E+02	1.90E+00	1.05E+00	8.65E-01	-1.97E-01	3.40E+00	3.82E+00	-8.51E-01	3.50E+00	3.65E+00	6.46E-01	1.23E+01	1.43E+01		
	003	40	-25	8/6/2007	12:17	7.40E+02	2.07E+02	1.98E+02	2.55E+00	8.77E-01	6.09E-01	-3.91E-01	3.15E+00	3.42E+00	-1.89E-01	3.59E+00	3.35E+00	-1.15E+01	2.09E+01	2.49E+01		
	004	40	-25	5/5/2008	14:59	5.65E+02	1.38E+02	1.97E+02	2.26E+00	2.91E-01	3.68E-01	-1.35E-01	1.68E+00	2.84E+00	-4.61E-01	1.66E+00	2.69E+00	-3.60E+00	9.38E+00	1.62E+01		
	005	40	-25	11/12/2008	13:22	1.13E+03	2.01E+02	1.73E+02	1.20E+00	6.79E-01	5.97E-01	1.72E-01	3.63E+00	4.05E+00	9.15E-01	4.42E+00	5.17E+00	-2.81E+00	1.91E+01	2.22E+01		
MW-58-26	001	21.6	-7.0	11/16/2006	13:25	-2.60E+01	1.59E+02	1.60E+02	3.70E-01	7.50E-01	8.20E-01	7.27E+01	8.40E+00	4.50E+00	-9.00E-01	3.30E+00	4.30E+00	-3.20E+00	5.70E+00	6.40E+00		MW-58-26
	002	21.6	-7.0	1/5/2007	8:57	2.60E+02	1.80E+02	1.80E+02	-8.00E-02	7.50E-01	8.50E-01	2.34E+00	2.97E+00	3.20E+00	9.50E-01	2.73E+00	3.10E+00	-3.90E+00	6.30E+00	7.40E+00		
	003	20	-5.4	6/21/2007	11:10	5.97E+02	2.00E+02	1.86E+02	1.04E+00	6.09E-01	5.25E-01	1.62E+00	2.42E+00	2.86E+00	-3.94E-01	2.42E+00	2.60E+00	1.07E+00	1.24E+01	1.45E+01		
	004	20	-5.4	7/31/2007	11:00	8.56E+02	3.99E+02	2.58E+02	1.02E+00	6.33E-01	5.78E-01	1.18E+00	3.31E+00	3.83E+00	4.20E-01	3.01E+00	3.51E+00	NA	NA	NA		
	005	20	-5.4	1/22/2008	13:20	2.95E+02	1.62E+02	1.70E+02	-1.43E-01	4.65E-01	6.60E-01	9.19E-01	2.31E+00	2.67E+00	-5.41E-02	2.57E+00	2.61E+00	NA	NA	NA		
	006	20	-5.4	11/7/2008	13:39	2.38E+02	1.55E+02	1.63E+02	2.31E-01	6.60E-01	7.90E-01	-3.38E+00	6.24E+00	5.49E+00	-3.23E-01	4.58E+00	4.84E+00	NA	NA	NA		
	007	20	-5.4	2/3/2009	12:49	5.19E+02	2.36E+02	1.98E+02	-8.35E-03	5.27E-01	6.83E-01	1.40E+00	2.76E+00	3.29E+00	1.45E-01	3.09E+00	3.31E+00	NA	NA	NA		
MW-58-65	001	57.6	-43	11/16/2006	13:18	-9.60E+01	1.59E+02	1.60E+02	-6.00E-02	7.20E-01	8.10E-01	2.20E+00	3.00E+00	3.30E+00	-9.00E-01	4.20E+00	4.90E+00	-3.40E+00	6.90E+00	7.80E+00		MW-58-65
	002	57.6	-43	1/5/2007	9:25	5.50E+02	5.40E+02	5.20E+02	1.60E-01	8.10E-01	8.80E-01	-1.95E+00	2.52E+00	3.00E+00	-1.30E-01	2.73E+00	3.20E+00	-1.40E+00	7.80E+00	8.70E+00		
	003	54	-39.4	6/21/2007	11:10	3.15E+02	1.77E+02	1.81E+02	-1.90E-01	3.96E-01	5.60E-01	-2.19E-01	2.37E+00	2.65E+00	-2.89E+00	3.17E+00	2.36E+00	2.80E+00	1.26E+01	1.45E+01		
	004	54	-39.4	7/31/2007	11:00	3.42E+02	3.02E+02	2.72E+02	6.20E-03	5.19E-01	6.52E-01	2.18E+00	3.39E+00	3.37E+00	1.02E+00	3.24E+00	3.39E+00	NA	NA	NA		
	005	54	-39.4	1/22/2008	12:00	3.13E+02	1.62E+02	1.69E+02	1.21E-01	5.85E-01	7.22E-01	5.54E-01	3.93E+00	3.92E+00	-1.23E-01	3.29E+00	3.05E+00	NA	NA	NA		
	006	54	-39.4	11/7/2008	13:55	2.81E+02	1.55E+02	1.62E+02	8.19E-01	8.77E-01	8.82E-01	9.13E-02	3.38E+00	3.86E+00	-1.58E+00	3.21E+00	2.98E+00	NA	NA	NA		
	007	54	-39.4	2/3/2009	12:05	2.75E+02	2.03E+02	1.98E+02	6.60E-01	8.00E-01	8.56E-01	-8.45E-01	3.21E+00	3.41E+00	1.91E+00	3.09E+00	3.89E+00	NA	NA	NA		
MW-59-32	001	26.2	-11.7	11/16/2006	11:05	2.80E+01	1.77E+02	1.80E+02	-6.00E-02	7.20E-01	7.90E-01	8.60E-01	2.91E+00	3.30E+00	3.00E-01	4.20E+00	4.90E+00	-2.60E+00	6.60E+00	7.50E+00		MW-59-32
	002	26.2	-11.7	1/5/2007	9:41	1.35E+02	1.77E+02	1.80E+02	3.00E-01	7.50E-01	8.20E-01	1.50E+00	3.60E+00	4.10E+00	1.30E+00	3.90E+00	4.40E+00	-1.90E+00	6.90E+00	8.10E+00		
	003	27	-12.5	6/21/2007	15:25	4.67E+02	4.23E+02	4.36E+02	-6.68E-02	6.78E-01	9.11E-01	6.01E-01	3.96E+00	4.59E+00	-4.19E-01	4.46E+00	4.71E+00	-4.37E-01	1.24E+01	1.45E+01		
	004	27	-12.5	7/31/2007	14:35	1.69E+02	1.59E+02	1.63E+02	2.00E-01	6.72E-01	7.96E-01	2.26E-01	3.30E+00	3.73E+00	7.97E-01	3.19E+00	3.75E+00	NA	NA	NA		
MW-59-45	001	40.4	-25.9	11/16/2006	11:18	5.50E+01	1.74E+02	1.70E+02	2.40E-01	7.20E-01	8.00E-01	3.74E+01	8.70E+00	6.20E+00	2.60E+00	4.20E+00	4.50E+00	-1.60E+00	5.70E+00	6.60E+00		MW-59-45
	002	40.4	-25.9	1/5/2007	9:48	8.80E+01	1.80E+02	1.80E+02	0.00E+00	7.80E-01	8.70E-01	1.49E+02	1.26E+01	4.90E+00	2.00E-01	3.90E+00	4.60E+00	-2.50E+00	7.50E+00	8.60E+00		
	003	42	-27.5	6/21/2007	15:25	7.54E+02	4.59E+02	4.34E+02	-2.74E-01	6.86E-01	9.10E-01	-1.10E-01	2.50E+00	2.83E+00	8.14E-02	2.16E+00	2.49E+00	7.74E-01	1.47E+01	1.71E+01		
	004	42	-27.5	7/31/2007	13:58	2.49E+02	1.74E+02	1.65E+02	1.64E-01	5.90E-01	7.05E-01	4.48E-01	3.52E+00	3.70E+00	7.64E-01	3.35E+00	3.94E+00	NA	NA	NA		
MW-59-68	001	60.6	-46.1	11/16/2006	11:30	5.50E+01	1.74E+02	1.80E+02	1.20E-01	7.20E-01	8.10E-01	1.15E+02	1.11E+01	5.60E+00	1.00E+00	3.00E+00	3.60E+00	-2.30E+00	5.70E+00	6.40E+00		MW-59-68
	002	60.6	-46.1	1/5/2007	10:05	1.56E+02	1.83E+02	1.80E+02	3.30E-01	8.10E-01	8.90E-01	6.76E+01	6.60E+00	4.10E+00	-8.00E-01	3.60E+00	4.10E+00	1.90E+00	7.50E+00	8.40E+00		
	003	58	-43.5	6/21/2007	15:25	5.90E+02	4.41E+02	4.39E+02	2.97E-01	8.79E-01	1.03E+00	6.26E-01	3.50E+00	3.80E+00	1.27E+00	2.91E+00	3.62E+00	-4.23E+00	1.30E+01	1.56E+01		
	004	58	-43.5	7/31/2007	13:58	8.19E+02	4.02E+02	2.68E+02	3.66E-01	7.08E-01	7.98E-01	9.02E-01	2.88E+00	2.95E+00	3.72E-01	2.77E+00	3.17E+00	NA	NA	NA		
MW-60-35	001	34.9	-22.4	5/8/2007	13:27	-9.12E+00	1.49E+02	1.79E+02	-1.79E-01	5.28E-01	7.62E-01	1.41E+00	4.84E+00	3.30E+00	2.45E+00	3.72E+00	4.67E+00	0.00E+00	1.81E+01	2.12E+01		MW-60-35
	002	34.9	-22.4	7/27/2007	13:07	7.61E+02	2.40E+02	1.78E+02	6.48E-02	3.80E-01	4.66E-01	5.95E-01	4.26E+00	3.23E+00	-3.31E-01	3.07E+00	3.39E+00	NA	NA	NA		
	003	34.9	-22.4	10/9/2007	13:20	1.84E+02	1.48E+02	1.51E+02	3.01E-01	5.97E-01	6.78E-01	1.51E+00	6.06E+00	3.54E+00	0.00E+00	2.64E+00	2.61E+00	NA	NA	NA		
	004	34.9	-22.4	1/14/2008	17:05	7.78E+01	1.58E+02	1.78E+02	5.05E-01	8.10E-01	8.98E-01	1.11E+00	3.21E+00	3.79E+00	-9.16E-01	3.36E+00	3.54E+00	NA	NA	NA		
	005	34.9	-22.4	4/24/2008	15:30	5.51E+01	1.14E+02	1.95E+02	3.45E-01	4.83E-01	8.34E-01	-8.41E-01	2.06E+00	3.37E+00	-8.73E-01	1.68E+00	2.56E+00	NA	NA	NA		
	006	34.9	-22.4	7/30/2008	16:10	1.95E+02	1.21E+02	1.91E+02	2.85E-01	3.50E-01	5.92E-01	1.81E+00	1.93E+00	3.50E+00	-1.19E+00	2.07E+00	3.20E+00	NA	NA	NA		
	007	34.9	-22.4	11/5/2008	15:03	1.42E+02	1.80E+02	1.99E+02	1.62E-01	5.01E-01	6.09E-01	-2.38E+00	5.87E+00	6.17E+00	-3.83E+00	8.52E+00	7.56E+00	NA	NA	NA		
	008	34.9	-22.4	2/9/2009	16:12	2.00E+02	1.83E+02	1.98E+02	3.81E-01	8.27E-01	9.42E-01	-1.20E+00	3.09E+00	3.19E+00	-3.23E-01	3.00E+00	3.22E+00	-3.26E+00	2.39E+01	2.82E+01		
MW-60-53	001	53.4	-40.9	5/8/2007	11:52	5.32E+01	1.58E+02	1.82E+02	-4.92E-01	5.52E-01	8.96E-01	-2.83E+00	4.86E+00	4.07E+00	2.15E-01	3.59E+00	4.12E+00	3.58E+00	1.84E+01	2.12E+01		MW-60-53
	002	53.4	-40.9	7/27/2007	12:50	1.25E+02	1.71E+02	1.87E+02	-4.72E-01	5.26E-01	7.31E-01	1.46E-01	3.01E+00	3.34E+00	7.87E-01	3.25E+00	3.79E+00	NA	NA	NA		
	003	53.4	-40.9	10/9/2007	12:22	1.13E+02	1.44E+02	1.56E+02	6.19E-01	6.50E-01	6.79E-01	-2.11E+00	3.39E+00	3.51E+00	3.62E-01	2.79E+00	3.21E+00	NA	NA	NA		
	004	53.4	-40.9	1/14/2008	15:40	5.35E+01	1.55E+02	1.78E+02	-1.69E-01	5.28E-01	7.59E-01	-1.10E+00	2.78E+00	2.88E+00	-1.89E+00	2.94E+00	2.76E+00	NA	NA	NA		
	005	53.4	-40.9	4/24/2008	12:18	-1.77E+01	1.12E+02	1.96E+02	5.27E-01	5.19E-01	8.52E-01	-4.84E-01	2.47E+00	4.13E+00	-1.36E+00	2.50E+00	3.95E+00	NA	NA	NA		
	006	53.4	-40.9	7/30/2008	13:23	1.28E+02	9.80E+01	1.63E+02	6.53E-01	5.33E-01	8.58E-01	-1.68E-01	2.09E+00	3.43E+00	1.05E+00	2.04E+00	3.65E+00	NA	NA	NA		
	007	53.4	-40.9	11/5/2008	14:32	1.38E+02	1.80E+02	1.99E+02	-1.95E-01	5.82E-01	8.17E-01	8.77E-01	4.58E+00	5.22E+00	1.30E+00	5.78E+00	6.68E+00	NA	NA	NA		
	008	53.4	-40.9	2/9/2009	11:28	1.31E+02	1.79E+02	1.98E+02	4.81E-01	8.09E-01	9.06E-01	-1.28E+00	3.80E+00	3.55E+00	5.34E-01	2.78E+00	3.22E+00	-1.24E+00	2.43E+01	2.85E+01		
MW-60-72	001	72.4	-59.9	5/8/2007	12:17	-9.26E+00	1.52E+02	1.82E+02	2.87E-01	8.13E-01	9.71E-01	1.61E+00	4.72E+00	3.33E+00	9.40E-01	3.21E+00	3.82E+00	8.28E-01	1.69E+01	1.97E+01		MW-60-72
	002	72.4	-59.9	7/27/2007	13:22	1.10E+02	1.64E+02	1.81E+02	-3.27E-01	4.92E-01	5.76E-01	4.79E-01	3.96E+00	4.51E+00	-1.10E+00	3.94E+00	4.17E+00	NA	NA	NA		
	003	72.4	-59.9	10/9/2007	14:15	1.24E+02	1.43E+02	1.54E+02	1.64E-01	6.00E-01	7.12E-01	7.48E-01	3.78E+00	4.27E+00	6.12E-01	3.76E+00	4.33E+00	NA	NA	NA		
	004	72.4	-59.9	1/14/2008	14:12	1.36E+02	1.65E+02	1.78E+02	1.58E-01	5.93E-01	7.23E-01	5.42E-03	3.33E+00	3.56E+00	8.47E-01	2.97E+00	3.54E+00	NA	NA	NA		
	005	72.4	-59.9	4/24/2008	12:20	1.65E+02	1.17E+02	1.93E+02	3.08E-01	4.82E-01	8.38E-01	-5.33E-01	2.37E+00	3.92E+00	1.80E-01	2.23E+00	3.75E+00	NA	NA	NA		
	006	72.4	-59.9	7/30/2008	13:25	8.27E+01	9.69E+01	1.63E+02	1.73E-01	1.41E-01	2.33E-01	-8.79E-01	2.39E+00	3.91E+00	-1.11E+00	2.47E+00	3.96E+00	NA	NA	NA		
	007	72.4	-59.9	11/5/2008	14:58	1.94E+02	1.64E+02	1.78E+02	2.09E-01	6.54E-01	7.78E-01	-9.53E-01	5.68E+00	6.09E+00	-1.43E+00	5.36E+00	5.64E+00	NA	NA	NA		
	008	72.4	-59.9	2/9/2009	11:25	1.67E+02	1.55E+02	1.69E+02	-4.16E-01	7.19E-01	9.60E-01	-6.54E-01	3.00E+00	3.30E+00	7.83E-01	3.09E+00	3.69E+00	-9.25E+00	2.24E+01	2.66E+01		
MW-60-135	001	134.9	-122.4	5/8/2007	12:03	2.54E+01	1.55E+02	1.81E+02	3.35E-01	6.77E-01	7.74E-01	-1.05E+00	3.50E+00	3.08E+00	1.74E-01	3.12E+00	3.52E+00	4.54E+00	1.77E+01	2.02E+01		MW-60-135
	002	134.9	-122.4	7/27/2007	16:00	3.92E+02	2.03E+02	1.81E+02	-2.13E-01	3.09E-01	4.69E-01	2.78E-02	2.70E+00	3.07E+00	1.78E-01	2.63E+00	3.04E+00	NA	NA	NA		
	003	134.9	-122.4	10/9/2007	14:20	5.20E+02	1.83E+02	1.50E+02	-2.59E-01	4.46E-01	6.31E-01	-1.55E+00	3.40E+00	3.52E+00	-8.88E-02	3.57E+00	3.94E+00	NA	NA	NA		
	004	134.9	-122.4	1/14/2008	14:19	3.79E+02	1.89E+02	1.74E+02	-1.70E-01	6.17E-01	8.52E-01	-1.33E+00	3.14E+00	3.25E+00	4.22E-01	3.17E+00	3.59E+00	NA	NA	NA		
	005	134.9	-122.4	4/24/2008	12:31	5.85E+02	1.33E+02	1.93E+02	-1.98E-02	3.17E-01	6.59E-01	1.16E+00	2.24E+00	3.93E+00	-1.70E+00	2.67E+00	3.93E+00	NA	NA	NA		
	006	134.9	-122.4	7/30/2008	13:33	4.91E+02	1.42E+02	1.91E+02	1.70E-01	3.44E-01	6.18E-01	-4.68E-01	1.79E+00	2.88E+00	1.43E+00	2.00E+00	3.61E+00	NA	NA	NA		
	007	134.9	-122.4	11/6/2008	10:49	4.25E+02	2.01E+02	1.99E+02	-1.71E-01	5.01E-01	7.18E-01	-2.18E-02	5.71E+00	6.40E+00	-3.93E+00	6.25E+00	5.99E+00	NA	NA	NA		
	008	134.9	-122.4	2/9/2009	12:04	3.83E+02	1.67E+02	1.69E+02	5.52E-01	5.96E-01	6.39E-01	1.42E+00	2.96E+00	3.48E+00	4.24E-01	3.05E+00	3.35E+00	3.74E+00	2.27E+01	2.58E+01		
MW-60-154	001	154.4	-141.9	5/8/2007	12:33	4.13E+01	1.55E+02	1.80E+02	3.06E-01	8.13E-01	9.50E-01	1.97E-01	3.46E+00	3.86E+00	1.46E+00	3.75E+00	4.46E+00	5.52E-01	1.68E+01	1.97E+01		MW-60-154
	002	154.4	-141.9	7/27/2007	16:18	4.62E+02	2.09E+02	1.79E+02	-1.53E-01	3.46E-01	4.09E-01	8.09E-01	4.23E+00	4.60E+00	3.74E+00	2.42E+00	3.80E+00	NA	NA	NA		
	003	154.4	-141.9	10/9/2007	14:23	5.80E+02	1.88E+02	1.50E+02	-1.92E-02	4.98E-01	6.33E-01	-1.63E+00	3.50E+00	3.68E+00	2.20E-01	3.30E+00	3.76E+00	NA	NA	NA		
	004	154.4	-141.9	1/14/2008	12:35	5.59E+02	2.13E+02	1.79E+02	1.10E+00	1.17E+00	1.24E+00	1.59E+00	3.84E+00	4.46E+00	2.92E-01	4.35E+00	4.82E+00	NA	NA	NA		
	005	154.4	-141.9	4/24/2008	12:36	4.53E+02	1.28E+02	1.94E+02	-2.44E-01	3.65E-01	7.77E-01	-1.25E+00	2.37E+00	3.69E+00	1.29E+00	2.06E+00	3.79E+00	NA	NA	NA		
	006	154.4	-141.9	7/30/2008	13:35	5.16E+02	1.44E+02	1.91E+02	5.10E-01	2.50E-01	3.30E-01	-8.80E-01	2.67E+00	3.58E+00	4.30E-01	1.89E+00	3.25E+00	NA	NA	NA		

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	007	154.4	-141.9	11/6/2008	11:19	6.87E+02	4.16E+02	3.86E+02	4.32E-01	6.57E-01	7.19E-01	2.47E+00	4.96E+00	5.91E+00	5.49E-01	5.87E+00	6.61E+00	NA	NA	NA	
	008	154.4	-141.9	2/9/2009	12:23	4.15E+02	1.65E+02	1.67E+02	4.63E-01	7.98E-01	8.96E-01	7.14E-01	3.02E+00	3.45E+00	1.01E+00	3.54E+00	4.13E+00	-3.74E+00	2.09E+01	2.42E+01	
MW-60-176	001	175.9	-163.4	5/8/2007	15:16	5.30E+02	2.01E+02	1.80E+02	6.88E-02	5.66E-01	7.29E-01	3.49E-01	4.54E+00	4.38E+00	1.14E+00	3.90E+00	3.98E+00	7.69E+00	1.73E+01	1.96E+01	MW-60-176
	002	175.9	-163.4	7/27/2007	17:35	8.49E+02	2.49E+02	1.78E+02	-4.60E-01	5.84E-01	7.87E-01	2.00E+00	3.29E+00	4.00E+00	-1.76E+00	3.15E+00	3.03E+00	NA	NA	NA	
	003	175.9	-163.4	10/9/2007	14:57	7.02E+02	2.01E+02	1.53E+02	-5.93E-02	5.11E-01	6.64E-01	-2.68E-01	2.63E+00	2.85E+00	3.91E-01	2.71E+00	3.09E+00	NA	NA	NA	
	004	175.9	-163.4	1/14/2008	12:25	6.68E+02	2.25E+02	1.83E+02	-7.68E-02	7.89E-01	1.04E+00	2.22E-01	3.99E+00	4.52E+00	5.49E-01	3.54E+00	4.09E+00	NA	NA	NA	
	005	175.9	-163.4	4/24/2008	13:10	7.77E+02	2.04E+02	2.73E+02	2.68E-01	4.91E-01	8.54E-01	-1.81E+00	2.70E+00	4.00E+00	-9.94E-01	2.53E+00	3.95E+00	NA	NA	NA	
	006	175.9	-163.4	7/30/2008	14:08	8.95E+02	1.67E+02	1.91E+02	-2.08E-02	2.96E-01	5.88E-01	-3.15E-01	2.12E+00	3.44E+00	-2.05E-01	2.03E+00	3.34E+00	NA	NA	NA	
	007	175.9	-163.4	11/6/2008	11:55	8.32E+02	4.35E+02	3.86E+02	2.17E-01	4.71E-01	5.45E-01	-2.63E+00	5.09E+00	5.07E+00	-1.06E-01	5.66E+00	6.33E+00	NA	NA	NA	
	008	175.9	-163.4	2/9/2009	13:08	9.16E+02	1.91E+02	1.70E+02	4.25E-01	6.80E-01	7.58E-01	-2.42E-01	3.27E+00	3.56E+00	5.10E-01	3.29E+00	3.74E+00	-1.22E+01	2.06E+01	2.44E+01	
MW-62-18	001	13.5	1.2	5/17/2007	13:10	4.52E+02	1.83E+02	1.55E+02	2.98E-02	5.53E-01	7.27E-01	-5.10E-01	2.61E+00	2.89E+00	1.00E-01	2.79E+00	3.19E+00	4.61E+00	1.52E+01	1.74E+01	MW-62-18
	002	13.5	1.2	7/26/2007	15:45	5.08E+02	2.13E+02	1.78E+02	4.68E-01	4.93E-01	5.35E-01	9.04E-01	3.75E+00	4.35E+00	-2.80E+00	4.88E+00	3.80E+00	NA	NA	NA	
	003	13.5	1.2	10/10/2007	13:50	3.76E+02	1.73E+02	1.55E+02	1.80E+00	6.67E-01	4.87E-01	0.00E+00	3.39E+00	1.87E+00	-7.14E-02	1.71E+00	1.92E+00	NA	NA	NA	
	004	13.5	1.2	1/31/2008	15:15	3.50E+02	1.34E+02	1.34E+02	4.95E-01	7.55E-01	8.27E-01	1.18E+00	4.23E+00	4.46E+00	5.24E-01	3.38E+00	3.96E+00	NA	NA	NA	
	006	13.5	1.2	8/6/2008	12:55	2.69E+02	1.41E+02	2.25E+02	5.31E-01	3.30E-01	4.89E-01	9.69E-02	1.67E+00	2.82E+00	-1.26E-01	1.99E+00	3.33E+00	NA	NA	NA	
	007	13.5	1.2	10/29/2008	13:20	4.08E+02	1.65E+02	1.66E+02	5.23E-01	6.03E-01	6.37E-01	-3.09E-02	5.10E+00	5.60E+00	-3.91E+00	5.25E+00	4.70E+00	NA	NA	NA	
	008	13.5	1.2	1/23/2009	11:55	4.64E+02	1.39E+02	1.07E+02	1.09E+00	6.47E-01	6.00E-01	9.88E-01	2.55E+00	3.06E+00	-3.42E-01	2.48E+00	2.74E+00	NA	NA	NA	
MW-62-37	001	34.5	-19.8	5/17/2007	11:10	2.97E+02	1.70E+02	1.59E+02	3.30E-01	8.28E-01	9.66E-01	9.81E-01	2.00E+00	2.37E+00	-1.12E+00	2.25E+00	2.31E+00	1.01E+01	1.81E+01	2.04E+01	MW-62-37
	002	34.5	-19.8	7/26/2007	15:35	2.50E+02	1.79E+02	1.75E+02	-2.57E-01	4.14E-01	5.18E-01	-6.88E-02	2.64E+00	2.94E+00	-4.23E-01	2.60E+00	2.81E+00	NA	NA	NA	
	003	34.5	-19.8	10/10/2007	14:50	3.02E+02	1.58E+02	1.47E+02	-1.67E-01	4.44E-01	6.10E-01	2.12E-01	1.81E+00	2.02E+00	-7.67E-01	1.74E+00	1.83E+00	NA	NA	NA	
	004	34.5	-19.8	1/10/2008	13:55	3.97E+02	1.68E+02	1.71E+02	1.34E-01	6.05E-01	7.24E-01	8.35E-01	4.43E+00	4.62E+00	-2.10E-01	3.87E+00	4.19E+00	NA	NA	NA	
	006	34.5	-19.8	8/6/2008	12:00	3.94E+02	1.19E+02	1.45E+02	2.23E-01	2.69E-01	4.54E-01	-2.55E+00	1.52E+00	2.06E+00	-1.08E+00	1.56E+00	2.38E+00	NA	NA	NA	
	007	34.5	-19.8	10/29/2008	13:57	5.35E+02	1.71E+02	1.66E+02	1.36E+00	6.57E-01	5.24E-01	4.20E-01	4.77E+00	5.33E+00	-2.20E+00	5.19E+00	5.20E+00	NA	NA	NA	
	008	34.5	-19.8	1/23/2009	12:20	4.87E+02	1.42E+02	1.08E+02	1.28E-01	7.41E-01	9.02E-01	-7.69E-01	3.12E+00	3.43E+00	-6.49E-01	3.14E+00	3.36E+00	NA	NA	NA	
MW-62-53	001	53.1	-40.3	5/10/2007	15:00	3.93E+02	1.91E+02	1.72E+02	4.41E-01	7.97E-01	8.96E-01	6.50E-01	3.40E+00	3.86E+00	-9.12E-01	3.52E+00	3.74E+00	-5.00E+00	1.40E+01	1.68E+01	MW-62-53
	002	53.1	-40.3	7/26/2007	15:34	3.45E+02	1.94E+02	1.78E+02	3.56E-01	6.98E-01	7.85E-01	0.00E+00	4.62E+00	2.53E+00	-8.44E-01	2.77E+00	2.45E+00	NA	NA	NA	
	003	53.1	-40.3	1/10/2008	15:37	3.48E+02	1.67E+02	1.71E+02	4.45E-02	6.72E-01	8.15E-01	-7.91E-01	2.75E+00	2.93E+00	7.68E-01	2.88E+00	3.43E+00	NA	NA	NA	
	005	53.1	-40.3	8/6/2008	12:35	3.52E+02	1.54E+02	2.41E+02	9.52E-03	2.54E-01	4.95E-01	1.38E+00	2.24E+00	3.98E+00	3.02E-01	2.30E+00	3.87E+00	NA	NA	NA	
	006	53.1	-40.3	10/29/2008	13:51	4.08E+02	1.67E+02	1.67E+02	6.63E-02	3.87E-01	4.94E-01	-3.99E-01	5.85E+00	6.51E+00	-2.87E+00	8.09E+00	7.19E+00	NA	NA	NA	
	007	53.1	-40.3	1/23/2009	12:44	3.56E+02	2.16E+02	2.08E+02	4.53E-01	7.68E-01	8.60E-01	2.27E-01	3.30E+00	3.77E+00	-1.27E+00	3.56E+00	3.71E+00	NA	NA	NA	
MW-62-71	001	71.1	-58.3	5/10/2007	11:35	5.02E+02	2.00E+02	1.71E+02	6.16E-01	8.34E-01	8.92E-01	-8.78E-01	3.51E+00	3.75E+00	1.37E-01	3.21E+00	3.59E+00	4.93E+00	1.29E+01	1.48E+01	MW-62-71
	002	71.1	-58.3	7/26/2007	12:20	1.51E+02	1.65E+02	1.74E+02	2.15E-01	7.26E-01	8.29E-01	1.11E+00	3.36E+00	3.91E+00	-2.39E-01	3.48E+00	3.90E+00	NA	NA	NA	
	003	71.1	-58.3	10/10/2007	12:23	2.69E+02	1.61E+02	1.55E+02	1.15E-01	5.22E-01	6.30E-01	1.18E+00	2.43E+00	2.45E+00	1.54E+00	2.10E+00	2.55E+00	NA	NA	NA	
	004	71.1	-58.3	1/10/2008	14:04	3.53E+02	1.89E+02	1.94E+02	3.78E-01	5.85E-01	6.46E-01	-7.82E-01	2.51E+00	2.72E+00	3.78E-02	2.22E+00	2.55E+00	NA	NA	NA	
	006	71.1	-58.3	8/6/2008	11:42	4.64E+02	1.66E+02	2.53E+02	3.31E-01	2.60E-01	3.94E-01	5.85E-01	2.01E+00	3.53E+00	-4.96E-01	2.23E+00	3.66E+00	NA	NA	NA	
	007	71.1	-58.3	10/29/2008	12:00	5.12E+02	1.70E+02	1.66E+02	3.70E-01	4.81E-01	5.03E-01	-2.34E+00	5.97E+00	6.37E+00	-1.31E+00	6.46E+00	7.00E+00	NA	NA	NA	
	008	71.1	-58.3	1/23/2009	12:12	2.99E+02	2.07E+02	2.04E+02	2.47E-01	7.35E-01	8.56E-01	1.92E+00	3.53E+00	4.25E+00	-4.84E-01	3.87E+00	4.22E+00	NA	NA	NA	
MW-62-92	001	91.6	-78.8	5/10/2007	11:18	7.00E+02	2.16E+02	1.68E+02	7.11E-01	9.21E-01	9.85E-01	-1.58E+00	4.63E+00	3.30E+00	7.45E-01	3.12E+00	3.72E+00	-7.73E+00	1.30E+01	1.65E+01	MW-62-92
	002	91.6	-78.8	7/26/2007	12:35	4.37E+02	2.07E+02	1.80E+02	-2.28E-02	3.39E-01	3.94E-01	6.50E-01	3.15E+00	3.63E+00	8.32E-01	3.38E+00	3.95E+00	NA	NA	NA	
	003	91.6	-78.8	10/10/2007	12:15	4.28E+02	1.73E+02	1.50E+02	-1.91E-01	4.77E-01	6.54E-01	6.23E-01	1.88E+00	2.01E+00	1.85E+00	1.80E+00	2.21E+00	NA	NA	NA	
	004	91.6	-78.8	1/10/2008	11:09	3.94E+02	1.92E+02	1.94E+02	1.38E-01	6.59E-01	7.90E-01	3.75E-01	2.94E+00	3.39E+00	9.37E-01	3.47E+00	3.62E+00	NA	NA	NA	
	006	91.6	-78.8	8/6/2008	11:49	4.95E+02	1.59E+02	2.38E+02	2.43E-01	3.29E-01	5.64E-01	1.51E+00	2.29E+00	4.11E+00	5.16E+00	2.59E+00	5.35E+00	NA	NA	NA	
	007	91.6	-78.8	10/29/2008	12:10	4.82E+02	1.68E+02	1.66E+02	-4.52E-02	5.40E-01	7.12E-01	1.64E+00	6.57E+00	7.61E+00	2.71E+00	6.33E+00	7.68E+00	NA	NA	NA	
	008	91.6	-78.8	1/23/2009	12:28	5.25E+02	2.33E+02	2.05E+02	-1.59E-01	6.86E-01	8.73E-01	2.90E-01	4.58E+00	4.83E+00	1.88E+00	3.83E+00	4.74E+00	NA	NA	NA	
MW-62-138	001	138.1	-125.3	5/10/2007	10:22	4.55E+02	1.98E+02	1.74E+02	8.19E-01	8.16E-01	8.00E-01	1.73E+00	4.17E+00	3.28E+00	-1.40E+00	3.42E+00	3.55E+00	-4.93E+00	1.32E+01	1.64E+01	MW-62-138
	002	138.1	-125.3	7/26/2007	15:55	5.38E+02	2.19E+02	1.82E+02	5.26E-01	5.79E-01	6.09E-01	6.88E-02	3.51E+00	3.98E+00	6.39E-01	3.93E+00	4.54E+00	NA	NA	NA	
	003	138.1	-125.3	10/10/2007	14:46	7.78E+02	2.09E+02	1.54E+02	8.37E-01	8.30E-01	8.69E-01	0.00E+00	2.67E+00	2.90E+00	-1.19E+00	2.44E+00	2.50E+00	NA	NA	NA	
	004	138.1	-125.3	1/10/2008	10:05	7.69E+02	1.82E+02	1.74E+02	7.34E-01	4.32E-01	3.52E-01	4.30E-01	3.36E+00	3.88E+00	1.05E-01	3.47E+00	3.91E+00	NA	NA	NA	
	006	138.1	-125.3	8/6/2008	11:41	5.33E+02	1.55E+02	2.28E+02	1.21E+00	4.18E-01	5.01E-01	8.24E-01	2.44E+00	4.27E+00	3.85E-01	2.41E+00	4.20E+00	NA	NA	NA	
	007	138.1	-125.3	10/29/2008	12:25	7.50E+02	1.82E+02	1.66E+02	1.24E+00	5.53E-01	3.58E-01	1.40E+00	6.06E+00	7.05E+00	2.04E+00	8.28E+00	8.60E+00	NA	NA	NA	
	008	138.1	-125.3	1/23/2009	12:50	6.26E+02	2.43E+02	2.04E+02	2.46E+00	8.27E-01	6.23E-01	-4.23E-01	2.40E+00	2.67E+00	5.99E-01	2.24E+00	2.64E+00	NA	NA	NA	
MW-62-182	001	182.1	-169.3	5/10/2007	10:43	5.41E+02	2.09E+02	1.76E+02	1.22E-01	7.18E-01	8.90E-01	3.74E-02	3.50E+00	3.33E+00	-2.40E-01	3.23E+00	3.53E+00	-1.76E+00	1.24E+01	1.50E+01	MW-62-182
	002	182.1	-169.3	7/26/2007	16:20	4.17E+02	2.06E+02	1.82E+02	-9.56E-02	2.73E-01	3.26E-01	-1.16E+00	3.10E+00	3.25E+00	6.21E-01	2.70E+00	3.15E+00	NA	NA	NA	
	003	182.1	-169.3	10/10/2007	14:42	4.94E+02	1.83E+02	1.54E+02	-1.48E-01	4.40E-01	5.99E-01	6.04E-01	1.91E+00	1.91E+00	5.45E-01	1.92E+00	2.23E+00	NA	NA	NA	
	004	182.1	-169.3	1/10/2008	11:15	4.70E+02	1.68E+02	1.71E+02	8.15E-02	5.13E-01	6.33E-01	-1.17E-01	2.96E+00	2.99E+00	9.22E-01	1.31E+00	2.33E+00	NA	NA	NA	
	006	182.1	-169.3	8/6/2008	13:54	3.99E+02	1.52E+02	2.34E+02	5.30E-02	3.33E-01	6.16E-01	8.48E-01	2.19E+00	3.85E+00	-2.67E-01	2.40E+00	3.97E+00	NA	NA	NA	
	007	182.1	-169.3	10/29/2008	15:52	4.98E+02	1.70E+02	1.66E+02	4.40E-02	7.13E-01	9.16E-01	1.60E+00	6.21E+00	6.92E+00	2.99E-01	5.82E+00	6.54E+00	NA	NA	NA	
	008	182.1	-169.3	1/23/2009	13:49	4.98E+02	2.28E+02	2.03E+02	-1.85E-01	4.56E-01	6.98E-01	-1.91E+00	2.55E+00	2.68E+00	-1.03E+00	2.43E+00	2.55E+00	NA	NA	NA	
MW-63-18	001	14.9	0.7	5/18/2007	10:35	2.30E+02	1.59E+02	1.57E+02	4.75E-02	5.37E-01	6.95E-01	8.56E-01	2.44E+00	2.67E+00	1.11E+00	2.65E+00	2.74E+00	7.36E+00	1.61E+01	1.82E+01	MW-63-18
	002	14.9	0.7	7/30/2007	13:10	2.00E+02	1.74E+02	1.89E+02	-2.18E-01	3.91E-01	4.68E-01	1.98E+00	2.65E+00	3.03E+00	-1.31E+00	2.50E+00	2.53E+00	NA	NA	NA	
	003	14.9	0.7	10/11/2007	12:43	1.49E+02	1.56E+02	1.71E+02	3.08E-01	6.23E-01	7.12E-01	1.52E+00	2.63E+00	3.16E+00	-1.41E-01	2.52E+00	2.74E+00	NA	NA	NA	
	004	14.9	0.7	1/9/2008	14:55	1.23E+02	1.56E+02	1.73E+02	-6.34E-02	5.55E-01	7.38E-01	2.55E+00	3.29E+00	3.42E+00	1.97E+00	2.94E+00	3.75E+00	NA	NA	NA	
	005	14.9	0.7	4/23/2008	14:50	2.57E+02	1.53E+02	2.43E+02	2.31E-02	4.68E-01	8.62E-01	8.04E-01	2.35E+00	4.03E+00	7.68E-01	2.06E+00	3.69E+00	8.53E+00	1.43E+01	2.42E+01	
	006	14.9	0.7	7/30/2008	11:13	1.79E+02	1.20E+02	1.91E+02	3.29E+00	5.61E-01	4.68E-01	-1.71E-02	1.75E+00	2.97E+00	-1.16E+00	2.04E+00	2.49E+00	NA	NA	NA	
	007	14.9	0.7	11/5/2008	10:53	3.20E+02	1.59E+02	1.65E+02	3.25E-01	6.20E-01	7.03E-01	1.31E-01	5.91E+00	6.75E+00	-1.52E+00	5.73E+00	6.04E+00	NA	NA	NA	
	008	14.9	0.7	1/29/2009	13:46	1.54E+02	1.85E+02	1.98E+02	-2.22E-01	6.74E-01	8.57E-01	9.78E-02	2.64E+00	3.01E+00	1.02E+00	3.20E+00	3.87E+00	NA	NA	NA	
MW-63-34	001	31.5	-17.3	5/18/2007	13:03	2.28E+02	1.58E+02	1.55E+02	-1.62E-01	5.43E-01	7.77E-01	4.10E-01	2.21E+00	2.51E+00	-3.25E-01	2.65E+00	2.44E+00	1.57E+00	1.54E+01	1.80E+01	MW-63-34
	002	31.5	-17.3	7/30/2007	13:28	2.80E+02	1.77E+02	1.90E+02	-1.64E-01	3.36E-01	4.03E-01	1.73E-01	3.66E+00	3.56E+00	3.98E-01	3.66E+00	4.24E+00	NA	NA	NA	
	003	31.5	-17.3	10/11/2007	12:50	2.31E+02	1.61E+02	1.74E+02	-2.75E-01	4.44E-01	6.73E-01	-6.24E-01	3.60E+00	3.58E+00	3.81E-01	2.65E+00	3.10E+00	NA	NA	NA	
	004	31.5	-17.3	1/9/2008	14:20	3.26E+02	1.65E+02	1.71E+02	1.24E-01	5.57E-01	6.84E-01	1.83E+00	3.63E+00	4.44E+00	3.53E-01	3.90E+00	4.35E+00	NA	NA	NA	
	005	31.5	-17.3	4/23/2008	13:55	4.90E+02	1.68E+02	2.45E+02	3.82E-01	5.68E-01	9.89E-01	1.71E+00	2.05E+00	3.78E+00	-1.77E+00	3.53E+00	4.19E+00	5.77E+00	1.46E+01	2.49E+01	

See Page 17 for Notes

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	006	31.5	-17.3	7/30/2008	11:12	4.41E+02	1.39E+02	1.91E+02	1.15E+00	4.60E-01	6.45E-01	-1.48E-02	2.26E+00	3.87E+00	-7.91E-01	2.52E+00	3.65E+00	NA	NA	NA	
	007	31.5	-17.3	11/5/2008	11:03	4.14E+02	3.77E+02	3.85E+02	3.15E-01	6.77E-01	7.78E-01	5.73E-01	5.43E+00	6.10E+00	-1.40E-01	5.17E+00	5.67E+00	NA	NA	NA	
	008	31.5	-17.3	1/29/2009	12:22	4.20E+02	2.22E+02	1.96E+02	2.20E-01	6.87E-01	8.13E-01	1.41E+00	2.91E+00	3.45E+00	-2.64E-01	2.96E+00	3.23E+00	NA	NA	NA	
MW-63-50	001	49.5	-37.2	5/15/2007	11:48	3.26E+02	1.83E+02	1.73E+02	-9.70E-02	6.15E-01	8.32E-01	-1.33E-01	5.28E+00	5.01E+00	6.64E-01	4.23E+00	4.81E+00	-2.41E+00	1.24E+01	1.51E+01	MW-63-50
	002	49.5	-37.2	7/25/2007	14:00	2.25E+02	1.80E+02	1.95E+02	1.29E-01	6.03E-01	6.84E-01	2.08E+00	3.18E+00	3.90E+00	-1.58E-01	3.19E+00	3.54E+00	NA	NA	NA	
	003	49.5	-37.2	10/11/2007	11:10	2.89E+02	1.62E+02	1.73E+02	-3.41E-01	5.10E-01	7.67E-01	6.21E-01	2.98E+00	3.39E+00	1.56E+00	3.17E+00	3.86E+00	NA	NA	NA	
	004	49.5	-37.2	1/9/2008	12:32	3.56E+02	1.67E+02	1.72E+02	4.48E-01	7.41E-01	8.26E-01	3.37E-01	2.66E+00	3.02E+00	-1.42E+00	3.14E+00	3.20E+00	NA	NA	NA	
	005	49.5	-37.2	4/23/2008	13:04	2.70E+02	1.63E+02	2.65E+02	4.27E-01	5.45E-01	9.26E-01	-1.10E+00	1.85E+00	2.93E+00	9.01E-01	1.75E+00	3.27E+00	2.43E+00	1.40E+01	2.41E+01	
	006	49.5	-37.2	7/30/2008	10:29	3.35E+02	1.32E+02	1.91E+02	6.10E-01	4.97E-01	8.02E-01	-1.77E+00	1.83E+00	2.66E+00	-1.22E+00	1.91E+00	2.80E+00	NA	NA	NA	
	007	49.5	-37.2	11/5/2008	9:39	3.17E+02	1.94E+02	1.99E+02	5.67E-01	6.58E-01	6.79E-01	1.26E+00	6.36E+00	7.04E+00	-7.21E-01	6.52E+00	7.08E+00	NA	NA	NA	
	008	49.5	-37.2	1/29/2009	14:06	2.98E+02	2.04E+02	1.96E+02	5.67E-01	8.00E-01	8.76E-01	8.89E-02	3.09E+00	3.51E+00	1.37E+00	3.41E+00	4.19E+00	NA	NA	NA	
MW-63-93	001	93	-80.7	10/2/2006	13:10	5.16E+02	1.95E+02	5.70E+01	7.81E-02	6.73E-01	7.32E-01	5.46E-01	1.43E+01	1.59E+01	-4.42E+00	1.67E+01	2.03E+01	-5.31E+00	1.23E+01	1.54E+01	MW-63-93
	002	93	-80.7	5/15/2007	12:45	2.81E+02	1.80E+02	1.75E+02	8.20E-02	7.29E-01	9.24E-01	1.87E-01	4.80E+00	4.60E+00	9.57E-01	4.54E+00	4.51E+00	NA	NA	NA	
	003	93	-80.7	7/25/2007	14:34	2.37E+02	1.82E+02	1.97E+02	-4.43E-01	4.41E-01	5.29E-01	1.24E+00	3.31E+00	3.90E+00	9.28E-03	3.75E+00	4.16E+00	NA	NA	NA	
	004	93	-80.7	10/11/2007	11:17	1.15E+02	1.55E+02	1.72E+02	8.19E-01	8.90E-01	9.47E-01	-6.98E-01	2.97E+00	3.16E+00	-1.77E+00	3.33E+00	3.23E+00	NA	NA	NA	
	005	93	-80.7	1/9/2008	12:46	2.15E+02	1.59E+02	1.71E+02	1.86E-01	7.08E-01	8.45E-01	7.74E-01	3.06E+00	3.56E+00	1.05E-01	3.20E+00	3.58E+00	NA	NA	NA	
	005	93	-80.7	4/23/2008	11:23	3.02E+02	1.65E+02	2.65E+02	2.93E-01	5.46E-01	9.39E-01	3.49E-01	2.27E+00	3.88E+00	7.04E-01	2.41E+00	4.14E+00	-3.72E+00	1.41E+01	2.46E+01	
	007	93	-80.7	7/29/2008	14:17	2.38E+02	1.25E+02	1.92E+02	2.28E-03	2.21E-01	3.86E-01	-4.02E-01	2.01E+00	3.36E+00	-3.19E-01	1.96E+00	3.23E+00	NA	NA	NA	
	008	93	-80.7	11/5/2008	10:14	3.90E+02	3.75E+02	3.86E+02	-9.77E-02	1.94E-01	2.36E-01	1.53E+00	5.10E+00	5.92E+00	2.80E+00	6.24E+00	7.60E+00	NA	NA	NA	
	009	93	-80.7	1/29/2009	14:20	3.40E+02	2.09E+02	1.93E+02	1.18E-01	6.33E-01	7.75E-01	-9.44E-01	3.17E+00	3.42E+00	-8.17E-01	3.63E+00	3.88E+00	NA	NA	NA	
MW-63-112	001	111.5	-99.2	5/15/2007	13:10	4.24E+02	1.95E+02	1.75E+02	-5.27E-02	7.50E-01	9.42E-01	2.58E+00	3.90E+00	3.59E+00	9.59E-01	3.72E+00	4.19E+00	-5.14E+00	1.34E+01	1.55E+01	MW-63-112
	002	111.5	-99.2	7/25/2007	14:52	2.69E+02	1.83E+02	1.97E+02	6.32E-02	3.46E-01	3.99E-01	6.92E-01	4.14E+00	4.19E+00	-6.35E-01	3.94E+00	4.34E+00	NA	NA	NA	
	003	111.5	-99.2	10/11/2007	13:45	2.78E+02	1.62E+02	1.72E+02	-7.94E-02	6.73E-01	8.71E-01	-3.04E+00	5.49E+00	4.52E+00	7.65E-01	3.50E+00	4.15E+00	NA	NA	NA	
	004	111.5	-99.2	1/9/2008	10:20	4.69E+02	1.73E+02	1.72E+02	2.19E-01	5.07E-01	5.92E-01	3.90E-01	3.30E+00	3.34E+00	2.87E-01	3.56E+00	3.75E+00	NA	NA	NA	
	005	111.5	-99.2	4/23/2008	11:08	3.72E+02	1.68E+02	2.65E+02	-3.90E-02	3.96E-01	7.94E-01	4.77E-01	2.30E+00	3.89E+00	1.75E+00	2.78E+00	4.52E+00	-5.00E-01	1.43E+01	2.48E+01	
	006	111.5	-99.2	7/29/2008	14:20	2.07E+02	1.01E+02	1.63E+02	7.08E-01	5.39E-01	8.66E-01	6.61E-01	2.23E+00	3.89E+00	1.07E+00	2.46E+00	4.41E+00	NA	NA	NA	
	007	111.5	-99.2	11/4/2008	12:41	2.75E+02	1.92E+02	2.01E+02	4.72E-01	5.88E-01	6.17E-01	1.89E-01	5.68E+00	6.43E+00	-2.75E+00	8.34E+00	7.58E+00	NA	NA	NA	
	008	111.5	-99.2	1/30/2009	14:39	4.37E+02	2.21E+02	1.97E+02	2.43E-02	7.80E-01	9.24E-01	-1.10E+00	2.81E+00	2.86E+00	1.77E+00	3.41E+00	4.13E+00	NA	NA	NA	
MW-63-121	001	121	-108.7	5/15/2007	13:42	3.11E+02	1.83E+02	1.75E+02	3.00E-01	7.97E-01	9.37E-01	6.30E-01	4.25E+00	4.20E+00	-1.19E+00	3.65E+00	3.87E+00	2.29E+00	1.52E+01	1.77E+01	MW-63-121
	002	121	-108.7	7/25/2007	11:50	2.96E+02	1.82E+02	1.94E+02	3.19E-01	5.31E-01	5.93E-01	-1.31E+00	3.29E+00	3.46E+00	1.70E-01	3.46E+00	3.87E+00	NA	NA	NA	
	003	121	-108.7	10/11/2007	13:51	4.62E+02	1.70E+02	1.74E+02	2.39E-01	6.25E-01	7.37E-01	2.48E+00	4.51E+00	4.94E+00	1.54E+00	4.00E+00	4.54E+00	NA	NA	NA	
	004	121	-108.7	1/9/2008	10:42	5.40E+02	1.74E+02	1.71E+02	2.06E-02	4.70E-01	6.09E-01	2.54E+00	3.38E+00	4.15E+00	1.09E+00	3.41E+00	4.02E+00	NA	NA	NA	
	005	121	-108.7	4/23/2008	11:17	4.54E+02	1.34E+02	1.98E+02	5.36E-01	4.94E-01	8.04E-01	-3.56E-01	9.40E-01	1.55E+00	-1.33E+00	2.71E+00	1.81E+00	-3.22E+00	1.41E+01	2.46E+01	
	006	121	-108.7	7/29/2008	14:30	3.44E+02	1.04E+02	1.61E+02	7.60E-01	3.83E-01	5.73E-01	2.86E-01	2.08E+00	3.57E+00	1.23E+00	2.30E+00	4.11E+00	NA	NA	NA	
	007	121	-108.7	11/4/2008	12:43	4.95E+02	2.06E+02	1.98E+02	3.81E-01	7.52E-01	8.55E-01	-7.97E-01	5.42E+00	5.97E+00	1.20E+00	6.38E+00	7.41E+00	NA	NA	NA	
	008	121	-108.7	1/30/2009	14:41	6.23E+02	2.42E+02	1.97E+02	7.30E-01	5.09E-01	4.47E-01	1.91E+00	3.18E+00	3.92E+00	9.14E-01	2.84E+00	3.45E+00	NA	NA	NA	
MW-63-163	001	162.5	-150.2	5/15/2007	11:38	5.78E+02	2.10E+02	1.73E+02	-6.43E-02	6.50E-01	8.74E-01	-8.04E-01	2.84E+00	2.59E+00	9.51E-01	2.25E+00	2.64E+00	-9.58E-01	1.44E+01	1.73E+01	MW-63-163
	002	162.5	-150.2	7/25/2007	12:13	4.79E+02	1.91E+02	1.96E+02	-7.20E-01	3.46E-01	6.26E-01	-3.18E+00	5.16E+00	4.39E+00	-4.54E-01	3.75E+00	3.99E+00	NA	NA	NA	
	003	162.5	-150.2	10/11/2007	14:18	3.49E+02	1.65E+02	1.73E+02	7.93E-03	7.98E-01	9.60E-01	-4.46E-01	3.00E+00	3.28E+00	-1.91E-02	2.94E+00	3.30E+00	NA	NA	NA	
	004	162.5	-150.2	1/9/2008	10:51	5.68E+02	1.77E+02	1.72E+02	3.19E-03	5.55E-01	7.17E-01	-4.52E-01	3.50E+00	3.89E+00	2.23E+00	6.11E+00	4.38E+00	NA	NA	NA	
	005	162.5	-150.2	4/23/2008	11:23	4.44E+02	1.70E+02	2.65E+02	1.82E-01	4.33E-01	7.87E-01	8.04E-01	1.06E+00	1.84E+00	6.60E-01	1.13E+00	1.94E+00	5.30E+00	1.52E+01	2.60E+01	
	006	162.5	-150.2	7/29/2008	14:56	4.48E+02	1.07E+02	1.63E+02	-8.79E-02	2.50E-01	4.37E-01	-2.09E+00	2.34E+00	3.61E+00	9.03E-01	2.59E+00	4.48E+00	NA	NA	NA	
	007	162.5	-150.2	11/4/2008	12:45	6.85E+02	1.86E+02	1.76E+02	-1.44E-01	5.53E-01	7.46E-01	1.77E-01	5.37E+00	6.12E+00	7.78E-01	6.21E+00	7.23E+00	NA	NA	NA	
	008	162.5	-150.2	1/29/2009	11:57	5.81E+02	2.40E+02	1.95E+02	2.86E-01	5.64E-01	6.42E-01	5.82E+00	7.23E+00	3.42E+00	-1.73E-01	2.81E+00	3.03E+00	NA	NA	NA	
MW-63-174	001	174	-161.7	5/15/2007	11:54	5.93E+02	2.12E+02	1.73E+02	2.64E-01	7.62E-01	9.04E-01	-6.91E-01	2.52E+00	2.70E+00	8.16E-03	2.49E+00	2.76E+00	1.30E+00	1.28E+01	1.51E+01	MW-63-174
	002	174	-161.7	7/25/2007	12:00	5.28E+02	1.94E+02	1.97E+02	-2.78E-01	4.41E-01	6.59E-01	6.28E-01	3.98E+00	4.55E+00	-3.03E-01	3.45E+00	3.80E+00	NA	NA	NA	
	003	174	-161.7	10/11/2007	14:22	3.70E+02	1.65E+02	1.72E+02	-2.85E-01	7.14E-01	9.39E-01	1.94E+00	2.90E+00	2.70E+00	-8.59E-01	2.56E+00	2.71E+00	NA	NA	NA	
	004	174	-161.7	1/9/2008	10:45	6.23E+02	1.79E+02	1.72E+02	6.16E-01	6.95E-01	7.24E-01	-1.24E+00	3.14E+00	3.33E+00	1.48E+00	3.03E+00	3.77E+00	NA	NA	NA	
	005	174	-161.7	4/23/2008	11:21	4.89E+02	1.72E+02	2.65E+02	-6.82E-02	3.65E-01	7.48E-01	-5.74E-01	2.01E+00	3.30E+00	3.66E-01	2.43E+00	4.19E+00	-2.14E+00	1.44E+01	2.50E+01	
	006	174	-161.7	7/29/2008	14:40	4.49E+02	1.40E+02	1.92E+02	6.56E-02	2.76E-01	4.80E-01	-3.76E-01	2.23E+00	3.71E+00	-1.72E+00	2.65E+00	3.79E+00	NA	NA	NA	
	007	174	-161.7	11/4/2008	12:44	4.77E+02	2.04E+02	1.99E+02	-2.76E-01	5.52E-01	7.83E-01	-2.68E+00	4.83E+00	4.74E+00	1.18E+00	5.45E+00	6.30E+00	NA	NA	NA	
	008	174	-161.7	1/29/2009	11:55	4.92E+02	2.28E+02	1.97E+02	4.27E-01	5.96E-01	6.57E-01	-4.53E-01	3.81E+00	3.67E+00	-1.34E+00	3.29E+00	3.32E+00	NA	NA	NA	
MW-65-48	001	43.3	26.356	1/4/2007	12:00	2.08E+02	1.83E+02	1.80E+02	0.00E+00	7.80E-01	8.60E-01	1.60E+00	3.60E+00	3.90E+00	-5.00E-01	3.00E+00	3.70E+00	-2.20E+00	6.30E+00	7.30E+00	MW-65-48
MW-65-80	001	71.4	-1.659	9/8/2006	9:40	3.29E+01	1.62E+02	1.74E+02	4.72E-01	9.80E-01	1.04E+00	-5.15E-01	1.99E+00	2.18E+00	-2.34E-01	1.81E+00	1.98E+00	NA	NA	NA	MW-65-80
	002	71.4	-1.659	1/4/2007	12:35	1.83E+02	1.80E+02	1.80E+02	1.60E-01	7.80E-01	8.70E-01	-2.50E-01	2.22E+00	2.50E+00	-1.13E+00	2.31E+00	2.80E+00	-1.90E+00	6.60E+00	7.40E+00	
MW-66-21	001	14.1	0	7/30/2007	13:45	3.57E+03	2.91E+02	1.96E+02	1.79E+00	7.08E-01	2.08E+03	1.77E-01	3.07E+00	3.51E+00	2.21E+00	3.27E+00	4.20E+00	NA	NA	NA	MW-66-21
	002	14.1	0	10/15/2007	10:45	1.04E+03	2.24E+02	1.95E+02	2.42E+00	7.97E-01	5.30E-01	-8.32E-01	3.03E+00	2.74E+00	1.01E-01	2.79E+00	3.18E+00	1.48E+01	2.06E+01	2.28E+01	
	003	14.1	0	1/14/2008	11:33	8.18E+02	4.62E+02	4.16E+02	1.09E+00	8.96E-01	8.19E-01	1.68E+00	3.14E+00	3.77E+00	2.35E+00	3.86E+00	4.26E+00	-5.07E+00	2.12E+01	2.55E+01	
	004	14.1	0	4/21/2008	14:10	9.53E+02	1.51E+02	1.93E+02	1.01E+00	2.05E-01	2.82E-01	6.53E-01	2.36E+00	4.07E+00	1.86E-02	2.26E+00	3.74E+00	-7.28E+00	8.88E+00	1.55E+01	
	005	14.1	0	7/29/2008	11:48	7.83E+02	1.02E+02	1.30E+02	9.07E-01	3.56E-01	4.39E-01	-1.01E+00	1.88E+00	2.92E+00	1.71E+00	2.17E+00	3.99E+00	-6.26E+00	1.66E+01	2.99E+01	
	006	14.1	0	11/4/2008	10:30	5.34E+02	2.07E+02	1.64E+02	1.03E+00	6.96E-01	6.69E-01	1.44E+00	4.67E+00	5.42E+00	2.98E+00	5.17E+00	6.47E+00	-5.68E+00	1.79E+01	2.09E+01	
	007	14.1	0	1/27/2009	13:52	4.61E+02	1.74E+02	1.75E+02	2.91E-01	7.50E-01	8.72E-01	8.99E+00	5.45E+00	3.11E+00	-1.87E+00	2.90E+00	2.71E+00	1.29E+01	1.74E+01	1.93E+01	
MW-66-36	001	33.6	-19.5	7/30/2007	12:49	9.10E+03	4.13E+02	1.94E+02	6.20E+00	1.19E+00	6.05E-01	-9.84E-01	2.67E+00	2.76E+00	-5.59E-01	2.90E+00	3.06E+00	NA	NA	NA	MW-66-36
	002	33.6	-19.5	10/15/2007	10:16	8.95E+03	4.61E+02	1.92E+02	1.12E+01	1.61E+00	5.63E-01	0.00E+00	8.34E+00	4.32E+00	-2.92E-01	4.34E+00	4.68E+00	1.17E+01	1.88E+01	2.09E+01	
	003	33.6	-19.5	1/14/2008	11:40	7.26E+03	1.01E+03	4.16E+02	1.51E+01	2.40E+00	8.34E-01	2.34E+00	3.38E+00	4.14E+00	-1.08E+00	3.78E+00	3.39E+00	7.19E+00	2.36E+01	2.71E+01	
	004	33.6	-19.5	4/21/2008	13:25	6.09E+03	2.89E+02	1.97E+02	1.32E+01	5.27E-01	3.65E-01	-2.89E-01	2.09E+00	3.46E+00	-2.09E+00	3.54E+00	4.13E+00	-3.35E-01	8.98E+00	1.54E+01	
	005	33.6	-19.5	7/29/2008	12:05	5.01E+03	1.91E+02	1.30E+02	1.20E+01	1.06E+00	6.20E-01	2.07E-01	1.66E+00	2.82E+00	-1.05E+00	1.93E+00	3.00E+00	-1.00E+00	1.69E+01	2.98E+01	
	006	33.6	-19.5	11/4/2008	10:40	5.44E+03	5.34E+02	1.67E+02	1.38E+01	1.71E+00	5.23E-01	6.91E-01	4.32E+00	4.90E+00	1.78E+00	5.24E+00	6.23E+00	9.57E-01	1.64E+01	1.88E+01	
	007	33.6	-19.5	1/27/2009	13:07	3.65E+03	7.62E+02	4.41E+02	1.22E+01	1.56E+00	6.15E-01	-1.04E+00	2.88E+00	3.06E+00	6.35E-02	3.27E+00	3.72E+00	1.45E+01	1.70E+01	1.87E+01	
MW-67-39	001	38.3	-25.8	8/31/2007	12:05	4.86E+03	4.34E+02	1.92E+02	1.86E+01	1.86E+00	4.73E-01	-1.93E-01	2.02E+00	2.24E+00	-9.45E-01	2.00E+00	2.09E+00	NA	NA	NA	MW-67-39
	002	38.3	-25.8	10/1/2007	11:30	5.07E+03	3.75E+02	1.95E+02	2.71E+01	2.44E+00	6.21E-01	1.02E+01	4.11E+00	1.98E+00	3.69E-01	2.07E+00	2.39E+00	2.51E+00	1.68E+01	1.93E+01	

See Page 17 for Notes

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	004	38.3	-25.8	2/25/2008	15:38	4.17E+03	8.28E+02	5.29E+02	2.05E+01	1.77E+00	6.97E-01	-1.15E+00	3.44E+00	3.73E+00	1.99E+00	4.39E+00	3.98E+00	-5.41E-01	2.26E+01	2.63E+01	
	005	38.3	-25.8	7/28/2008	14:07	3.87E+03	1.72E+02	1.30E+02	1.37E+01	1.11E+00	3.97E-01	-1.03E+00	2.60E+00	3.42E+00	4.47E-01	2.15E+00	3.68E+00	6.34E+00	1.67E+01	2.88E+01	
	007	38.3	-25.8	12/18/2008	11:30	3.18E+03	2.66E+02	1.71E+02	1.62E+01	1.69E+00	1.00E+00	1.18E+00	4.61E+00	5.40E+00	7.33E-01	5.04E+00	5.81E+00	8.37E-01	1.68E+01	1.94E+01	
	008	38.3	-25.8	1/27/2009	16:15	3.67E+03	2.91E+02	1.92E+02	1.42E+01	1.71E+00	7.62E-01	-8.03E-01	2.04E+00	2.15E+00	-1.11E-01	2.06E+00	2.25E+00	1.12E+01	1.68E+01	1.87E+01	
MW-67-105	001	104.8	-92.3	8/31/2007	12:35	1.86E+03	5.16E+02	3.34E+02	1.11E+00	6.12E-01	5.26E-01	2.26E-01	2.00E+00	2.00E+00	-3.08E-01	1.68E+00	1.86E+00	NA	NA	NA	MW-67-105
	002	104.8	-92.3	10/1/2007	11:40	2.64E+03	2.96E+02	1.95E+02	4.12E-01	8.28E-01	9.46E-01	0.00E+00	6.11E+00	3.77E+00	-4.57E-01	3.63E+00	3.96E+00	1.05E+01	1.58E+01	1.76E+01	
	003	104.8	-92.3	1/11/2008	15:15	2.43E+03	6.42E+02	4.15E+02	7.58E-01	9.98E-01	1.07E+00	9.32E+00	5.13E+00	2.83E+00	7.44E-01	3.60E+00	3.70E+00	1.81E+01	2.42E+01	2.67E+01	
	004	104.8	-92.3	2/25/2008	13:44	2.38E+03	6.89E+02	5.30E+02	1.13E+00	7.89E-01	8.12E-01	-1.27E+00	3.25E+00	3.38E+00	-4.79E-02	2.97E+00	3.25E+00	1.24E+01	1.74E+01	1.93E+01	
	005	104.8	-92.3	7/28/2008	14:25	2.16E+03	1.40E+02	1.37E+02	9.63E-01	3.54E-01	4.16E-01	4.17E-01	1.59E+00	2.78E+00	7.65E-01	1.51E+00	2.78E+00	7.25E+00	1.65E+01	2.85E+01	
	006	104.8	-92.3	11/3/2008	14:21	2.93E+03	4.02E+02	1.66E+02	1.11E+00	5.60E-01	4.64E-01	-2.48E-01	6.36E+00	7.11E+00	7.75E-02	6.87E+00	7.59E+00	6.32E+00	1.68E+01	1.90E+01	
	007	104.8	-92.3	1/27/2009	16:45	1.96E+03	2.42E+02	1.92E+02	4.08E-01	8.30E-01	9.49E-01	-1.13E+00	3.32E+00	2.71E+00	-3.40E-02	2.39E+00	2.66E+00	1.21E+01	1.64E+01	1.81E+01	
MW-67-173	001	172.3	-159.8	8/31/2007	13:04	1.05E+03	4.28E+02	3.37E+02	3.73E-01	3.77E-01	4.12E-01	-1.46E+00	3.56E+00	3.68E+00	1.19E-02	3.75E+00	4.15E+00	NA	NA	NA	MW-67-173
	002	172.3	-159.8	10/1/2007	12:30	1.01E+03	2.25E+02	1.95E+02	1.48E-01	8.62E-01	1.07E+00	-1.34E+00	3.79E+00	4.01E+00	2.82E+00	3.25E+00	3.77E+00	4.12E+00	1.71E+01	1.96E+01	
	004	172.3	-159.8	2/25/2008	14:00	9.51E+02	5.51E+02	5.30E+02	-4.12E-01	6.06E-01	7.76E-01	6.65E-01	2.82E+00	3.23E+00	-3.63E-01	2.54E+00	2.70E+00	-5.95E+00	2.37E+01	2.82E+01	
	005	172.3	-159.8	7/28/2008	14:42	9.12E+02	1.09E+02	1.36E+02	1.05E-01	2.66E-01	4.85E-01	-1.22E+00	2.06E+00	3.19E+00	-3.63E-01	2.14E+00	3.49E+00	5.88E+00	1.64E+01	2.84E+01	
	006	172.3	-159.8	11/3/2008	14:37	9.93E+02	2.58E+02	1.66E+02	-3.48E-02	2.59E-01	3.02E-01	-1.41E+00	6.69E+00	6.32E+00	1.49E+00	6.66E+00	7.65E+00	-1.40E+00	1.69E+01	1.97E+01	
	007	172.3	-159.8	1/27/2009	16:33	7.57E+02	2.00E+02	1.92E+02	4.35E-01	5.94E-01	6.32E-01	1.34E+01	4.85E+00	2.53E+00	-1.24E+00	2.58E+00	2.73E+00	1.48E+01	1.79E+01	1.96E+01	
MW-67-219	001	218.8	-206.3	8/31/2007	13:43	1.25E+03	4.46E+02	3.30E+02	3.27E-02	3.00E-01	3.47E-01	-1.58E-01	3.04E+00	3.32E+00	9.02E-01	3.09E+00	3.68E+00	NA	NA	NA	MW-67-219
	002	218.8	-206.3	10/1/2007	12:53	9.46E+02	2.22E+02	1.95E+02	-2.27E-01	7.50E-01	1.03E+00	1.48E-01	2.60E+00	2.90E+00	1.38E-01	2.37E+00	2.65E+00	1.21E+01	2.64E+01	2.99E+01	
	004	218.8	-206.3	2/25/2008	11:43	1.23E+03	5.81E+02	5.31E+02	-7.61E-02	4.93E-01	6.12E-01	-1.33E+00	3.03E+00	3.18E+00	1.08E+00	3.15E+00	3.78E+00	1.23E+01	1.81E+01	2.03E+01	
	005	218.8	-206.3	7/28/2008	11:00	1.17E+03	1.16E+02	1.36E+02	-7.49E-02	2.34E-01	4.85E-01	-2.91E-01	1.98E+00	3.33E+00	-2.64E-01	1.92E+00	3.18E+00	5.99E+00	1.68E+01	2.90E+01	
	006	218.8	-206.3	11/3/2008	11:31	1.37E+03	2.93E+02	1.68E+02	8.78E-02	1.69E-01	1.91E-01	1.32E+00	4.93E+00	5.86E+00	4.00E+00	6.30E+00	8.05E+00	2.30E+00	1.65E+01	1.88E+01	
	007	218.8	-206.3	1/27/2009	12:34	9.68E+02	2.81E+02	2.50E+02	-7.56E-02	5.30E-01	7.13E-01	-3.58E-01	1.89E+00	2.10E+00	7.86E-02	1.83E+00	2.09E+00	1.14E+01	2.16E+01	2.43E+01	
MW-67-276	001	275.3	-262.8	8/31/2007	12:20	6.79E+02	3.83E+02	3.41E+02	-3.34E-01	3.57E-01	4.29E-01	1.36E+00	3.82E+00	4.02E+00	-9.09E-01	3.75E+00	4.00E+00	NA	NA	NA	MW-67-276
	002	275.3	-262.8	10/1/2007	13:04	1.11E+03	2.30E+02	1.96E+02	3.82E-02	8.36E-01	9.91E-01	-3.32E+00	3.63E+00	3.34E+00	-3.17E-01	3.51E+00	3.31E+00	5.04E-01	1.59E+01	1.84E+01	
	004	275.3	-262.8	2/25/2008	11:48	1.07E+03	5.64E+02	5.29E+02	4.43E-01	7.06E-01	7.88E-01	2.00E+00	3.45E+00	4.21E+00	1.79E+00	4.11E+00	4.33E+00	1.08E+01	1.89E+01	2.11E+01	
	005	275.3	-262.8	7/28/2008	11:09	1.16E+03	1.16E+02	1.36E+02	-5.05E-02	2.76E-01	5.47E-01	-8.94E-01	1.98E+00	3.18E+00	5.92E-01	1.97E+00	3.45E+00	7.55E+00	1.62E+01	2.77E+01	
	006	275.3	-262.8	11/3/2008	11:39	1.18E+03	2.75E+02	1.66E+02	-5.08E-02	1.81E-01	2.16E-01	3.75E-01	5.63E+00	6.29E+00	-7.43E-01	6.00E+00	6.50E+00	7.29E+00	1.73E+01	1.95E+01	
	007	275.3	-262.8	1/27/2009	13:01	1.10E+03	5.12E+02	4.39E+02	3.32E-01	5.93E-01	6.66E-01	2.35E-01	3.24E+00	3.70E+00	-1.19E+00	3.74E+00	3.96E+00	1.15E+01	1.68E+01	1.87E+01	
MW-67-323	001	322.3	-309.8	8/31/2007	13:20	3.13E+02	1.55E+02	1.57E+02	-2.41E-01	3.06E-01	3.74E-01	1.14E+00	3.71E+00	4.33E+00	1.29E-01	3.76E+00	4.32E+00	NA	NA	NA	MW-67-323
	002	322.3	-309.8	10/1/2007	14:08	1.29E+03	2.40E+02	1.96E+02	5.67E-01	8.58E-01	9.37E-01	-5.77E-01	3.04E+00	3.24E+00	-6.19E-01	3.35E+00	3.58E+00	5.25E-01	1.65E+01	1.92E+01	
	004	322.3	-309.8	2/25/2008	11:59	3.72E+02	2.75E+02	2.87E+02	3.61E-01	7.60E-01	8.62E-01	-2.08E-01	2.97E+00	3.32E+00	1.29E+00	3.50E+00	4.18E+00	6.85E+00	1.88E+01	2.13E+01	
	005	322.3	-309.8	7/28/2008	11:25	3.38E+02	9.08E+01	1.36E+02	-2.38E-01	3.66E-01	7.29E-01	8.29E-01	2.30E+00	3.99E+00	2.24E-01	2.04E+00	3.46E+00	-5.98E+00	1.59E+01	2.86E+01	
	006	322.3	-309.8	11/3/2008	11:44	6.84E+02	2.24E+02	1.64E+02	4.20E-02	3.40E-01	4.37E-01	-3.56E+00	5.21E+00	5.18E+00	4.29E-01	5.12E+00	5.87E+00	-7.38E+00	1.59E+01	1.87E+01	
	007	322.3	-309.8	1/27/2009	13:50	3.65E+02	1.70E+02	1.76E+02	-1.15E-01	4.05E-01	5.85E-01	4.74E-01	3.86E+00	4.42E+00	3.47E-01	3.38E+00	3.86E+00	9.84E+00	1.32E+01	1.47E+01	
MW-67-340	001	339.8	-327.3	8/31/2007	12:54	3.69E+02	1.61E+02	1.60E+02	1.69E-01	2.71E-01	3.04E-01	6.52E-01	4.61E+00	5.13E+00	4.53E+00	5.43E+00	5.20E+00	NA	NA	NA	MW-67-340
	002	339.8	-327.3	10/1/2007	14:00	3.90E+02	1.92E+02	1.96E+02	1.42E-01	3.71E-01	4.20E-01	7.29E-01	3.46E+00	3.96E+00	-1.22E+00	3.33E+00	3.50E+00	3.89E+00	1.54E+01	1.76E+01	
	004	339.8	-327.3	2/25/2008	12:00	4.78E+02	2.82E+02	2.86E+02	-2.17E-01	5.53E-01	6.94E-01	-1.58E+00	3.99E+00	3.94E+00	-7.62E-01	3.19E+00	3.43E+00	5.72E+00	1.83E+01	2.09E+01	
	005	339.8	-327.3	7/28/2008	11:18	5.11E+02	9.36E+01	1.30E+02	-3.39E-01	2.28E-01	5.49E-01	3.13E-01	2.21E+00	3.81E+00	9.03E-01	2.25E+00	3.68E+00	-6.94E+00	1.57E+01	2.78E+01	
	006	339.8	-327.3	11/3/2008	11:54	6.69E+02	2.22E+02	1.63E+02	8.08E-02	4.26E-01	5.43E-01	2.23E+00	6.25E+00	7.45E+00	3.65E+00	6.76E+00	8.47E+00	-8.34E+00	1.59E+01	1.88E+01	
	007	339.8	-327.3	1/27/2009	12:44	5.23E+02	4.37E+02	4.39E+02	2.57E-01	5.48E-01	6.31E-01	4.72E-01	3.72E+00	4.19E+00	-4.00E-01	3.41E+00	3.67E+00	7.78E+00	1.68E+01	1.90E+01	
MW-107	004	29.1	111	9/28/2005	12:00	3.09E+02	3.87E+02	4.20E+02	NA	NA	NA	3.86E+00	1.16E+01	8.53E+00	NA	NA	NA	NA	NA	NA	MW-107
	001	29.1	111	12/8/2005	11:15	1.28E+02	4.11E+02	4.54E+02	7.65E+00	1.53E+01	1.33E+01	2.55E+00	7.64E+00	5.59E+00	4.11E+00	1.23E+01	8.97E+00	NA	NA	NA	
	002	29.1	111	4/18/2006	11:15	1.27E+02	4.11E+02	4.51E+02	0.00E+00	3.90E-01	4.40E-01	2.65E+00	7.94E+00	5.62E+00	4.36E+00	1.31E+01	9.21E+00	NA	NA	NA	
	003	29.1	111	6/6/2006	13:30	1.05E+02	1.53E+02	1.56E+02	-2.07E-01	5.43E-01	7.13E-01	1.65E+00	8.31E+00	9.24E+00	-3.66E-01	8.36E+00	9.05E+00	NA	NA	NA	
	005	32.7	110.1	7/23/2007	14:18	8.92E+01	1.52E+02	1.70E+02	1.66E-01	5.19E-01	5.87E-01	8.13E-01	2.73E+00	1.60E+00	1.03E-01	1.41E+00	1.60E+00	NA	NA	NA	
	006	32.7	110.1	4/24/2008	15:41	1.91E+02	8.90E+01	1.44E+02	-6.22E-02	2.21E-01	4.42E-01	-2.03E+00	2.78E+00	4.11E+00	-1.38E+00	2.12E+00	3.07E+00	NA	NA	NA	
	007	32.7	110.1	5/30/2008	15:25	4.62E+01	9.02E+01	1.58E+02	6.62E-02	5.51E-01	9.60E-01	1.22E+00	1.88E+00	3.36E+00	5.48E-01	2.20E+00	3.57E+00	NA	NA	NA	
MW-108	003	8.3	6.2	9/29/2005	12:00	3.32E+02	3.84E+02	4.20E+02	NA	NA	NA	3.23E+00	9.70E+00	7.39E+00	3.21E+00	9.64E+00	7.84E+00	NA	NA	NA	MW-108
	004	8.3	6.2	11/3/2005	12:00	1.97E+02	4.26E+02	4.76E+02	NA	NA	NA	3.41E+00	1.02E+01	7.53E+00	2.65E+00	7.95E+00	6.39E+00	NA	NA	NA	
	002	8.3	6.2	5/13/2006	10:53	2.78E+02	1.82E+02	1.68E+02	6.89E-01	8.26E-01	8.08E-01	3.12E+00	8.86E+00	1.05E+01	-1.45E-01	1.23E+01	1.34E+01	NA	NA	NA	
MW-109	003	8.5	6.1	9/29/2005	12:00	1.54E+02	3.81E+02	4.20E+02	NA	NA	NA	3.74E+00	1.12E+01	8.45E+00	3.19E+00	9.57E+00	7.88E+00	NA	NA	NA	MW-109
	004	8.5	6.1	11/3/2005	12:00	1.01E+02	4.23E+02	4.76E+02	NA	NA	NA	3.59E+00	1.08E+01	7.89E+00	2.59E+00	7.78E+00	6.26E+00	NA	NA	NA	
	002	8.5	6.1	5/13/2006	10:10	3.39E+02	1.89E+02	1.70E+02	2.98E-01	8.24E-01	9.27E-01	2.00E-01	5.68E+00	6.24E+00	-2.50E+00	6.12E+00	6.08E+00	NA	NA	NA	
MW-111	001	14.1	4.8	9/29/2005	10:00	2.15E+05	2.26E+03	4.20E+02	NA	NA	NA	4.48E+00	1.34E+01	1.02E+01	1.81E+00	5.42E+00	5.57E+00	NA	NA	NA	MW-111
	001	14.1	4.8	9/29/2005	10:00	2.05E+05	2.56E+04	6.24E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	002	14.1	4.8	10/14/2005	10:00	6.81E+03	4.73E+03	6.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003	14.1	4.8	10/21/2005	10:00	2.84E+05	3.05E+04	6.41E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004	14.1	4.8	10/28/2005	8:30	2.18E+05	6.54E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	14.1	4.8	11/4/2005	9:00	3.02E+05	9.06E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	006	14.1	4.8	11/22/2005	10:00	1.80E+05	5.40E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	007	14.1	4.8	12/2/2005	10:15	1.25E+05	3.75E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	008	14.1	4.8	12/8/2005	16:50	2.71E+05	8.13E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	009	14.1	4.8	12/15/2005	11:00	2.96E+05	8.88E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	010	14.1	4.8	12/19/2005	9:45	1.92E+05	5.76E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	011	14.1	4.8	12/29/2005	10:00	2.12E+05	6.36E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	012	14.1	4.8	1/6/2006	10:45	1.13E+05	3.39E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	013	14.1	4.8	1/13/2006	10:30	1.99E+05	5.97E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	014	14.1	4.8	1/20/2006	9:30	1.19E+05	3.57E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	015	14.1	4.8	1/27/2006	10:05	5.78E+05	1.73E+02	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	016	14.1	4.8	2/3/2006	12:20	2.95E+05	3.09E+04	6.33E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	017	14.1	4.8	2/7/2006	16:10	2.38E+05	2.78E+04	6.37E+02	1.17E+00	6.03E-01	6.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	018	14.1	4.8	2/16/2006	13:40	2.94E+05	3.09E+04	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	019	14.1	4.8	3/3/2006	9:00	2.36E+05	7.08E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	020	14.1	4.8	4/7/2006	9:50	1.45E+05	4.35E+03	7.00E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	021	14.1	4.8	5/17/2006	14:05	4.31E+04	6.51E+03	9.10E+02	2.49E+00	1.40E+00	1.24E+00	-2.32E-01	1.34E+01	1.51E+01	4.25E+00	1.30E+01	1.49E+01	NA	NA	NA	
	022	14.1	4.8	6/23/2006	8:35	2.62E+05	3.92E+04	2.35E+03	6.23E-01	1.07E+00	1.32E+00	-4.18E+00	1.40E+01	1.46E+01	-1.60E-01	1.38E+01	1.52E+01	NA	NA	NA	
	023	14.1	4.8	9/21/2006	10:25	1.59E+05	2.07E+04	1.42E+03	8.79E-01	1.25E+00	1.33E+00	9.50E-02	1.13E+00	1.26E+00	-6.26E-02	1.15E+00	1.24E+00	NA	NA	NA	
	024	16.5	2.4	6/15/2007	14:17	1.19E+05	3.69E+03	3.52E+02	9.74E-01	6.30E-01	5.76E-01	-7.53E-01	3.27E+00	3.00E+00	1.21E-01	2.79E+00	3.17E+00	6.34E+00	1.26E+01	1.43E+01	
	025	16.5	2.4	8/3/2007	9:53	9.88E+04	2.93E+03	3.68E+02	9.74E-01	6.73E-01	6.27E-01	4.24E-01	2.75E+00	3.15E+00	3.95E-01	2.60E+00	3.02E+00	NA	NA	NA	
	026	16.5	2.4	1/28/2008	11:38	4.77E+04	1.77E+03	2.97E+02	2.56E+00	9.45E-01	6.18E-01	2.60E+00	4.05E+00	3.90E+00	-6.32E-01	2.55E+00	2.63E+00	1.33E+01	1.58E+01	1.73E+01	
	027	16.5	2.4	9/4/2008	14:00	7.39E+04	1.89E+03	5.47E+02	1.02E+00	3.62E-01	4.21E-01	-8.16E-01	2.22E+00	3.61E+01	NA	NA	NA	NA	NA	NA	
	028	16.5	2.4	10/21/2008	14:20	6.64E+04	2.00E+03	2.60E+02	9.08E-01	9.32E-01	9.72E-01	-9.35E-01	3.60E+00	3.79E+00	5.10E-01	4.32E+00	5.03E+00	NA	NA	NA	
U3-4D	007	21.7	-14.7	10/16/2005	12:00	3.70E+02	4.05E+02	4.38E+02	NA	NA	NA	4.72E+00	1.41E+01	1.01E+01	3.72E+00	1.12E+01	8.50E+00	NA	NA	NA	U3-4D
	008	21.7	-14.7	10/21/2005	12:00	3.99E+02	3.90E+02	4.27E+02	NA	NA	NA	3.11E+00	9.34E+00	6.58E+00	2.98E+00	8.95E+00	6.58E+00	NA	NA	NA	
	009	21.7	-14.7	10/28/2005	12:00	4.05E+02	4.29E+02	4.72E+02	NA	NA	NA	3.91E+00	1.17E+01	8.54E+00	4.36E+00	1.31E+01	9.84E+00	NA	NA	NA	
	012	21.7	-14.7	11/18/2005	12:00	1.10E+02	4.35E+02	4.81E+02	NA	NA	NA	3.04E+00	9.13E+00	6.67E+00	2.04E+00	6.11E+00	4.97E+00	NA	NA	NA	
	013	21.7	-14.7	12/2/2005	12:00	2.73E+02	4.23E+02	4.64E+02	NA	NA	NA	2.97E+00	8.92E+00	6.62E+00	2.00E+00	6.01E+00	5.05E+00	NA	NA	NA	
	001	21.7	-14.7	12/15/2005	13:10	3.99E+02	4.32E+02	4.70E+02	NA	NA	NA	2.73E+00	8.20E+00	6.05E+00	2.88E+00	8.64E+00	6.66E+00	NA	NA	NA	
	002	21.7	-14.7	12/30/2005	9:25	4.42E+02	4.35E+02	4.71E+02	NA	NA	NA	3.53E+00	1.06E+01	7.76E+00	3.96E+00	1.19E+01	8.99E+00	NA	NA	NA	
	003	21.7	-14.7	1/12/2006	11:00	5.73E+02	4.38E+02	4.72E+02	NA	NA	NA	3.29E+00	9.86E+00	7.12E+00	3.42E+00	1.03E+01	7.75E+00	NA	NA	NA	
	004	21.7	-14.7	2/15/2006	13:45	2.71E+02	9.39E+02	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	006	21.7	-14.7	4/26/2006	14:20	5.75E+02	2.19E+02	1.87E+02	-1.48E-01	6.11E-01	7.91E-01	-3.01E-01	8.38E+00	9.11E+00	-3.10E+00	8.21E+00	8.71E+00	NA	NA	NA	
	014	21.7	-14.7	6/22/2006	10:20	7.10E+02	2.15E+02	1.68E+02	1.27E-01	5.73E-01	7.39E-01	-2.41E+00	1.15E+01	1.21E+01	-2.08E+00	8.42E+00	8.34E+00	NA	NA	NA	
	015	25.6	-10.8	2/1/2008	12:40	3.75E+02	1.36E+02	1.35E+02	-1.78E-01	7.83E-01	9.77E-01	2.83E-01	2.69E+00	3.10E+00	1.41E+00	3.26E+00	3.97E+00	NA	NA	NA	
	016	25.6	-10.8	4/29/2008	13:27	3.19E+02	1.43E+02	2.22E+02	1.44E-01	2.76E-01	4.94E-01	5.15E-01	1.91E+00	3.36E+00	-1.53E-01	1.73E+00	2.91E+00	NA	NA	NA	
	017	25.6	-10.8	7/28/2008	16:46	4.66E+02	2.50E+02	3.79E+02	-3.57E-01	4.96E-01	9.81E-01	2.89E-01	2.08E+00	3.62E+00	4.78E-01	2.36E+00	3.69E+00	NA	NA	NA	
	018	25.6	-10.8	10/20/2008	14:40	5.68E+02	1.71E+02	1.64E+02	-8.59E-02	8.61E-01	1.11E+00	3.53E-01	4.62E+00	5.17E+00	7.12E-01	4.13E+00	4.79E+00	NA	NA	NA	
	010	25.6	-10.8	11/4/2008	12:00	1.18E+02	4.23E+02	4.76E+02	NA	NA	NA	3.17E+00	9.51E+00	6.90E+00	3.34E+00	1.00E+01	7.54E+00	NA	NA	NA	
	011	25.6	-10.8	11/10/2008	12:00	3.16E+02	4.14E+02	4.61E+02	NA	NA	NA	4.10E+00	1.23E+01	8.95E+00	4.07E+00	1.22E+01	9.41E+00	NA	NA	NA	
	019	25.6	-10.8	2/10/2009	14:15	4.82E+02	2.31E+02	1.97E+02	1.00E-01	5.16E-01	6.41E-01	3.86E-01	2.66E+00	3.00E+00	7.53E-01	3.02E+00	3.39E+00	NA	NA	NA	
U3-T1[6]	007	5.7	2.8	10/7/2005	12:00	1.59E+03	4.20E+02	4.15E+02	NA	NA	NA	2.71E+00	8.14E+00	6.09E+00	2.77E+00	8.30E+00	6.55E+00	NA	NA	NA	U3-T16
	008	5.7	2.8	10/21/2005	12:00	3.09E+02	3.87E+02	4.27E+02	NA	NA	NA	3.92E+00	1.18E+01	8.66E+00	3.87E+00	1.16E+01	9.03E+00	NA	NA	NA	
	009	5.7	2.8	10/28/2005	12:00	3.40E+02	4.29E+02	4.72E+02	NA	NA	NA	3.55E+00	1.06E+01	8.06E+00	5.35E+00	1.61E+01	1.23E+01	NA	NA	NA	
	010	5.7	2.8	11/4/2005	12:00	1.97E+02	4.29E+02	4.76E+02	NA	NA	NA	4.01E+00	1.20E+01	8.86E+00	3.90E+00	1.17E+01	9.13E+00	NA	NA	NA	
	011	5.7	2.8	11/10/2005	12:00	5.63E+02	4.26E+02	4.61E+02	NA	NA	NA	3.11E+00	9.32E+00	6.89E+00	2.97E+00	8.92E+00	6.99E+00	NA	NA	NA	
	012	5.7	2.8	11/18/2005	12:00	0.00E+00	4.29E+02	4.81E+02	NA	NA	NA	3.90E+00	1.17E+01	8.39E+00	3.40E+00	1.02E+01	7.71E+00	NA	NA	NA	
	013	5.7	2.8	12/2/2005	12:00	4.98E+02	4.29E+02	4.64E+02	NA	NA	NA	2.80E+00	8.39E+00	6.23E+00	2.94E+00	8.83E+00	6.86E+00	NA	NA	NA	
	001	5.7	2.8	12/15/2005	13:15	3.40E+02	4.29E+02	4.70E+02	NA	NA	NA	2.53E+00	7.60E+00	5.63E+00	2.89E+00	8.67E+00	6.65E+00	NA	NA	NA	
	002	5.7	2.8	12/30/2005	10:40	5.29E+02	4.38E+02	4.71E+02	NA	NA	NA	4.02E+00	1.21E+01	8.71E+00	4.07E+00	1.22E+01	9.17E+00	NA	NA	NA	
	003	5.7	2.8	1/12/2006	9:50	7.87E+02	4.47E+02	4.72E+02	NA	NA	NA	3.10E+00	9.31E+00	6.88E+00	2.83E+00	8.49E+00	6.70E+00	NA	NA	NA	
	004	5.7	2.8	2/15/2006	13:15	8.35E+02	1.65E+03	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	005	5.7	2.8	3/16/2006	11:50	1.26E+03	2.79E+02	1.85E+02	6.55E-01	8.43E-01	8.29E-01	1.06E+00	5.49E+00	6.18E+00	-1.81E-01	5.63E+00	6.14E+00	NA	NA	NA	
	006	5.7	2.8	5/26/2006	13:30	7.32E+02	2.33E+02	1.89E+02	1.27E+00	1.02E+00	1.01E+00	1.21E+00	8.34E+00	9.42E+00	5.99E+00	8.98E+00	1.15E+01	NA	NA	NA	
	014	5.7	2.8	7/12/2006	12:50	6.84E+02	2.36E+02	1.98E+02	3.36E-01	1.36E+00	1.44E+00	1.15E+00	1.13E+01	1.18E+01	-1.14E+00	1.18E+01	1.26E+01	NA	NA	NA	
	015	5.7	2.8	8/15/2006	11:30	7.66E+02	2.25E+02	1.73E+02	NA	NA	NA	-4.04E+00	6.82E+00	6.33E+00	2.15E+00	6.84E+00	8.29E+00	NA	NA	NA	
	016	5.7	2.8	6/12/2007	12:54	5.06E+02	4.25E+02	4.39E+02	6.25E-01	8.75E-01	9.54E-01	-8.51E-02	2.94E+00	2.22E+00	7.17E-01	2.00E+00	2.33E+00	-1.46E+00	1.40E+01	1.63E+01	
	017	5.7	2.8	8/1/2007	13:20	4.90E+02	3.38E+02	2.73E+02	5.21E-02	5.13E-01	6.47E-01	8.49E-01	3.57E+00	4.15E+00	2.88E-01	3.42E+00	3.92E+00	NA	NA	NA	
	018	5.7	2.8	10/22/2007	16:13	5.30E+02	4.01E+02	4.01E+02	3.41E-01	5.49E-01	6.09E-01	-1.08E+00	3.44E+00	3.64E+00	-1.34E+00	3.52E+00	3.68E+00	NA	NA	NA	
	019	5.7	2.8	1/22/2008	16:11	7.29E+02	3.27E+02	2.96E+02	6.26E-01	7.26E-01	7.69E-01	1.21E+00	3.14E+00	3.76E+00	-1.79E-01	3.56E+00	3.93E+00	8.87E+00	1.85E+01	2.09E+01	
	019	5.7	2.8	1/22/2008	16:11	6.05E+02	3.15E+02	2.97E+02	6.43E-01	7.41E-01	7.79E-01	1.11E+00	2.75E+00	3.21E+00	2.38E-01	2.51E+00	2.75E+00	1.14E+01	1.65E+01	1.84E+01	
	020	5.7	2.8	5/2/2008	15:24	7.09E+02	1.63E+02	2.22E+02	7.24E-01	5.19E-01	8.26E-01	2.85E-01	1.84E+00	3.19E+00	-1.15E+00	1.87E+00	2.82E+00	NA	NA	NA	
	021	5.7	2.8	7/23/2008	11:16	5.56E+02	2.58E+02	3.79E+02	6.40E-01	5.19E-01	8.37E-01	2.41E+00	2.24E+00	4.18E+00	6.54E-01	2.44E+00	4.01E+00	NA	NA	NA	
	022	5.7	2.8	10/20/2008	10:19	5.99E+02	5.63E+02	5.91E+02	7.01E-01	5.47E-01	5.20E-01	2.51E+00	6.27E+00	7.46E+00	1.51E+00	6.24E+00	7.35E+00	NA	NA	NA	
	023	5.7	2.8	1/28/2009	12:00	6.75E+02	2.48E+02	2.04E+02	1.04E+00	7.47E-01	7.44E-01	-1.53E+00	3.59E+00	2.95E+00	-6.63E-01	2.30E+00	2.48E+00	NA	NA	NA	
U3-T2	012	5.7	2.6	10/7/2005	12:00	7.03E+02	3.93E+02	4.15E+02	NA	NA	NA	3.67E+00	1.10E+01	8.06E+00	4.13E+00	1.24E+01	9.39E+00	NA	NA	NA	U3-T2
	013	5.7	2.6	10/21/2005	12:00	1.47E+03	3.63E+02	4.27E+02	NA	NA	NA	3.33E+00	1.00E+01	7.23E+00	3.00E+00	9.00E+00	6.90E+00	NA	NA	NA	
	014	5.7	2.6	10/28/2005	12:00	1.28E+03	4.56E+02	4.72E+02	NA	NA	NA	3.44E+00	1.03E+01	7.67E+00	4.28E+00	1.28E+01	9.89E+00	NA	NA	NA	
	015	5.7	2.6	11/4/2005	12:00	1.19E+03	4.59E+02	4.76E+02	NA	NA	NA	3.41E+00	1.02E+01	7.53E+00	3.86E+00	1.16E+01	8.81E+00	NA	NA	NA	
	016	5.7	2.6	11/10/2005	12:00	1.64E+03	4.59E+02	4.61E+02	NA	NA	NA	3.81E+00	1.14E+01	8.34E+00	3.98E+00	1.19E+01	9.09E+00	NA	NA	NA	
	017	5.7	2.6	11/18/2005	12:00	1.13E+03	4.65E+02	4.81E+02	NA	NA	NA	3.97E+00	1.19E+01	8.70E+00	4.15E+00	1.25E+01	9.55E+00	NA	NA	NA	
	018	5.7	2.6	12/2/2005	12:00	1.33E+03	4.56E+02	4.64E+02	NA	NA	NA	2.31E+00	6.92E+00	5.23E+00	2.58E+00	7.74E+00	6.11E+00	NA	NA	NA	
	001	5.7	2.6	12/15/2005	13:30	1.29E+03	4.62E+02	4.70E+02	NA	NA	NA	2.77E+00	8.30E+00	6.09E+00	2.85E+00	8.55E+00	6.57E+00	NA	NA	NA	
	002	5.7	2.6	12/30/2005	10:50	1.69E+03	4.74E+02	4.71E+02	NA	NA	NA	3.81E+00	1.14E+01	8.46E+00	3.49E+00	1.05E+01	8.31E+00	NA	NA	NA	
	003	5.7	2.6	1/6/2006	8:45	2.42E+03	4.92E+02	4.66E+02	NA	NA	NA	2.86E+00	8.57E+00	6.56E+00	4.04E+00	1.21E+01	9.38E+00	NA	NA	NA	
	004	5.7	2.6	1/13/2006	13:20	1.78E+03	4.77E+02	4.72E+02	NA	NA	NA	4.01E+00	1.20E+01	8.74E+00	3.41E+00	1.02E+01	7.94E+00	NA	NA	NA	
	005	5.7	2.6	1/20/2006	11:00	1.75E+03	4.56E+02	4.61E+02	NA	NA	NA	3.40E+00	1.02E+01	7.71E+00	3.27E+00	9.82E+00	7.99E+00	NA	NA	NA	
	006	5.7	2.6	1/25/2006	11:10	2.32E+03	4.86E+02	4.61E+02	NA	NA	NA	3.96E+00	1.19E+01	8.77E+00	3.17E+00	9.50E+00	7.64E+00	NA	NA	NA	
	007	5.7	2.6	2/1/2006	11:15	2.13E+03	4.80E+02	4.60E+02	NA	NA	NA	3.17E+00	9.51E+00	7.02E+00	3.47E+00	1.04E+01	7.99E+00	NA	NA	NA	
	009	5.7	2.6	2/17/2006	9:20	1.92E+03	2.50E+03	6.36E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	010	5.7	2.6	3/16/2006	12:00	1.69E+03	3.36E+02	2.04E+02	5.87E-01	9.21E-01	1.00E+00	-7.43E-01	6.36E+00	6.83E+00	-1.22E-01	6.33E+00	6.88E+00	NA	NA	NA	
	011	5.7	2.6	5/26/2006	13:15	1.90E+03	3.86E+02	2.48E+02	1.49E+00	1.11E+00	1.01E+00	1.64E+00	1.01E+01	1.22E+01	5.67E+00	9.40E+00	1.25E+01	NA	NA	NA	

TABLE 5
HISTORIC GROUNDWATER ANALYTICAL RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	SAMPLE ID	SAMPLE ZONE CENTER, depth ft below top of casing[2]	SAMPLE ZONE CENTER, elevation ft msl[2]	SAMPLE COLLECTION		ANALYSIS RESULTS															Well ID[1]
						TRITIUM (pCi/L)			Sr-90 (pCi/L)			Cs-137 (pCi/L)			Co-60 (pCi/L)			Ni-63 (pCi/L)			
				Date	Time	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	Result	Std. Dev.	MDC	
	019	5.7	2.6	7/12/2006	12:25	1.83E+03	3.78E+02	2.54E+02	7.24E-01	1.72E+00	1.80E+00	2.58E+00	6.90E+00	8.07E+00	1.30E+00	6.69E+00	7.74E+00	NA	NA	NA	
	020	5.7	2.6	8/15/2006	10:30	1.58E+03	7.79E+02	7.72E+02	NA	NA	NA	-8.87E-01	7.17E+00	7.64E+00	3.29E+00	9.10E+00	1.14E+01	NA	NA	NA	
	021	5.7	2.6	6/12/2007	9:25	1.45E+03	5.19E+02	4.36E+02	-3.89E-01	7.05E-01	9.59E-01	2.03E-01	2.29E+00	2.54E+00	-1.00E-01	2.42E+00	2.74E+00	5.88E+00	1.39E+01	1.57E+01	
	022	5.7	2.6	8/1/2007	14:14	1.25E+03	4.62E+02	2.55E+02	-4.84E-02	5.37E-01	7.11E-01	-1.75E+00	3.23E+00	3.20E+00	1.99E-02	3.54E+00	4.00E+00	NA	NA	NA	
	023	5.7	2.6	10/22/2007	15:07	1.17E+03	4.76E+02	4.02E+02	2.36E-01	5.28E-01	6.08E-01	-7.13E-02	2.82E+00	3.11E+00	2.53E+00	3.50E+02	3.81E+00	NA	NA	NA	
	024	5.7	2.6	1/22/2008	16:16	1.33E+03	3.83E+02	2.97E+02	4.31E-01	8.54E-01	9.63E-01	7.39E-01	2.97E+00	3.39E+00	-1.14E+00	3.39E+00	2.86E+00	2.78E+00	1.62E+01	1.89E+01	
	025	5.7	2.6	5/2/2008	14:44	1.02E+03	1.77E+02	2.22E+02	6.52E-01	3.31E-01	4.70E-01	5.80E-01	2.06E+00	3.53E+00	7.90E-01	1.63E+00	3.00E+00	NA	NA	NA	
	026	5.7	2.6	7/23/2008	13:40	9.97E+02	2.85E+02	3.64E+02	5.90E-01	5.19E-01	8.44E-01	3.57E-02	1.72E+00	2.93E+00	-1.02E+00	2.44E+00	3.39E+00	NA	NA	NA	
	027	5.7	2.6	10/20/2008	10:36	9.28E+02	5.97E+02	5.90E+02	4.73E-01	4.95E-01	4.85E-01	-4.68E-01	4.82E+00	5.31E+00	-5.02E+00	6.54E+00	6.06E+00	NA	NA	NA	
	028	5.7	2.6	1/28/2009	11:40	1.11E+03	2.87E+02	2.04E+02	6.04E-01	6.41E-01	6.75E-01	7.10E-01	2.42E+00	2.74E+00	4.09E-01	2.30E+00	2.61E+00	NA	NA	NA	
U1-CSS	001	14	6.1	1/30/2007	11:45	1.76E+03	6.00E+02	5.70E+02	1.95E+01	2.19E+00	1.70E+00	7.00E-01	1.32E+00	1.40E+00	-3.20E-01	1.38E+00	1.60E+00	1.64E+01	2.67E+01	2.90E+01	U1-CSS
	002	14	6.1	2/27/2007	11:24	4.32E+03	6.90E+02	5.70E+02	1.38E+01	2.31E+00	2.10E+00	1.11E+00	1.95E+00	2.10E+00	7.00E-01	1.95E+00	2.20E+00	-1.30E+00	2.55E+01	2.90E+01	
	003	14	6.1	6/13/2007	11:39	1.53E+03	5.25E+02	4.35E+02	1.45E+01	1.91E+00	6.24E-01	8.50E-01	3.57E+00	4.15E+00	2.82E+00	4.28E+00	4.93E+00	4.42E+00	1.95E+01	2.22E+01	
	004	14	6.1	8/6/2007	15:55	2.80E+03	2.81E+02	1.95E+02	2.68E+01	2.33E+00	5.71E-01	2.53E+00	4.30E+00	4.61E+00	2.48E+00	6.84E+00	4.17E+00	NA	NA	NA	
	005	14	6.1	1/15/2008	14:54	4.95E+02	2.04E+02	1.76E+02	7.73E+00	1.31E+00	6.91E-01	2.85E+00	6.56E+00	3.36E+00	-6.88E-02	3.33E+00	3.71E+00	NA	NA	NA	
	006	14	6.1	4/23/2008	15:25	1.77E+03	1.96E+02	1.44E+02	6.74E+00	9.01E-01	7.19E-01	-1.36E+00	2.12E+00	3.20E+00	-7.61E-01	2.08E+00	3.16E+00	NA	NA	NA	
	007	14	6.1	5/12/2008	14:05	6.88E+02	1.35E+02	1.42E+02	4.83E+00	8.35E-01	9.25E-01	2.59E+00	2.30E+00	4.25E+00	3.09E-01	2.58E+00	3.96E+00	-2.18E+00	1.19E+01	2.08E+01	
	008	14	6.1	9/8/2008	10:24	1.45E+03	3.77E+02	4.98E+02	9.38E+00	9.40E-01	5.43E-01	1.90E+00	2.07E+00	3.76E+00	NA	NA	NA	NA	NA	NA	
	009	14	6.1	11/6/2008	14:48	2.66E+03	3.86E+02	1.66E+02	6.74E+00	1.20E+00	5.33E-01	3.52E+00	6.01E+00	7.29E+00	-1.94E+00	6.45E+00	6.67E+00	1.02E+01	1.65E+01	1.85E+01	
	010	14	6.1	11/19/2008	13:50	2.20E+03	2.33E+02	1.62E+02	9.08E+00	1.38E+00	5.80E-01	2.35E+00	4.04E+00	4.98E+00	8.56E-01	4.63E+00	5.37E+00	NA	NA	NA	
U1-NCD	001			5/8/2008	9:45	9.50E+03	3.49E+02	1.96E+02	3.97E+02	2.58E+00	3.57E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	U1-NCD
	002			10/15/2008	12:35	6.19E+03	3.71E+02	1.61E+02	4.35E+02	5.89E+00	3.33E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003			1/12/2009	13:45	2.13E+03	2.48E+02	1.92E+02	4.64E+02	8.90E+00	6.61E-01	2.84E+04	2.63E+03	1.22E+01	7.66E-01	2.37E+00	2.80E+00	6.41E+02	4.11E+01	1.89E+01	
U1-SFDS	001			4/9/2008	8:55	6.28E+02	1.41E+02	1.97E+02	9.98E+00	4.86E-01	4.31E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	U1-SFDS
	002			5/8/2008	9:10	8.81E+02	1.50E+02	1.96E+02	1.40E+01	5.18E-01	3.69E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003			10/15/2008	12:45	1.09E+03	1.79E+02	1.67E+02	1.85E+01	1.26E+00	4.56E-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	004			1/14/2009	9:15	3.11E+02	1.82E+02	1.93E+02	1.22E+01	1.67E+00	8.15E-01	6.39E+00	3.47E+00	2.22E+00	1.03E+00	1.91E+00	2.27E+00	7.26E+00	1.62E+01	1.83E+01	
RW-1	001	107.5	-30	10/25/2006	11:37	6.41E+04	4.88E+03	8.52E+02	-8.44E-01	1.29E+00	1.52E+00	9.50E-01	4.75E+00	5.45E+00	8.01E-01	4.62E+00	5.32E+00	NA	NA	NA	RW-1
	002	107.5	-30	10/25/2006	14:15	2.95E+04	2.28E+03	5.85E+02	3.10E-01	8.79E-01	9.23E-01	1.99E+00	5.23E+00	5.98E+00	4.31E-01	4.74E+00	5.22E+00	NA	NA	NA	
	005	107.5	-30	10/31/2006	20:00	1.89E+04	1.49E+03	4.73E+02	9.06E-01	1.15E+00	1.14E+00	5.93E-01	4.51E+00	5.21E+00	1.65E+00	5.31E+00	6.60E+00	NA	NA	NA	
	004	107.5	-30	10/31/2006	15:55	2.63E+04	2.04E+03	5.51E+02	-1.06E+00	1.15E+00	1.39E+00	-2.26E-01	3.86E+00	3.99E+00	-6.22E-03	2.86E+00	3.21E+00	NA	NA	NA	
	003	107.5	-30	10/31/2006	12:27	1.07E+05	8.06E+03	1.10E+03	-3.70E-01	9.51E-01	1.09E+00	7.18E-01	4.23E+00	4.71E+00	7.34E-01	3.04E+00	3.61E+00	NA	NA	NA	
	006	107.5	-30	11/1/2006	12:00	1.84E+04	1.45E+03	4.66E+02	3.64E-01	1.03E+00	1.08E+00	-3.39E+00	4.14E+00	3.90E+00	-5.25E-01	4.01E+00	4.19E+00	NA	NA	NA	
	007	107.5	-30	11/2/2006	12:00	2.40E+04	2.13E+03	1.00E+03	1.50E-01	6.00E-01	6.70E-01	1.12E+00	2.37E+00	2.60E+00	-8.50E-01	2.37E+00	2.90E+00	NA	NA	NA	
	008	107.5	-30	11/3/2006	9:00	3.06E+04	2.34E+03	1.00E+03	4.80E-01	7.20E-01	7.80E-01	-1.05E+00	2.19E+00	2.60E+00	8.20E-01	2.40E+00	2.70E+00	NA	NA	NA	
MH-5[7]	001			6/29/2007	12:15	1.41E+03	2.33E+02	1.87E+02	-3.26E-01	6.21E-01	9.20E-01	-9.57E-01	3.40E+00	3.60E+00	6.39E-02	3.13E+00	3.49E+00	NA	NA	NA	MH-57
	002			8/10/2007	15:15	1.17E+03	5.21E+02	4.56E+02	3.17E-02	7.84E-01	9.38E-01	-5.40E-01	3.17E+00	2.87E+00	-8.50E-01	2.84E+00	2.93E+00	NA	NA	NA	
	003			10/26/2007	13:30	1.62E+03	2.30E+02	1.84E+02	1.60E-01	6.06E-01	7.10E-01	2.15E-01	2.64E+00	2.95E+00	-6.20E-01	2.90E+00	3.06E+00	NA	NA	NA	
	004			1/16/2008	12:30	9.28E+02	2.45E+02	1.77E+02	4.62E-01	8.33E-01	9.37E-01	5.23E-01	2.78E+00	3.09E+00	5.97E-01	2.55E+00	2.90E+00	NA	NA	NA	
LAF-002	001		-22.3	6/6/2006	12:47	3.98E+01	3.60E+02	6.98E+02	1.38E+00	1.85E+00	1.93E+00	-3.88E+00	1.53E+00	1.59E+00	-2.24E+00	1.25E+01	1.34E+01	-2.84E-01	2.13E+01	2.34E+01	LAF-002
	001		-22.3	6/6/2006	12:47	5.20E+01	1.71E+02	1.83E+02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	003		-22.3	9/19/2006	13:14	-4.71E+01	1.50E+02	1.70E+02	-5.08E-01	8.90E-01	1.07E+00	6.45E-02	9.05E+00	1.01E+00	-2.76E+00	6.35E+00	4.99E+00	NA	NA	NA	
	004		-22.3	12/4/2006	13:38	-1.20E+01	1.62E+02	1.60E+02	-1.20E-01	7.80E-01	8.50E-01	NA	NA	NA	9.00E-01	5.40E+00	6.30E+00	-2.50E+00	7.20E+00	8.10E+00	
	005		-22.3	3/7/2007	14:45	-8.30E+01	1.56E+02	1.60E+02	8.20E-01	1.50E+00	1.60E+00	3.10E+00	4.80E+00	5.10E+00	-1.20E+00	5.40E+00	7.30E+00	NA	NA	NA	
	006		-22.3	6/7/2007	13:18	-6.85E+00	1.33E+02	1.54E+02	3.19E-01	6.02E-01	6.79E-01	7.80E-01	2.63E+00	3.04E+00	6.55E-01	2.60E+00	3.04E+00	NA	NA	NA	
	007		-22.3	10/9/2007	9:35	7.46E+01	1.37E+02	1.55E+02	4.43E-01	4.98E-01	5.18E-01	-5.45E-01	2.10E+00	1.69E+00	-1.44E+00	1.78E+00	1.39E+00	NA	NA	NA	
	008		-22.3	12/4/2007	10:50	9.00E+01	1.46E+02	1.62E+02	4.89E-01	6.20E-01	6.62E-01	-6.91E-01	4.59E+00	4.37E+00	-2.35E+00	3.72E+00	3.39E+00	NA	NA	NA	
	009		-22.3	4/10/2008	0:00	4.65E+01	8.46E+01	1.44E+02	4.73E-01	3.02E-01	4.56E-01	1.91E+00	2.14E+00	3.95E+00	1.61E+00	2.46E+00	4.56E+00	NA	NA	NA	
	010		-22.3	10/17/2008	10:32	8.19E+01	1.55E+02	1.74E+02	4.05E-01	7.90E-01	9.01E-01	2.36E-01	2.76E+00	3.16E+00	-3.08E-02	3.09E+00	3.46E+00	-4.61E+00	2.01E+01	2.35E+01	
B-1[7]	001			6/29/2007	12:35	7.93E+02	2.07E+02	1.89E+02	-3.83E-01	6.75E-01	9.80E-01	0.00E+00	7.04E+00	4.44E+00	-9.13E-01	3.30E+00	3.40E+00	NA	NA	NA	B-17
	002			8/14/2007	11:30	1.10E+03	2.25E+02	1.90E+02	1.29E-02	5.93E-01	7.38E-01	0.00E+00	6.71E+00	3.93E+00	9.94E-01	3.54E+00	4.16E+00	NA	NA	NA	
	003			10/22/2007	14:49	1.10E+03	4.68E+02	4.01E+02	-1.56E-01	3.72E-01	5.51E-01	1.68E+01	5.82E+00	3.82E+00	1.33E+00	3.23E+00	3.53E+00	NA	NA	NA	
	004			1/22/2008	13:08	2.27E+02	1.61E+02	1.71E+02	1.29E-01	5.00E-01	6.12E-01	3.13E-01	2.54E+00	2.83E+00	-9.46E-02	2.72E+00	3.01E+00	NA	NA	NA	
	005			4/18/2008	18:25	1.17E+03	1.57E+02	2.01E+02	-1.14E-01	3.81E-01	7.82E-01	2.00E+01	3.70E+00	3.07E+00	-2.48E-01	1.76E+00	2.97E+00	NA	NA	NA	
B-6[7]	001			7/5/2007	9:00	4.03E+02	1.67E+02	1.69E+02	1.01E-01	4.97E-01	5.67E-01	1.29E+00	3.46E+00	4.04E+00	1.09E+00	3.51E+00	4.15E+00	NA	NA	NA	B-67
	002			8/14/2007	8:30	5.46E+01	1.68E+02	1.92E+02	-3.06E-01	6.20E-01	8.32E-01	5.63E-01	2.97E+00	3.42E+00	-2.88E+00	3.31E+00	2.35E+00	NA	NA	NA	
	003			10/22/2007	11:30	1.07E+02	1.70E+02	1.90E+02	-7.54E-02	4.34E-01	5.83E-01	2.39E+00	2.33E+00	3.04E+00	1.04E+00	2.46E+00	3.05E+00	NA	NA	NA	
	004			1/16/2008	16:50	4.72E+02	2.04E+02	1.79E+02	1.05E-01	7.05E-01	8.83E-01	3.96E+00	4.41E+00	3.32E+00	1.29E+00	3.15E+00	3.66E+00	NA	NA	NA	
	005			4/25/2008	14:15	5.23E+01	8.45E+01	1.43E+02	-1.20E-01	2.59E-01	5.25E-01	-2.89E-01	1.96E+00	3.24E+00	-7.50E-01	3.43E+00	4.21E+00	NA	NA	NA	

Notes:

1. For nested multi-level monitoring wells, suffix of well ID indicates depth (rounded to nearest foot) from reference point on casing to bottom of well screen. For Waterloo multi-level systems, suffix indicates depth (rounded to nearest foot) from reference point on casing to top of sampling port. Well IDs without a suffix are open bedrock wellbores.
2. Sampling depths within sampling intervals (location of pump intake) have been established at location of most transmissive zone to the extent possible.
3. NA indicates that the constituent was not analyzed.
4. Current well identifications are shown for each location. Minor name changes have been made based on altered transducer installations.
5. Dot pattern denotes sampling interval is positioned within overburden soils. Open box indicates sampling interval is in bedrock.
6. At monitoring well U3T1, sample IDs 019-B, 019-D, and 019-S were collected for laboratory and field QAQC (B=Blind, D=Duplicate, S-Spike). Only the duplicate sample results were included in the calculations for rolling averages.
7. These locations are storm drains, not monitoring wells.

FIGURES

Figure 1 **Site Location Plan**

Figure 2 **Site Plan**

Figure 3 **Lower Hudson Valley Geologic Map**

Figure 4 **Current and Potential Future SSC Source Locations**

Figure 4A **Unit 3 – Cross-Section C-C"**

Figure 5 **1st Quarter 2009 Shallow and Deep Groundwater Contours**

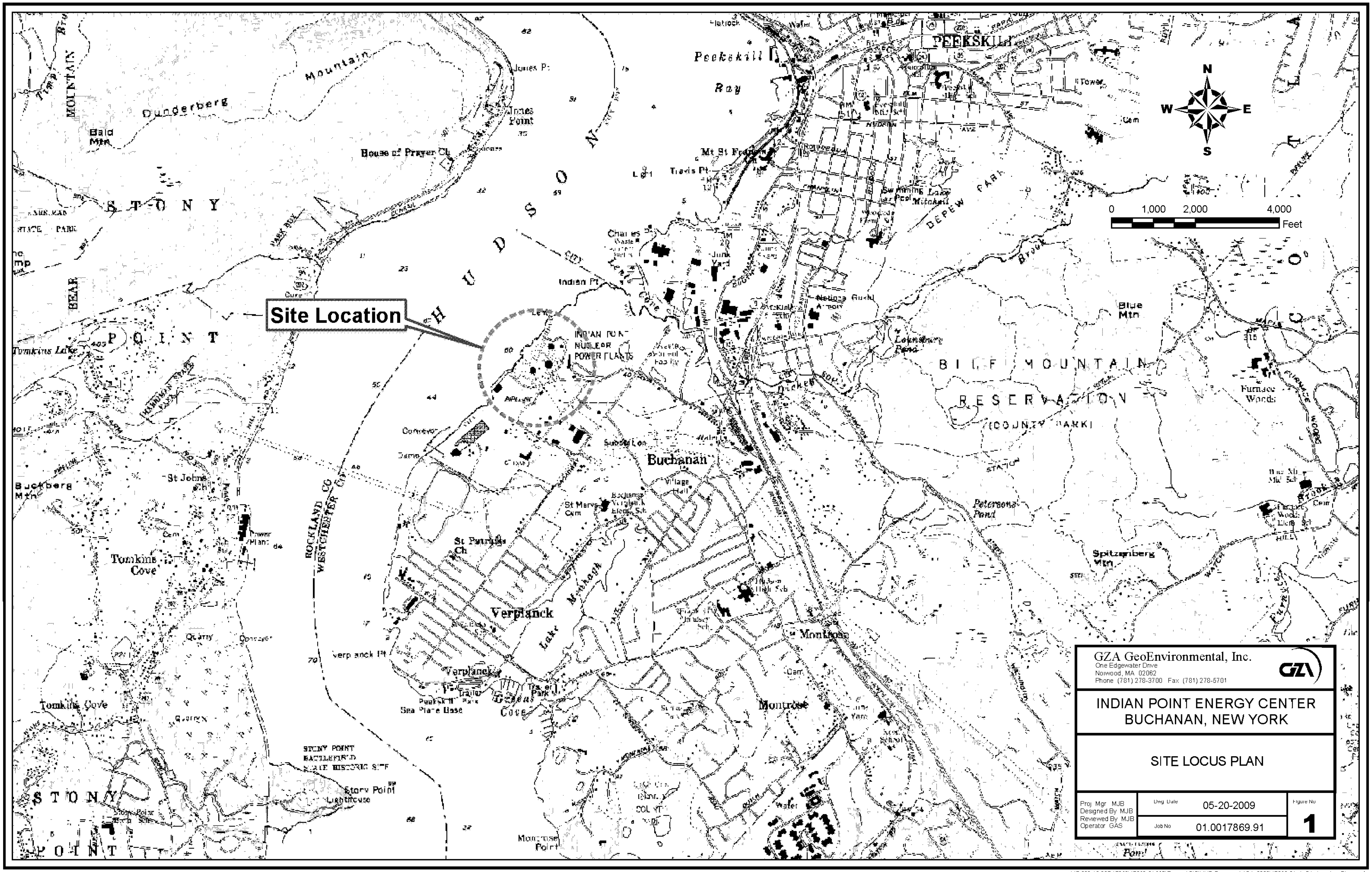
Figure 5A **1st Quarter 2009 Long-Term Transducer Monitoring Evaluation Map**

Figure 6 **1st Quarter 2009 Average Tritium Activity Map**

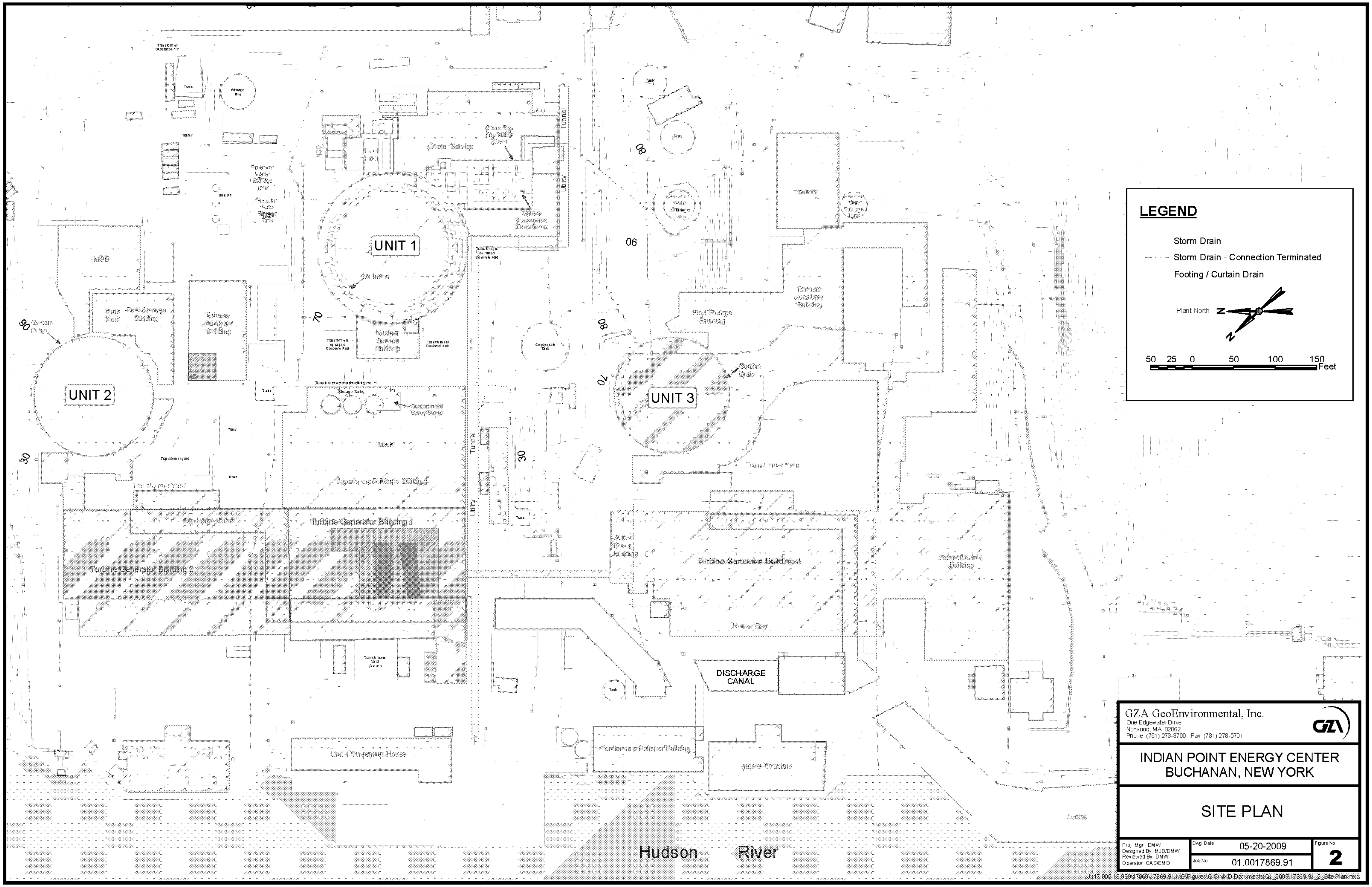
Figure 7 **1st Quarter 2009 Average Strontium-90 Activity Map**

Figure 7A **Sr-90 Baseline Analysis – Unit 1 Defueling Evaluation**

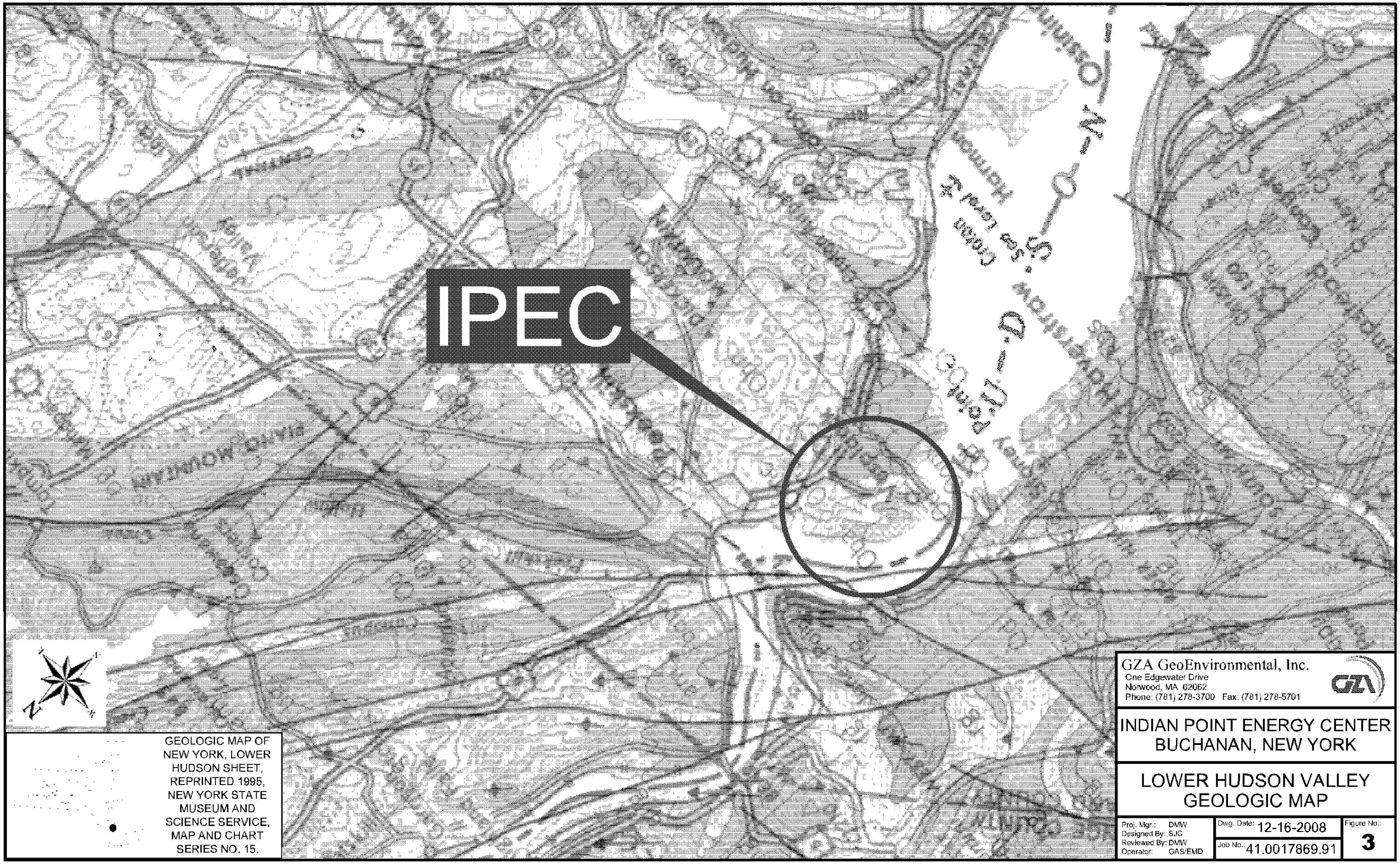
Figure 8 **1st Quarter 2009 Average Cesium, Cobalt, and Nickel Activity Map**



J:\17,000-18,999\17869\17869-91 MG\Figures\GIS\MXD Documents\Q1_2009\17869-91_1_Site Location Plan.mxd



UNIT 1
UNIT 2
UNIT 3
Tunnel
Utility
Turbine Generator Building 1
Turbine Generator Building 2
Turbine Generator Building 3
DISCHARGE
CANAL
Hudson River
90
80
70
30
LEGEND
Storm Drain
Storm Drain - Connection Terminated
Footing / Curtain Drain
Plant North
N
N
50 25 0 50 100 150
Feet
GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
Phone (781) 278-3700 Fax (781) 278-5701
INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK
SITE PLAN
Proj Mgr DMW
Designed By MJB/DMW
Reviewed By DMW
Operator GAS/EMD
Dwg Date 05-20-2009
Job No 01.0017869.91
Figure No 2



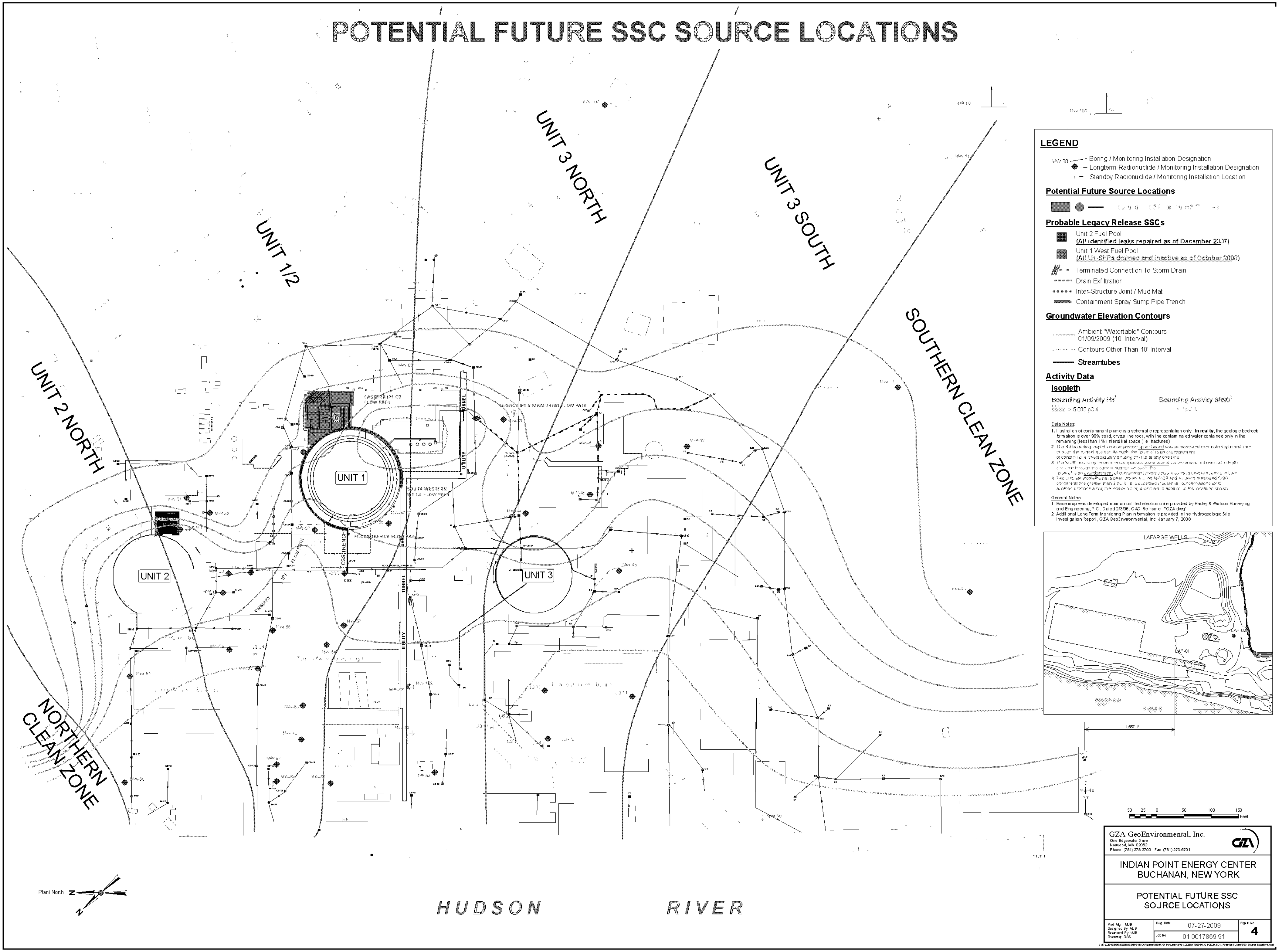
GEOLOGIC MAP OF NEW YORK, LOWER HUDSON SHEET, REPRINTED 1995, NEW YORK STATE MUSEUM AND SCIENCE SERVICE, MAP AND CHART SERIES NO. 15.

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
Phone: (781) 278-3700 Fax: (781) 278-5701

INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

LOWER HUDSON VALLEY GEOLOGIC MAP

Proj. Mgr.: DMW Designed By: SJC Reviewed By: DMW Operator: GAS/EMD	Dwg. Date: 12-16-2008 Job No.: 41.0017869.91	Figure No.: 3


POTENTIAL FUTURE SSC SOURCE LOCATIONS
UNIT 3 NORTH
UNIT 3 SOUTH
UNIT 1/2
UNIT 2 NORTH
SOUTHERN CLEAN ZONE
NORTHERN CLEAN ZONE
UNIT 1
UNIT 2
UNIT 3
UTILITY
TUNNEL
HUDSON RIVER
Plant North
LEGEND
Boring / Monitoring Installation Designation
Longterm Radionuclide / Monitoring Installation Designation
Standby Radionuclide / Monitoring Installation Location
Potential Future Source Locations
Probable Legacy Release SSCs
Unit 2 Fuel Pool
(All identified leaks repaired as of December 2007)
Unit 1 West Fuel Pool
(All U1-SFPs drained and inactive as of October 2008)
Terminated Connection To Storm Drain
Drain Exfiltration
Inter-Structure Joint / Mud Mat
Containment Spray Sump Pipe Trench
Groundwater Elevation Contours
Ambient "Watertable" Contours 01/09/2009 (10' Interval)
Contours Other Than 10' Interval
Streamtubes
Activity Data
Isopleth
Bounding Activity H3
> 5,000 pCi/l
Bounding Activity SR90
Data Notes:
1. Illustration of contaminant plume is a schematic representation only. In reality, the geologic bedrock formation is over 99% solid, crystalline rock, with the contaminated water contained only in the remaining (less than 1%) interstitial space (i.e. fractures)
General Notes
1. Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, P.C., Dated 2/3/06, CAD file name "GZA.dwg"
2. Additional Long Term Monitoring Plan information is provided in the Hydrogeologic Site Investigation Report, GZA GeoEnvironmental, Inc. January 7, 2008
LAFARGE WELLS
50 25 0 50 100 150 Feet
GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
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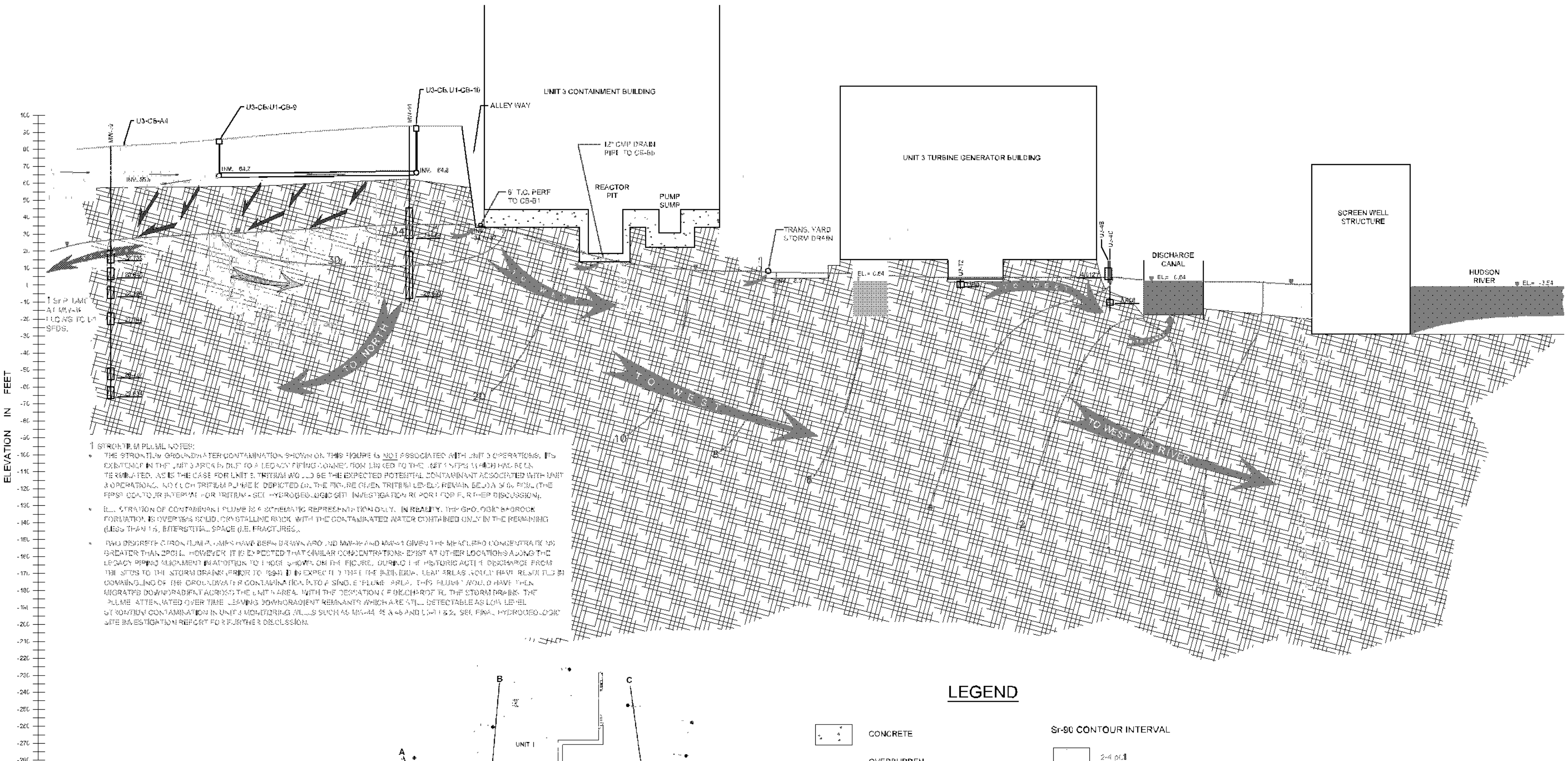
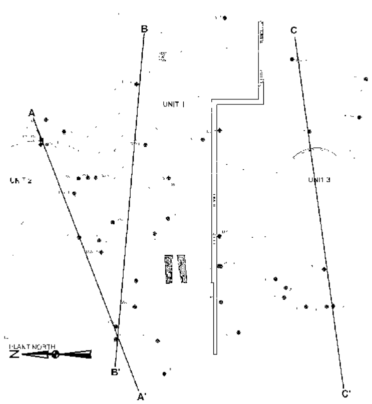
INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK
POTENTIAL FUTURE SSC SOURCE LOCATIONS
Proj Mgr MJB
Designed By MJB
Reviewed By MJB
Operator GAS
Dwg Date 07-27-2009
Job No 01 0017869 91
Figure No 4

UNIT 3 CROSS SECTION C-C'



1 STRONTIUM PLUME NOTES:

- THE STRONTIUM GROUNDWATER CONTAMINATION SHOWN ON THIS FIGURE IS NOT ASSOCIATED WITH UNIT 3 OPERATIONS. ITS EXISTENCE IN THE UNIT 3 AREA IS DUE TO A LEGACY PIPING CONNECTION LINKED TO THE UNIT 1 SFPS WHICH HAS BEEN TERMINATED. AS IS THE CASE FOR UNIT 2, TRITIUM WOULD BE THE EXPECTED POTENTIAL CONTAMINANT ASSOCIATED WITH UNIT 3 OPERATIONS. NO SUCH TRITIUM PLUME IS DEPICTED ON THE FIGURE GIVEN TRITIUM LEVELS REMAIN BELOW 5K PCI/L (THE FIRST CONTOUR INTERVAL FOR TRITIUM - SEE HYDROGEOLOGIC SITE INVESTIGATION REPORT FOR FURTHER DISCUSSION).
- ILLUSTRATION OF CONTAMINANT PLUME IS A SCHEMATIC REPRESENTATION ONLY. IN REALITY, THE GEOLOGIC BEDROCK FORMATION IS OVER 99% SOLID, CRYSTALLINE ROCK WITH THE CONTAMINATED WATER CONTAINED ONLY IN THE REMAINING (LESS THAN 1%) INTERSTITIAL SPACE (I.E. FRACTURES).
- TWO DISCRETE STRONTIUM PLUMES HAVE BEEN DRAWN AROUND MW-39 AND MW-41 GIVEN THE MEASURED CONCENTRATIONS GREATER THAN 2PCI/L. HOWEVER, IT IS EXPECTED THAT SIMILAR CONCENTRATIONS EXIST AT OTHER LOCATIONS ALONG THE LEGACY PIPING ALIGNMENT IN ADDITION TO THOSE SHOWN ON THE FIGURE. DURING THE HISTORIC ACTIVE DISCHARGE FROM THE SFDS TO THE STORM DRAINS (PRIOR TO 1994) IT IS EXPECTED THAT THE INDIVIDUAL LEAK AREAS WOULD HAVE RESULTED IN COMMINGLING OF THE GROUNDWATER CONTAMINATION INTO A SINGLE "PLUME" AREA. THIS PLUME WOULD HAVE THEN MIGRATED DOWNGRADIENT ACROSS THE UNIT 3 AREA. WITH THE CESSATION OF DISCHARGE TO THE STORM DRAINS, THE PLUME ATTENUATED OVER TIME LEAVING DOWNGRADIENT REMNANTS WHICH ARE STILL DETECTABLE AS LOW LEVEL STRONTIUM CONTAMINATION IN UNIT 3 MONITORING WELLS SUCH AS MW-44, 45 & 46 AND U3-T1 & 2. SEE FINAL HYDROGEOLOGIC SITE INVESTIGATION REPORT FOR FURTHER DISCUSSION.



CROSS SECTION LOCATION

NOT TO SCALE

NOTE:
A-A' AND B-B' ARE FIGURES 9.1 AND 9.2 IN HYDROGEOLOGIC SITE INVESTIGATION REPORT.

LEGEND

CONCRETE

OVERBURDEN

BEDROCK

GROUNDWATER PIEZOMETRIC HEAD CONTOUR

GROUNDWATER TABLE

MW-44

MONITORING WELL

SCREENED INTERVAL

GROUNDWATER ELEVATIONS FOR EACH SCREENED INTERVAL.
MEASURED 1-09-09

35.29

Sr-90 CONTOUR INTERVAL

2-4 pCi/L

4-6 pCi/L

MOST RECENT MEASURED Sr-90 ACTIVITIES IN pCi/L THROUGH QUARTER 1 2009 DATA.

GROUNDWATER FLOW DIRECTION

HISTORIC UNSATURATED ZONE FLOW OF STRONTIUM DUE TO LEGACY STORM DRAIN CONNECTION TO U1 SFDS. CONNECTION TERMINATED IN 1994.

SATURATED ZONE FLOW OF HISTORIC Sr-90 CONTAMINATION.

GENERAL NOTES:

1. BASE MAP DEVELOPED FROM ELECTRONIC FILES, PREPARED BY BADEY AND WATSON SURVEYING & ENGINEERING PC, COLD SPRING, NY 10516. EXACT LOCATIONS AND ORIENTATIONS OF STRUCTURES ABOVE THE WATER TABLE ARE APPROXIMATE AND/OR HAVE BEEN MODIFIED ON THESE SECTIONS TO BETTER ILLUSTRATE CONTAMINANT SOURCE MECHANISMS AND/OR MIGRATION PATHWAYS. U3-VC FOUNDATION EXCAVATION ELEVATIONS OBTAINED FROM U2 EXCAVATION PLANS.
2. MW-41, MW-45, MW-46 AND MW-63 AS WELL AS SOME STRUCTURES ARE OFFSET AND PROJECTED ONTO THE SECTION LINE, AS INDICATED BY REDUCED (GREY) LINE WEIGHT ON PROFILE.
3. WATER LEVEL READINGS HAVE BEEN MADE IN THE MONITORING WELLS AT THE TIMES AND UNDER THE CONDITIONS STATED. THESE DATA HAVE BEEN REVIEWED AND INTERPRETATIONS MADE IN THE TEXT OF THIS REPORT. HOWEVER, IT MUST BE STATED THAT FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO VARIATIONS IN RAINFALL, TIDES, TEMPERATURE AND OTHER FACTORS.
4. THE STRATIFICATION LINES ARE BASED UPON INTERPOLATIONS BETWEEN WIDELY SPACED BORINGS, AND MONITORING WELLS AND THUS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES. ACTUAL TRANSITIONS MAY VARY FROM THOSE SHOWN.

0 15' 30' 60' 90'
SCALE IN FEET

GZA GeoEnvironmental, Inc.
Engineers and Scientists
ONE EDGEWATER DRIVE
NORWOOD, MASSACHUSETTS 02062
(781) 278-3700

INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

UNIT 3
CROSS SECTION C - C'

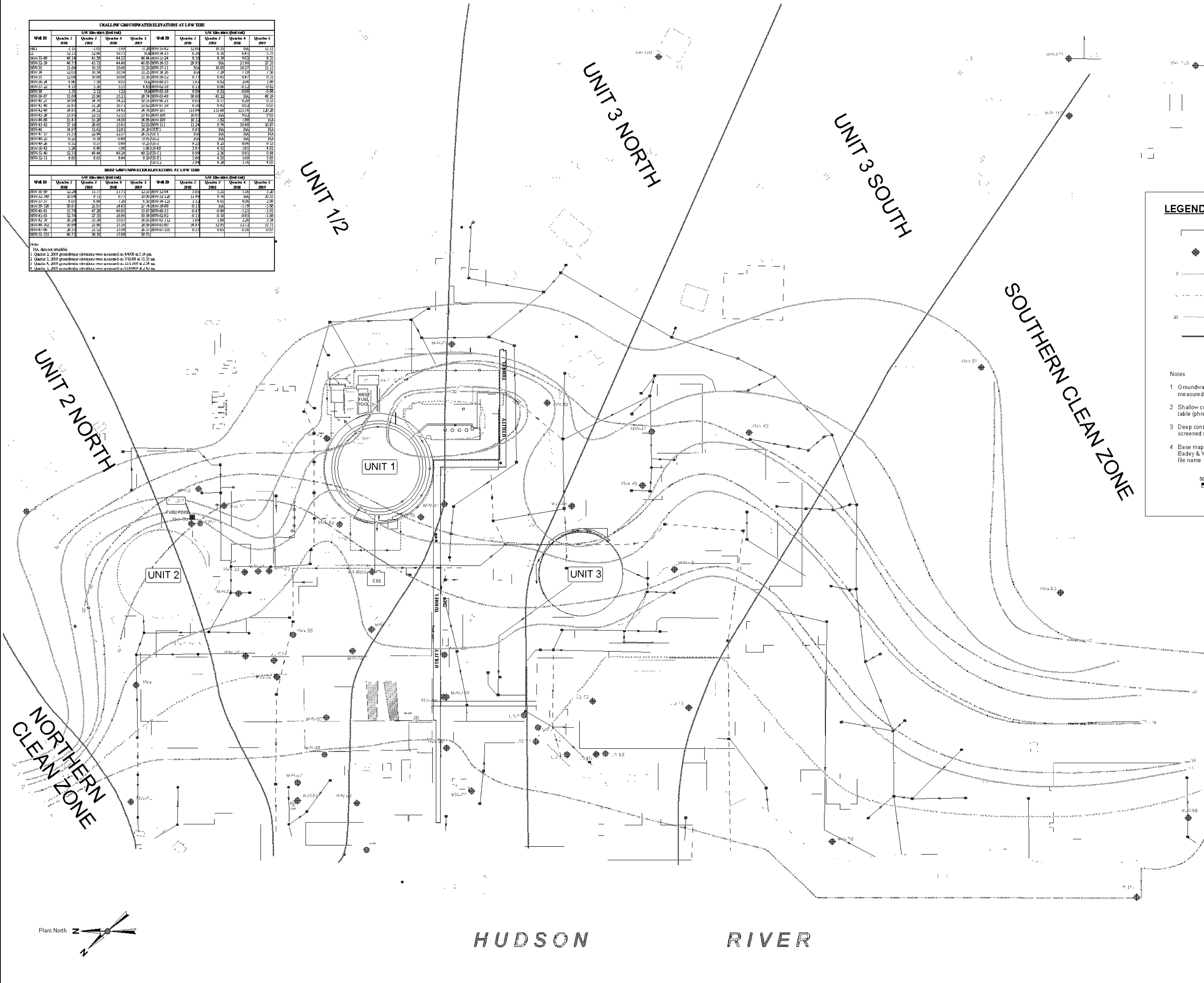
PROJ MGR: MJB	DWG. DATE	07-21-2009	FIGURE NO.
DESIGNED BY: MJB			4A
REVIEWED BY: MJB	JOB NO.	41.0017869.91	
DRAWN BY: GAS			

1st QUARTER 2009 SHALLOW AND DEEP GROUNDWATER CONTOURS

SHALLOW GROUNDWATER ELEVATIONS AT LOW TIDE									
Well ID	GW Elevation (feet msl) Quarter 2 2008	Quarter 3 2008	Quarter 4 2008	Quarter 1 2009	Well ID	GW Elevation (feet msl) Quarter 2 2008	Quarter 3 2008	Quarter 4 2008	Quarter 1 2009
HR1	-1.13	-1.05	-1.69	-3.28	MW-53-82	12.60	10.55	NA	11.11
I2	52.11	52.90	50.75	NA	MW-54-35	6.36	6.16	6.41	5.75
MW-31-49	46.14	45.39	44.13	46.44	MW-55-24	8.16	8.18	9.02	8.35
MW-32-59	46.75	45.72	44.48	46.83	MW-56-53	29.93	NA	21.90	27.33
MW-33	11.66	10.55	10.60	11.23	MW-57-11	NA	10.03	10.27	11.11
MW-34	12.03	10.54	10.54	11.25	MW-58-26	NA	7.29	7.19	7.56
MW-35	12.06	10.68	10.68	11.36	MW-59-32	0.77	0.81	0.47	0.31
MW-36-24	6.80	7.58	9.05	NA	MW-60-35	1.63	0.82	2.04	1.99
MW-37-22	4.13	5.36	5.55	4.45	MW-62-18	0.13	0.06	-0.12	-0.82
MW-38	1.53	2.12	1.22	NA	MW-63-18	0.09	0.32	-0.08	-0.64
MW-39-67	31.69	25.96	25.21	28.74	MW-65-48	38.60	43.22	NA	48.19
MW-40-27	59.99	54.70	54.22	59.55	MW-66-21	0.05	0.17	0.29	0.33
MW-41-40	33.81	31.28	30.71	33.62	MW-67-39	0.36	0.41	0.02	0.07
MW-42-49	34.81	34.52	34.43	34.78	MW-107	113.94	115.00	115.76	120.28
MW-43-28	33.95	32.51	32.15	33.43	MW-108	10.07	NA	9.02	9.65
MW-44-66	35.47	35.29	34.00	34.96	MW-109	10.12	7.82	7.88	NA
MW-45-42	37.16	28.63	25.45	32.02	MW-111	11.24	9.74	10.48	10.87
MW-46	14.97	12.62	12.81	14.29	OUT1	0.81	NA	NA	NA
MW-47-57	31.53	22.84	22.37	26.51	U3-1	NA	NA	NA	NA
MW-48-23	-0.23	-0.18	-0.48	-0.91	U3-2	NA	NA	NA	NA
MW-49-26	0.51	0.37	0.49	-0.25	U3-3	9.25	8.25	8.94	9.13
MW-50-42	5.24	6.40	7.06	5.66	U3-4S	3.97	4.31	3.81	4.01
MW-51-40	52.35	49.44	49.24	49.32	U3-C1	0.99	2.36	0.81	0.64
MW-52-11	8.85	8.65	8.44	8.19	U3-T1	3.86	4.33	3.69	3.83
					U3-T2	3.94	4.28	3.76	4.05

DEEP GROUNDWATER ELEVATIONS AT LOW TIDE									
Well ID	GW Elevation (feet msl) Quarter 2 2008	Quarter 3 2008	Quarter 4 2008	Quarter 1 2009	Well ID	GW Elevation (feet msl) Quarter 2 2008	Quarter 3 2008	Quarter 4 2008	Quarter 1 2009
MW-30-69	12.28	11.77	11.71	12.33	MW-52-64	5.03	5.21	5.16	5.20
MW-32-149	10.04	9.71	9.77	10.00	MW-53-120	11.49	9.76	NA	10.55
MW-37-57	6.07	6.64	7.20	6.50	MW-54-123	3.52	4.01	4.06	2.99
MW-39-124	30.67	25.07	24.43	27.74	MW-59-68	-0.11	NA	-1.79	-5.66
MW-40-81	55.78	47.28	46.83	55.67	MW-60-55	-0.47	-0.90	-1.21	-1.91
MW-41-63	32.76	27.53	26.96	30.38	MW-62-92	-0.11	-0.10	-0.85	-1.68
MW-42-78	36.28	35.58	35.07	36.05	MW-63-112	1.69	1.60	2.26	3.14
MW-44-102	30.88	25.80	25.16	28.09	MW-65-80	54.97	52.95	52.72	55.71
MW-47-80	28.53	21.52	21.08	26.37	MW-67-105	0.57	0.65	0.16	-0.67
MW-51-135	40.71	38.10	37.68	39.75					

Notes
NA data not available
1 Quarter 2, 2008 groundwater elevations were measured on 4/4/08 at 5.14 pm
2 Quarter 3, 2008 groundwater elevations were measured on 7/10/08 at 11.35 am
3 Quarter 4, 2008 groundwater elevations were measured on 11/11/08 at 2.54 am
4 Quarter 1, 2009 groundwater elevations were measured on 01/09/09 at 2.42 am



LEGEND

- Boring / Monitoring Installation Designation
- Boring / Monitoring Installation
- Shallow Groundwater Contours 01/09/2009 (10' Interval)
- Shallow Groundwater Contours Other Than 10' Interval
- Deep Groundwater Contours 01/09/2009 (10' Interval)
- Stream Tubes

Notes

1 Groundwater contours developed using groundwater elevations measured on 01/09/2009 at low river tide
2 Shallow contours developed using elevations measured at the water table (phreatic) surface
3 Deep contours developed using piezometric elevations measured in screened intervals typically located 40 feet below the groundwater table
4 Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, PC , Dated 2/3/06, CAD file name "GZA.dwg"

50 25 0 50 100 150 Feet

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INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

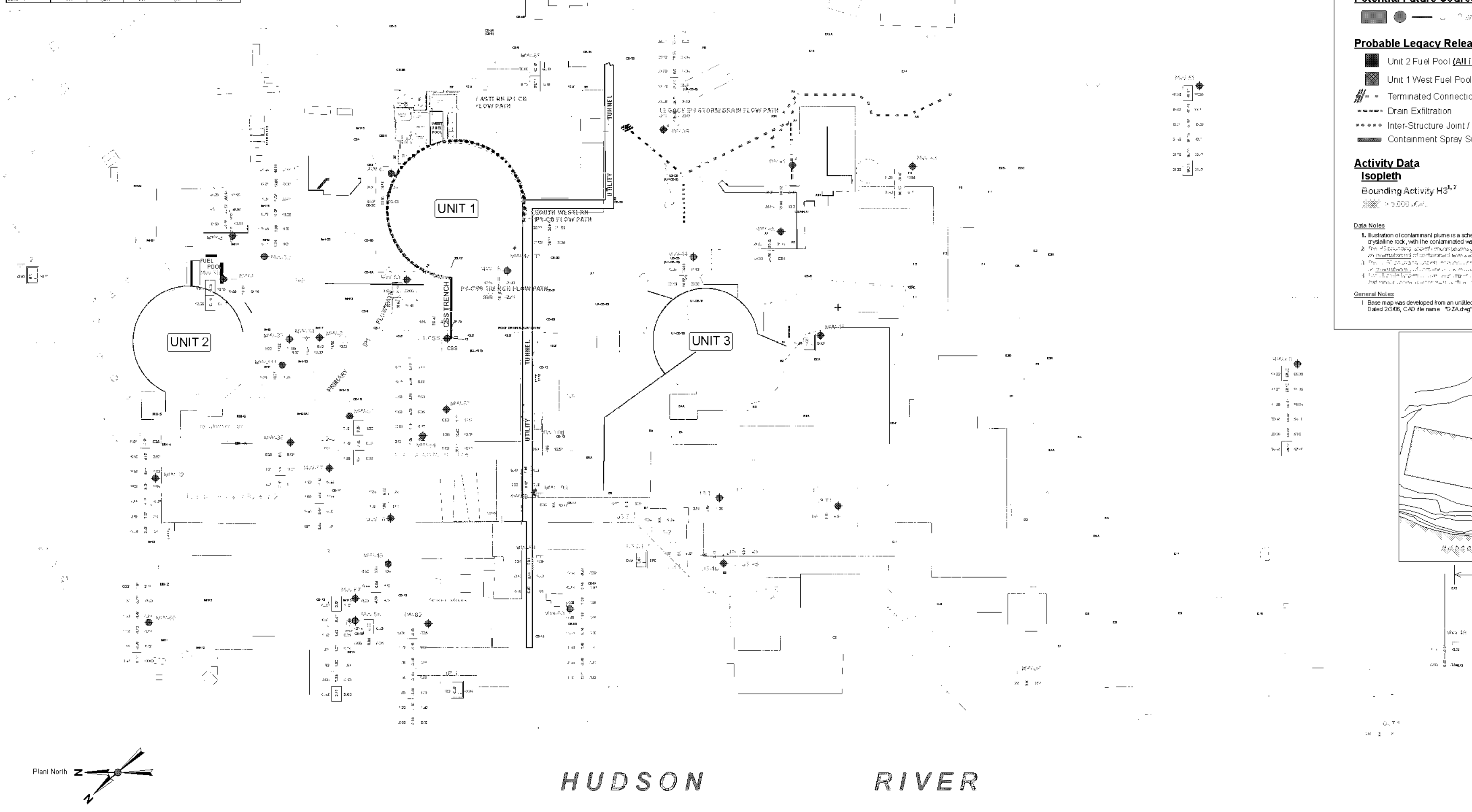
1st QUARTER 2009
SHALLOW AND DEEP
GROUNDWATER CONTOURS

Proj Mgr MJB Designed By MJB Reviewed By MJB Operator GAS	Dwg Date 07-24-2009 Job No 41 0017869 91	Figure No 5

J:\17,000-18,999\17869\17869-91.MJ\Figures\G SMXD Documents\Q1_2009\17869-91_Q1_2009_F05_Shallow-Deep_GWC.mxd

1st QUARTER 2009 LONGTERM TRANSDUCER MONITORING EVALUATION MAP

[illegible]	[illegible]



LEGEND

Monitoring Installations

Boring / Monitoring Installation Designation

Longterm **Radionuclide** Monitoring Installation

Standby **Radionuclide** Monitoring Installation

Multiple Screened Intervals w/ Depth

Transducer Monitored Interval

Interval no longer monitored with **Transducer**

Single level monitoring location with duplicate **Transducers** for redundancy* (Data from primary trans. shown)

Maximum quarterly groundwater elevation at time of low river tide measured between Q2 2007 and Q1 2009, inclusive

Minimum quarterly groundwater elevation at time of low river tide measured between Q2 2007 and Q1 2009, inclusive

Transducer Notes

* - For locations with multilevel depth monitoring, redundancy provided by monitoring more than one depth at same location

† - Redundant transducer data not available for Q1 09 given that the transducer redeployment plan not yet implemented

Potential Future Source Locations

Probable Legacy Release SSCs

Unit 2 Fuel Pool (All identified leaks repaired as of December 2007)

Unit 1 West Fuel Pool (All U1-SFPs drained and inactive as of October 2008)

Terminated Connection To Storm Drain

Drain Exfiltration

Inter-Structure Joint / Mud Mat

Containment Spray Sump Pipe Trench

Activity Data

Isopleth

Bounding Activity H3[1,2]

Bounding Activity SR90[1,3]

Data Notes

1. Illustration of contaminant plume is a schematic representation only. **In reality**, the geologic bedrock formation is over 99% solid, crystalline rock, with the contaminated water contained only in the remaining (less than 1%) interstitial space (i.e. fractures).

General Notes

1. Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, P.C., Dated 2/3/06, CAD file name "GZA.dwg"

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INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

1st QUARTER 2009
LONGTERM TRANSDUCER
MONITORING EVALUATION MAP

Proj Mgr MJB
Designed By MJB
Reviewed By MJB
Operator GAS

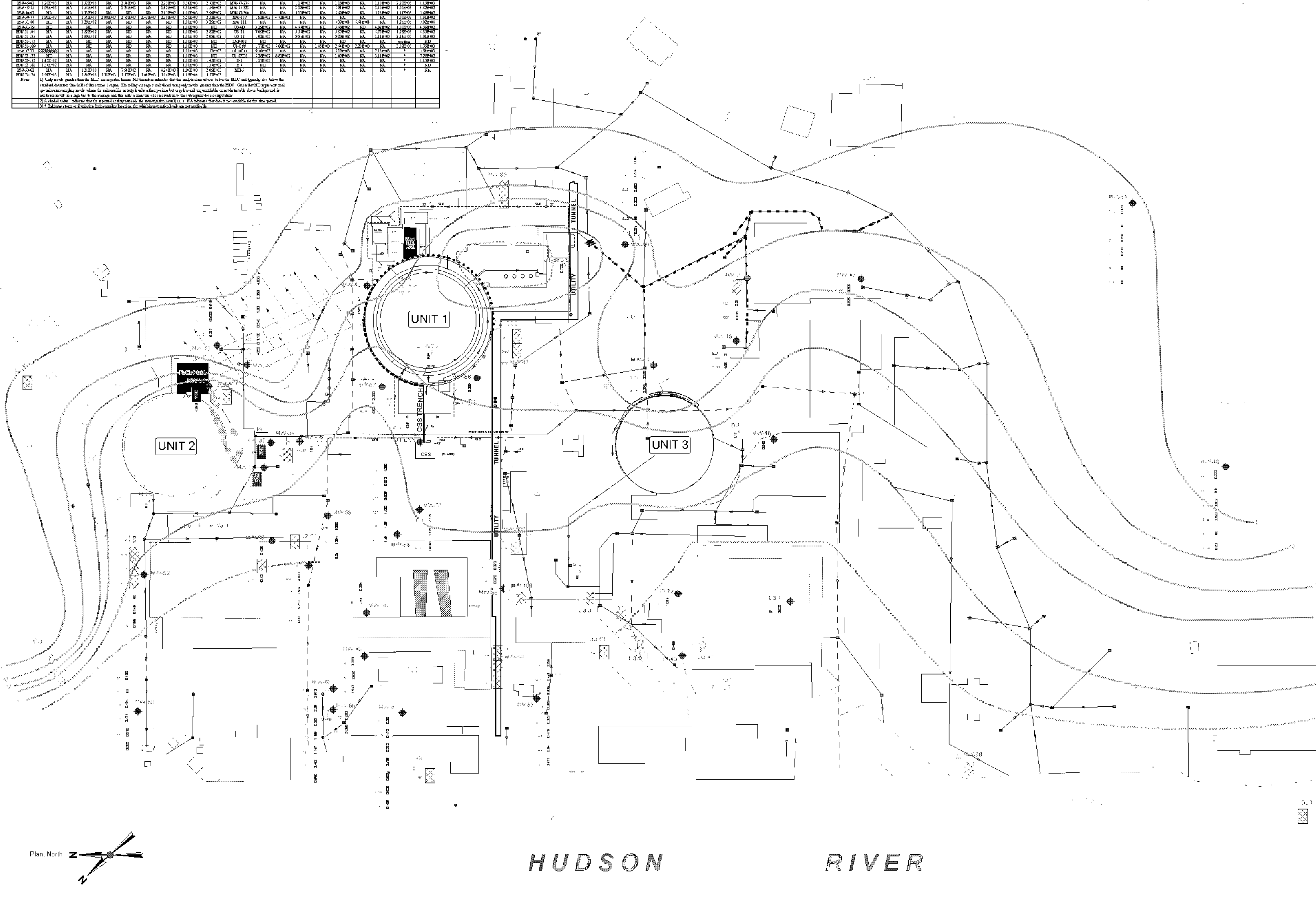
Dwg Date 06-16-2010
Job No 01 0017869 92
Figure No **5A**

1st QUARTER 2009 ROLLING AVERAGE[1] TRITIUM ACTIVITY MAP

Well ID	Quarter 2 2008	Re-count Quarter 2 2008	Quarter 3 2008	Re-count Quarter 3 2008	Quarter 4 2008	Re-count Quarter 4 2008	Quarter 1 2009	Investigation Level	Rolling Annual Average
MW-30-69	1.53E+05	7.36E+04	1.99E+05	8.53E+04	9.55E+04	NA	1.07E+05	2.64E+05	1.19E+05
MW-30-84	4.18E+03	3.80E+03	4.31E+03	3.78E+03	5.25E+03	NA	4.69E+03	8.57E+03	4.34E+03
MW-31-49	[illegible]	NA	5.94E+02	1.36E+04	6.43E+02	7.77E+02	1.11E+04	1.55E+04	9.52E+03
MW-31-63	1.07E+04	NA	1.76E+04	2.21E+04	2.30E+04	2.55E+04	1.28E+04	3.69E+04	1.83E+04
MW-31-85	5.93E+03	NA	2.30E+03	8.34E+03	3.89E+03	4.41E+03	7.37E+03	8.73E+03	5.38E+03
MW-32-59	4.15E+03	2.80E+03	1.54E+03	2.44E+03	4.13E+02	NA	[illegible]	1.00E+04	4.82E+03
MW-32-85	8.36E+03	1.11E+04	7.48E+03	8.05E+03	8.67E+03	NA	6.54E+03	1.81E+04	8.36E+03
MW-32-131	1.03E+03	NA	NA	NA	NA	NA	NA	1.53E+03	1.03E+03
MW-32-149	8.83E+02	NA	5.32E+02	NA	5.08E+02	NA	2.65E+02	1.53E+03	5.46E+02
MW-32-173	1.69E+03	NA	1.08E+03	9.77E+02	1.03E+03	NA	7.56E+02	3.27E+03	1.11E+03
MW-32-190	6.73E+03	NA	4.71E+03	3.81E+03	3.35E+03	NA	2.69E+03	1.10E+04	4.26E+03
MW-33	5.80E+04	NA	NA	6.80E+04	NA	NA	NA	1.27E+05	6.33E+04
MW-35	1.04E+03	NA	NA	NA	NA	NA	NA	2.08E+03	1.04E+03
MW-36-24	NA	NA	1.02E+03	NA	2.01E+02	NA	2.37E+02	2.25E+03	4.86E+02
MW-36-52	NA	NA	1.26E+04	NA	1.10E+04	NA	6.79E+03	2.33E+04	1.01E+04
MW-37-22	NA	NA	4.33E+03	NA	2.68E+03	NA	5.27E+03	9.07E+03	4.09E+03
MW-37-32	NA	NA	5.16E+03	NA	2.89E+03	NA	3.76E+03	9.87E+03	3.94E+03
MW-37-40	NA	NA	5.74E+03	NA	5.49E+03	NA	4.91E+03	1.16E+04	5.21E+03
MW-37-57	NA	NA	5.33E+03	NA	4.77E+03	NA	5.04E+03	1.08E+04	4.88E+03
MW-39-67	3.18E+02	NA	NA	NA	4.15E+02	NA	NA	1.00E+03	3.67E+02
MW-39-84	ND	NA	NA	NA	2.34E+02	NA	NA	1.00E+03	2.34E+02
MW-39-102	5.03E+02	NA	NA	NA	ND	NA	NA	1.01E+03	5.03E+02
MW-39-124	2.15E+02	NA	NA	NA	2.31E+02	NA	NA	1.00E+03	2.23E+02
MW-39-183	ND	NA	NA	NA	ND	NA	NA	1.00E+03	ND
MW-39-195	2.74E+02	NA	NA	NA	ND	NA	NA	1.00E+03	2.74E+02
MW-40-27	NA	NA	2.22E+02	NA	ND	NA	1.20E+02	1.00E+03	2.22E+02
MW-40-46	NA	NA	ND	NA	ND	NA	ND	1.00E+03	ND
MW-40-81	NA	NA	2.42E+02	NA	ND	NA	1.61E+02	1.00E+03	2.07E+02
MW-40-100	ND	NA	1.93E+02	NA	ND	NA	ND	1.00E+03	1.93E+02
MW-40-127	ND	NA	ND	NA	ND	NA	ND	1.00E+03	ND
MW-40-162	NA	NA	2.30E+02	NA	ND	NA	ND	1.00E+03	2.30E+02
MW-41-40	NA	NA	NA	NA	2.21E+03	NA	NA	2.43E+03	2.21E+03
MW-41-63	NA	NA	NA	NA	6.91E+02	NA	NA	1.00E+03	6.91E+02
MW-42-49	3.74E+03	NA	3.16E+03	1.37E+04	7.40E+03	1.17E+03	1.78E+03	8.71E+03	4.10E+03
MW-42-78	NA	NA	6.18E+02	NA	5.62E+02	NA	3.65E+02	1.02E+03	5.15E+02
MW-43-28	NA	NA	NA	NA	2.65E+02	NA	NA	1.00E+03	2.65E+02
MW-43-62	NA	NA	NA	NA	2.75E+02	NA	NA	1.00E+03	2.75E+02
MW-44-66	1.61E+02	NA	5.30E+02	NA	3.18E+02	NA	2.06E+02	1.00E+03	3.38E+02
MW-44-102	2.56E+02	NA	4.37E+02	NA	4.05E+02	NA	2.57E+02	1.00E+03	3.56E+02
MW-45-42	1.13E+03	NA	2.37E+03	NA	3.16E+03	NA	1.41E+03	4.07E+03	2.00E+03
MW-45-61	2.21E+03	NA	1.80E+03	NA	1.27E+03	NA	1.36E+03	3.97E+03	1.66E+03
MW-46	5.21E+02	NA	7.71E+02	NA	1.38E+03	NA	1.00E+03	1.61E+03	9.18E+02
MW-49-26	5.00E+03	NA	3.96E+03	NA	3.47E+03	NA	3.10E+03	8.37E+03	3.88E+03
MW-49-42	3.20E+03	NA	2.57E+03	NA	2.54E+03	NA	2.25E+03	5.54E+03	2.63E+03
MW-49-65	1.93E+03	NA	1.56E+03	NA	1.26E+03	NA	1.42E+03	3.30E+03	1.54E+03
MW-50-42	NA	NA	3.73E+02	NA	ND	NA	2.15E+02	1.00E+03	2.94E+02
MW-50-66	2.80E+03	NA	2.71E+03	2.08E+03	2.73E+03	2.43E+03	2.30E+03	5.50E+03	2.51E+03
MW-51-40	ND	NA	3.29E+02	NA	ND	NA	ND	1.00E+03	3.29E+02
MW-51-79	ND	NA	NT	NA	ND	NA	ND	1.00E+03	ND
MW-51-104	NA	NA	2.82E+02	NA	ND	NA	ND	1.00E+03	2.82E+02
MW-51-135	NA	NA	2.09E+02	NA	ND	NA	ND	1.00E+03	2.09E+02
MW-51-163	NA	NA	NT	NA	ND	NA	ND	1.00E+03	ND
MW-51-189	NA	NA	NT	NA	ND	NA	ND	1.00E+03	ND
MW-52-11	1.13E+03	NA	NA	NA	NA	NA	NA	1.00E+03	1.13E+03
MW-52-177	ND	NA	NA	NA	NA	NA	NA	1.00E+03	ND
MW-52-162	1.45E+02	NA	NA	NA	NA	NA	NA	1.00E+03	1.45E+02
MW-52-181	1.56E+02	NA	NA	NA	NA	NA	NA	1.00E+03	1.56E+02
MW-53-82	NA	NA	1.21E+03	NA	7.94E+02	NA	4.24E+03	1.96E+03	2.09E+03
MW-53-120	5.91E+03	NA	5.80E+03	5.76E+03	5.57E+03	5.04E+03	5.06E+03	1.19E+04	5.57E+03

Well ID	Quarter 2 2008	Re-count Quarter 2 2008	Quarter 3 2008	Re-count Quarter 3 2008	Quarter 4 2008	Re-count Quarter 4 2008	Quarter 1 2009	Investigation Level	Rolling Annual Average
MW-54-37	8.70E+02	NA	9.50E+02	NA	1.25E+03	NA	1.16E+03	2.07E+03	1.06E+03
MW-54-58	7.33E+02	NA	5.76E+02	NA	6.98E+02	NA	6.82E+02	1.33E+03	6.73E+02
MW-54-123	6.98E+02	NA	6.12E+02	NA	5.80E+02	NA	5.31E+02	1.21E+03	6.05E+02
MW-54-144	1.15E+03	NA	1.13E+03	NA	1.16E+03	NA	1.13E+03	2.41E+03	1.14E+03
MW-54-173	2.11E+03	NA	2.05E+03	NA	1.66E+03	NA	1.98E+03	3.83E+03	1.93E+03
MW-54-190	1.84E+03	NA	1.25E+03	NA	1.44E+03	NA	1.43E+03	3.39E+03	1.49E+03
MW-55-24	1.05E+03	NA	1.40E+03	NA	7.62E+02	NA	1.04E+03	2.19E+03	1.07E+03
MW-55-35	1.60E+03	NA	1.73E+03	NA	NA	NA	8.53E+02	3.77E+03	1.39E+03
MW-55-54	5.96E+03	NA	6.31E+03	NA	7.76E+03	NA	7.33E+03	1.38E+04	6.84E+03
MW-56-53	NA	NA	NA	NA	3.99E+02	NA	NA	1.00E+03	3.99E+02
MW-56-83	NA	NA	NA	NA	2.98E+03	NA	NA	4.92E+03	2.98E+03
MW-57-11	2.10E+03	NA	NA	NA	3.28E+03	NA	NA	5.45E+03	2.73E+03
MW-57-20	7.27E+02	NA	NA	NA	1.51E+03	NA	NA	2.24E+03	1.12E+03
MW-57-45	5.65E+02	NA	NA	NA	1.13E+03	NA	NA	1.70E+03	8.48E+02
MW-58-26	NA	NA	NA	NA	2.38E+02	NA	5.19E+02	1.00E+03	3.79E+02
MW-58-65	NA	NA	NA	NA	2.81E+02	NA	2.75E+02	1.00E+03	2.78E+02
MW-60-35	ND	NA	1.95E+02	NA	ND	NA	2.00E+02	2.00E+03	1.98E+02
MW-60-53	ND	NA	ND	NA	ND	NA	ND	2.00E+03	ND
MW-60-72	ND	NA	ND	NA	1.94E+02	NA	ND	2.00E+03	1.94E+02
MW-60-135	5.83E+02	NA	4.91E+02	NA	4.25E+02	NA	3.83E+02	2.00E+03	4.71E+02
MW-60-154	4.53E+02	NA	5.16E+02	NA	6.87E+02	NA	4.15E+02	2.00E+03	5.18E+02
MW-60-176	7.77E+02	NA	8.95E+02	NA	8.37E+02	NA	9.16E+02	2.00E+03	8.53E+02
MW-62-18	NA	NA	2.69E+02	NA	4.08E+02	NA	4.64E+02	2.00E+03	3.80E+02
MW-62-37	NA	NA	3.94E+02	NA	5.30E+02	NA	4.87E+02	2.00E+03	4.72E+02
MW-62-53	NA	NA	3.57E+02	NA	4.08E+02	NA	3.56E+02	2.00E+03	3.73E+02
MW-62-71	NA	NA	4.64E+02	NA	5.12E+02	NA	2.99E+02	2.00E+03	4.25E+02
MW-62-92	NA	NA	4.90E+02	NA	4.82E+02	NA	5.25E+02	2.00E+03	5.01E+02
MW-62-138	NA	NA	5.33E+02	NA	7.50E+02	NA	6.26E+02	2.00E+03	6.36E+02
MW-62-182	NA	NA	3.99E+02	NA	4.98E+02	NA	4.98E+02	2.00E+03	4.65E+02
MW-63-18	2.55E+02	NA	ND	NA	3.20E+02	NA	ND	2.00E+03	2.89E+02
MW-63-34	4.90E+02	NA	4.41E+02	NA	4.14E+02	NA	4.70E+02	2.00E+03	4.41E+02
MW-63-50	2.70E+02	NA	3.35E+02	NA	3.17E+02	NA	2.98E+02	2.00E+03	3.05E+02
MW-63-93	3.02E+02	NA	2.38E+02	NA	3.90E+02	NA	3.40E+02	2.00E+03	3.18E+02
MW-63-112	3.72E+02	NA	2.07E+02	NA	2.75E+02	NA	4.37E+02	2.00E+03	3.23E+02
MW-63-121	4.54E+02	NA	3.44E+02	NA	4.95E+02	NA	6.23E+02	2.00E+03	4.79E+02
MW-63-163	4.44E+02	NA	4.48E+02	NA	6.80E+02	NA	5.81E+02	2.00E+03	5.40E+02
MW-63-174	4.89E+02	NA	4.49E+02	NA	4.77E+02	NA	4.92E+02	2.00E+03	4.77E+02
MW-66-21	9.53E+02	NA	7.83E+02	NA	5.34E+02	NA	4.61E+02	1.54E+03	6.83E+02
MW-66-36	6.09E+03	NA	5.01E+03	NA	5.44E+03	NA	3.65E+03	1.19E+04	5.05E+03
MW-67-39	NA	NA	3.87E+03	NA	3.18E+03	NA	3.67E+03	7.48E+03	3.57E+03
MW-67-105	NA	NA	2.16E+03	NA	2.98E+03	NA	1.96E+03	4.95E+03	2.35E+03
MW-67-173	NA	NA	9.12E+02	NA	9.98E+02	NA	5.57E+02	1.90E+03	8.8?E+02
MW-67-219	NA	NA	1.17E+03	NA	1.37E+03	NA	9.68E+02	2.51E+03	1.17E+03
MW-67-276	NA	NA	1.16E+03	NA	1.18E+03	NA	1.10E+03	2.27E+03	1.15E+03
MW-67-323	NA	NA	3.38E+02	NA	6.84E+02	NA	3.65E+02	1.00E+03	4.62E+02
MW-67-340	NA	NA	5.11E+02	NA	6.09E+02	NA	5.23E+02	1.11E+03	5.68E+02
MW-107	1.91E+02	4.67E+01	NA	NA	NA	NA	NA	1.00E+03	1.91E+02
MW-111	NA	NA	NA	NA	7.39E+04	6.64E+04	NA	1.25E+05	7.02E+04
U3-4D	3.19E+02	NA	4.66E+02	NT	5.68E+02	ND	4.82E+02	1.00E+03	4.59E+02
U3-T1	7.09E+02	NA	5.56E+02	NA	5.99E+02	NA	6.75E+02	1.28E+03	6.35E+02
U3-T2	1.02E+03	NA	9.97E+02	NA	9.78E+02	NA	1.11E+03	2.14E+03	1.01E+03
LAF-002	ND	NA	NA	NA	ND	NA	NA	positive	ND
U1-CSS	1.77E+03	6.88E+02	NA	1.45E+03	2.66E+03	2.20E+03	NA	3.09E+03	1.75E+03
U1-NCD	9.50E+03	NA	NA	NA	6.19E+03	NA	2.13E+03	*	5.94E+03
U1-SFDS	6.78E+02	8.81E+02	NA	NA	1.09E+03	NA	3.11E+02	*	7.28E+02
B-1	1.17E+03	NA	NA	NA	NA	NA	NA	*	1.17E+03
B-6	ND	NA	NA	NA	NA	NA	NA	*	ND
MH-5	NA	NA	NA	NA	NA	NA	NA	*	NA

Notes
1) Only results greater than the MDC are reported herein. ND therefore indicates that the analytical result was below the MDC and typically also below the standard deviation threshold of three times 1 sigma. The rolling average is calculated using only results greater than the MDC. Given that ND represents real groundwater sampling results where the radionuclide activity level is either positive but very low and unquantifiable, or not detectable above background, its exclusion results in a high bias to the average and thus adds a measure of conservatism to the subsequent dose computations.
2) A shaded value indicates that the reported activity exceeds the Investigation Level (I.L.). NA indicates that data is not available for this time period.
3) * Indicates storm or foundation drain sampling locations, for which investigation levels are not applicable.



LEGEND

- Boring / Monitoring Installation Designation
- Longterm Radionuclide Monitoring Installation
- Standby Radionuclide Monitoring Installation
- Active Storm Drain
- Abandoned Storm Drain
- Catch Basin
- Footing Drain

Probable Legacy Release Locations

- Unit 2 Fuel Pool (All identified leaks repaired as of December 2007)
- Unit 1 West Fuel Pool (All U1-SFPs drained and inactive as of October 2008)
- Terminated Connection To Storm Drain
- Drain Exfiltration
- Inter-Structure Joint / Mud Mat
- Containment Spray Sump Trench

Depth-Specific Data

Average activity of H3 (pCi/L x1000) for each screened interval
Depth
Multiple Screened Intervals
Screened in Soil
Screened in Bedrock
Groundwater elevation for each screened interval at time of lowest tide on 1/09/2009

Activity Data[1,2]

Bar Graphs; Average H3, pCi/L
- No Depth-Specific Samples
- Not Detected (ND)
- ND - 1,000
- 1,000 - 5,000
- 5,000 - 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000

Isopleths; Average H3, pCi/L
- 5,000 - 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- > 100,000

Groundwater Elevation Contours

- Ambient "Watertable" Contours 1/09/2009 (10' Interval)
- Contours Other Than 10' Interval
- Vadose Zone Contaminant Transport

Note
Groundwater contours developed from limited data available on 1/09/2009. Actual elevations may vary from conditions shown and the actual distribution of piezometric heads is likely more complex than indicated.

General Notes
1. Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, P.C., dated 2/3/06. CAD file name "GZA.dwg".

50 25 0 50 100 150 Feet

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One Edgewater Drive
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Phone (781) 278-3700 Fax (781) 278-5701

INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

1st QUARTER 2009 ROLLING AVERAGE TRITIUM ACTIVITY[1] MAP

Proj Mgr: MJB
Designed By: MJB
Reviewed By: MJB
Operator: GAS
Dwg Date: 06-16-2010
Job No: 41 001/869 91
Figure No: 6

1st QUARTER 2009 ROLLING AVERAGE[1] STRONTIUM-90 ACTIVITY MAP

Well ID	Strontium-90 Results (pCi/L) Quarter 2 2008	2nd Quarter 2 2008	Quarter 3 2008	2nd Quarter 3 2008	Quarter 4 2008	2nd Quarter 4 2008	Quarter 1 2009	Investigation Level	Rolling Annual Average	Well ID	Quarter 2 2008	2nd Quarter 2 2008	Quarter 3 2008	2nd Quarter 3 2008	Quarter 4 2008	2nd Quarter 4 2008	Quarter 1 2009	Investigation Level	Rolling Annual Average
MW-30-69	ND	ND	ND	ND	ND	NA	ND	2.00E+00	ND	MW-54-37	5.08E+00	NA	6.20E+00	NA	7.33E+00	NA	5.98E+00	1.22E+01	6.14E+00
MW-30-84	ND	ND	ND	ND	ND	NA	ND	2.00E+00	ND	MW-54-58	1.69E+00	NA	1.71E+00	NA	9.02E+00	NA	1.98E+00	7.37E+00	3.60E+00
MW-31-49	ND	NA	ND	ND	ND	NE	ND	2.00E+00	ND	MW-54-123	6.43E+00	NA	6.52E+00	NA	1.20E+01	NA	5.94E+00	1.76E+01	7.87E+00
MW-31-63	ND	NA	ND	ND	ND	NE	ND	2.00E+00	ND	MW-54-144	1.59E+01	NA	1.69E+01	NA	2.07E+01	NA	1.44E+01	3.42E+01	1.69E+01
MW-31-85	ND	NA	ND	ND	ND	NE	ND	2.00E+00	ND	MW-54-173	1.22E+01	NA	1.29E+01	NA	1.61E+01	NA	1.02E+01	2.77E+01	1.29E+01
MW-32-59	ND	ND	ND	ND	ND	NA	ND	2.00E+00	ND	MW-54-190	1.95E+01	NA	2.13E+01	NA	3.38E+01	NA	1.90E+01	4.70E+01	2.34E+01
MW-32-85	ND	ND	ND	ND	ND	NA	ND	2.00E+00	ND	MW-55-24	2.55E+01	NA	2.22E+01	NA	1.08E+01	NA	1.89E+01	4.06E+01	1.89E+01
MW-32-131	ND	NA	NA	NA	NA	NA	NA	2.00E+00	ND	MW-55-35	3.44E+01	NA	2.34E+01	NA	NA	NA	1.71E+01	5.75E+01	2.54E+01
MW-32-149	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-55-54	2.67E+01	NA	2.32E+01	NA	1.94E+01	NA	2.11E+01	4.61E+01	2.26E+01
MW-32-173	ND	NA	ND	ND	ND	NA	ND	2.00E+00	ND	MW-56-53	NA	NA	NA	NA	ND	NA	NA	2.00E+00	ND
MW-32-190	ND	NA	ND	ND	ND	NA	ND	2.00E+00	ND	MW-56-83	NA	NA	NA	NA	2.13E+00	NA	NA	3.69E+00	2.13E+00
MW-33	ND	NA	NA	ND	NA	NA	NA	2.00E+00	ND	MW-57-11	2.27E+01	NA	NA	NA	4.16E+01	NA	NA	6.43E+01	3.22E+01
MW-35	ND	NA	NA	NA	NA	NA	NA	2.00E+00	ND	MW-57-20	1.23E+00	NA	NA	NA	3.06E+00	NA	NA	4.29E+00	2.15E+00
MW-36-24	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-57-45	2.26E+00	NA	NA	NA	1.20E+00	NA	NA	3.46E+00	1.73E+00
MW-36-52	NA	NA	5.67E+00	NA	8.27E+00	NA	3.37E+00	1.25E+01	5.77E+00	MW-58-26	NA	NA	NA	NA	ND	NA	NE	2.00E+00	ND
MW-37-22	NA	NA	1.27E+01	NA	1.80E+01	NA	8.81E+00	2.60E+01	1.30E+01	MW-58-65	NA	NA	NA	NA	ND	NA	NE	2.00E+00	ND
MW-37-32	NA	NA	2.04E+01	NA	1.86E+01	NA	1.11E+01	3.43E+01	1.68E+01	MW-60-35	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-37-40	NA	NA	1.31E+00	NA	1.13E+00	NA	[illegible]	2.26E+00	1.97E+00	MW-60-53	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-37-57	NA	NA	2.17E+01	NA	2.40E+01	NA	1.99E+01	4.94E+01	2.17E+01	MW-60-72	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-39-67	2.21E+00	NA	NA	NA	3.31E+00	NA	NA	6.03E+00	2.76E+00	MW-60-135	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-39-84	2.23E+00	NA	NA	NA	1.04E+00	NA	NA	3.37E+00	1.64E+00	MW-60-154	ND	NA	5.10E-01	NA	ND	NA	NE	2.00E+00	5.10E-01
MW-39-102	8.88E-01	NA	NA	NA	1.23E+00	NA	NA	2.07E+00	1.06E+00	MW-60-176	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-39-124	1.79E+00	NA	NA	NA	9.42E-01	NA	NA	2.81E+00	1.37E+00	MW-62-18	NA	NA	5.51E-01	NA	ND	NA	1.09E+00	2.00E+00	8.21E-01
MW-39-183	1.12E+00	NA	NA	NA	ND	NA	NA	2.00E+00	1.12E+00	MW-62-37	NA	NA	ND	NA	1.36E+00	NA	NE	2.00E+00	1.36E+00
MW-39-195	1.21E+00	NA	NA	NA	8.81E-01	NA	NA	2.00E+00	1.05E+00	MW-62-53	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-40-27	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-62-71	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-40-46	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-62-92	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-40-81	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-62-138	NA	NA	1.21E+00	NA	1.24E+00	NA	2.46E+00	2.00E+00	1.64E+00
MW-40-100	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-62-182	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-40-127	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-63-18	ND	NA	3.29E+00	NA	ND	NA	NE	2.00E+00	3.29E+00
MW-40-162	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-63-34	ND	NA	1.15E+00	NA	ND	NA	NE	2.00E+00	1.15E+00
MW-41-40	NA	NA	NA	NA	5.91E+00	NA	NA	8.94E+00	5.91E+00	MW-63-50	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-41-63	NA	NA	NA	NA	5.69E+00	NA	NA	9.45E+00	5.69E+00	MW-63-93	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-42-49	2.36E+01	NA	3.56E+01	[illegible]	9.61E+01	1.02E+02	[illegible]	1.94E+02	2.05E+02	MW-63-112	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-42-78	NA	NA	5.91E-01	NA	ND	NA	ND	2.00E+00	5.91E-01	MW-63-121	ND	NA	7.40E-01	NA	ND	NA	7.50E-01	2.00E+00	7.45E-01
MW-43-28	NA	NA	NA	NA	ND	NA	NA	2.00E+00	ND	MW-63-163	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-43-62	NA	NA	NA	NA	ND	NA	NA	2.00E+00	ND	MW-63-174	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-44-66	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-66-21	1.01E+00	NA	9.07E-01	NA	1.03E+00	NA	NE	2.02E+00	9.82E-01
MW-44-102	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-66-36	1.32E+01	NA	1.20E+01	NA	1.38E+01	NA	1.22E+01	2.71E+01	1.28E+01
MW-45-42	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-67-39	NA	NA	1.37E+01	NA	1.62E+01	NA	1.42E+01	3.36E+01	1.47E+01
MW-45-61	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-67-105	NA	NA	9.63E-01	NA	1.11E+00	NA	NE	2.14E+00	1.04E+00
MW-46	ND	NA	ND	NA	9.33E-01	NA	ND	2.00E+00	9.33E-01	MW-67-173	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-49-26	1.81E+01	NA	1.62E+01	NA	1.53E+01	NA	1.38E+01	3.63E+01	1.59E+01	MW-67-219	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-49-42	2.35E+01	NA	2.16E+01	NA	2.16E+01	NA	2.07E+01	4.80E+01	2.18E+01	MW-67-276	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-49-65	1.90E+01	NA	1.78E+01	NA	1.72E+01	NA	1.78E+01	4.07E+01	1.78E+01	MW-67-323	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-50-42	NA	NA	9.28E+00	NA	2.56E+00	NA	1.96E+00	9.49E+00	4.60E+00	MW-67-340	NA	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-50-66	3.58E+01	NA	3.30E+01	3.23E+01	3.20E+01	4.39E+01	2.70E+01	7.23E+01	3.48E+01	MW-107	ND	ND	NA	NA	NA	NA	NA	2.00E+00	ND
MW-51-40	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	MW-111	NA	NA	NA	NA	1.02E+00	NE	NA	3.58E+00	1.02E+00
MW-51-79	ND	NA	ND	NA	ND	NA	ND	2.00E+00	ND	U3-4D	ND	NA	ND	NA	ND	NA	NE	2.00E+00	ND
MW-51-104	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	U3-T1	ND	NA	ND	NA	7.01E-01	NA	1.04E+00	2.00E+00	8.71E-01
MW-51-135	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	U3-T2	6.52E-01	NA	ND	NA	ND	NA	NE	2.00E+00	6.52E-01
MW-51-163	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	LAF-002	ND	NA	NA	NA	ND	NA	NA	positive	ND
MW-51-189	NA	NA	ND	NA	ND	NA	ND	2.00E+00	ND	U1-CSS	6.74E+00	4.88E+00	NA	9.58E+00	6.74E+00	9.08E+00	NA	1.48E+01	7.53E+00
MW-52-11	ND	NA	NA	NA	NA	NA	NA	2.00E+00	ND	U1-NCD	NA	NA	NA	NA	NA	NA	4.64E+02	*	4.64E+02
MW-52-122	ND	NA	NA	NA	NA	NA	NA	2.00E+00	ND	U1-SFDS	NA	NA	NA	NA	NA	NA	1.22E+01	*	1.22E+01
MW-52-162	1.05E+00	NA	NA	NA	NA	NA	NA	2.00E+00	1.05E+00	B-1	ND	NA	NA	NA	NA	NA	NA	*	ND
MW-52-181	ND	NA	NA	NA	NA	NA	NA	2.00E+00	ND	B-6	ND	NA	NA	NA	NA	NA	NA	*	ND
MW-53-82	NA	NA	6.95E-01	NA	ND	NA	[illegible]	2.00E+00	1.50E+00	MH-5	NA	NA	NA	NA	NA	NA	NA	*	NA
MW-53-120	3.11E+01	NA	3.03E+01	3.10E+01	2.53E+01	4.25E+01	2.74E+01	6.38E+01	3.11E+01										

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1) Only results greater than the MDC are reported herein. ND therefore indicates that the analytical result was below the MDC and typically also below the standard deviation threshold of three times 1 sigma. The rolling average is calculated using only results greater than the MDC. Given that ND represents groundwater sampling results where the radionuclide activity level is either positive but very low and unquantifiable, or not detectable at or [illegible] exclusion results in a high bias to the average and thus adds a measure of conservatism to the subsequent dose computations.
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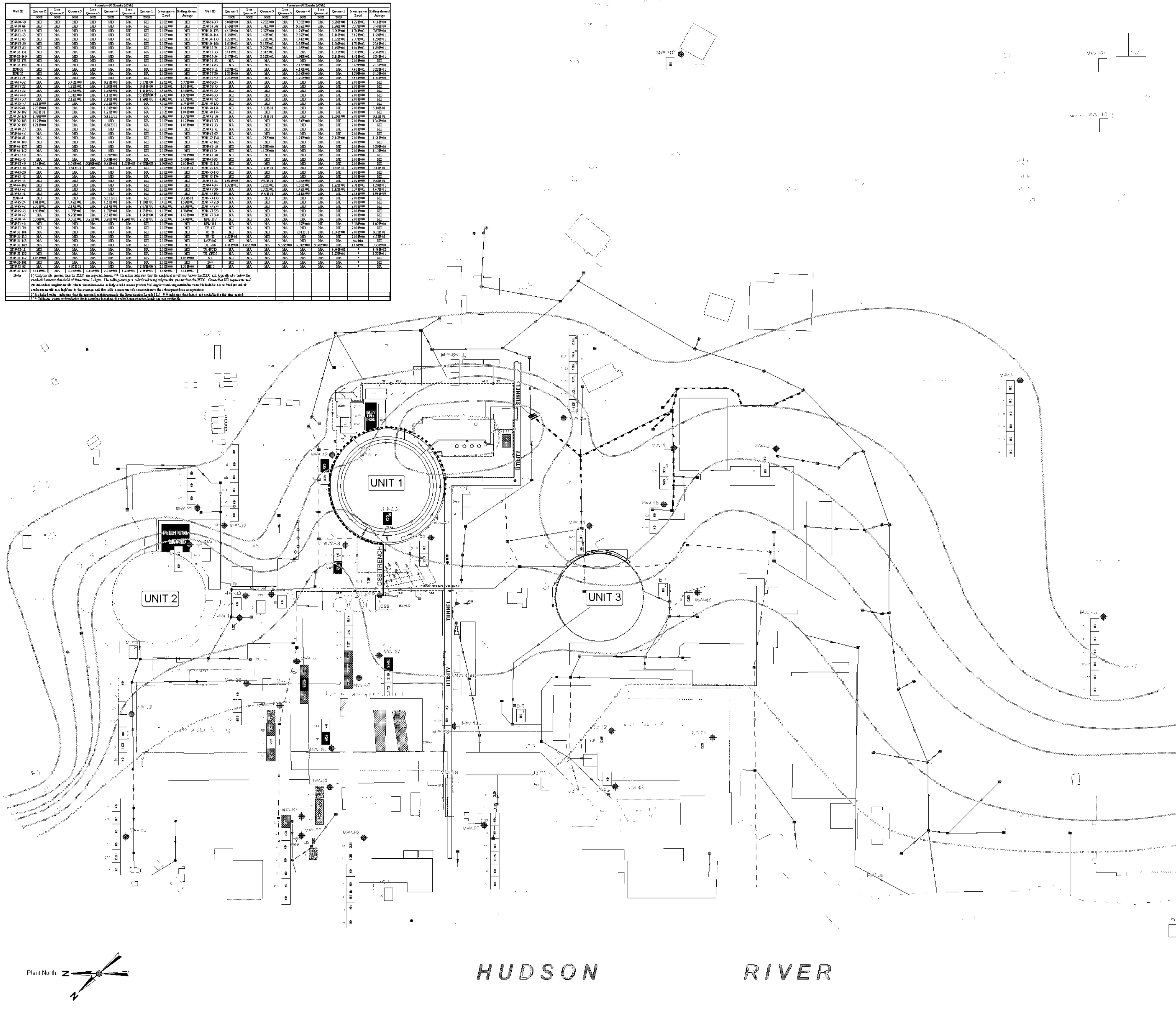

LEGEND

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Standby Radionuclide Monitoring Installation
Active Storm Drain
Abandoned Storm Drain
Catch Basin
Footing Drain

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Unit 1 West Fuel Pool (All U1-SFPs drained and inactive as of October 2008)
Terminated Connection To Storm Drain
Drain Exfiltration
Inter-Structure Joint / Mud Mat
Containment Spray Sump Trench

Depth-Specific Data

Average activity of Sr90 (pCi/L) for each screened interval
Multiple Screened Intervals w/ Depth
Screened in Soil
Screened in Bedrock
Groundwater elevation for each screened interval at the time of low river tide on 01/09/2009

Activity Data[1,2]

Bar Graphs; Average Sr-90, pCi/L: No Sample; Not Detected (ND); ND - 1; 1.0 - 2.0; 2.0 - 4.0; 4.0 - 8.0; 8.0 - 25; > 25

Isopleths; Average Sr-90, pCi/L: 2 - 4; 4 - 8; 8 - 25; > 25

Groundwater Elevation Contours

Ambient "Watertable" Contours 01/09/2009 (10' Interval)
Contours Other Than 10' Interval
Vadose Zone Contaminant Transport

Note: Groundwater contours developed from limited data available on 01/09/2009. Actual elevations may vary from conditions shown and the actual distribution of piezometric heads is likely more complex than indicated.

General Notes
1. Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, P.C., Dated 2/3/06. CAD file name "GZA.dwg"

50 25 0 50 100 150 Feet

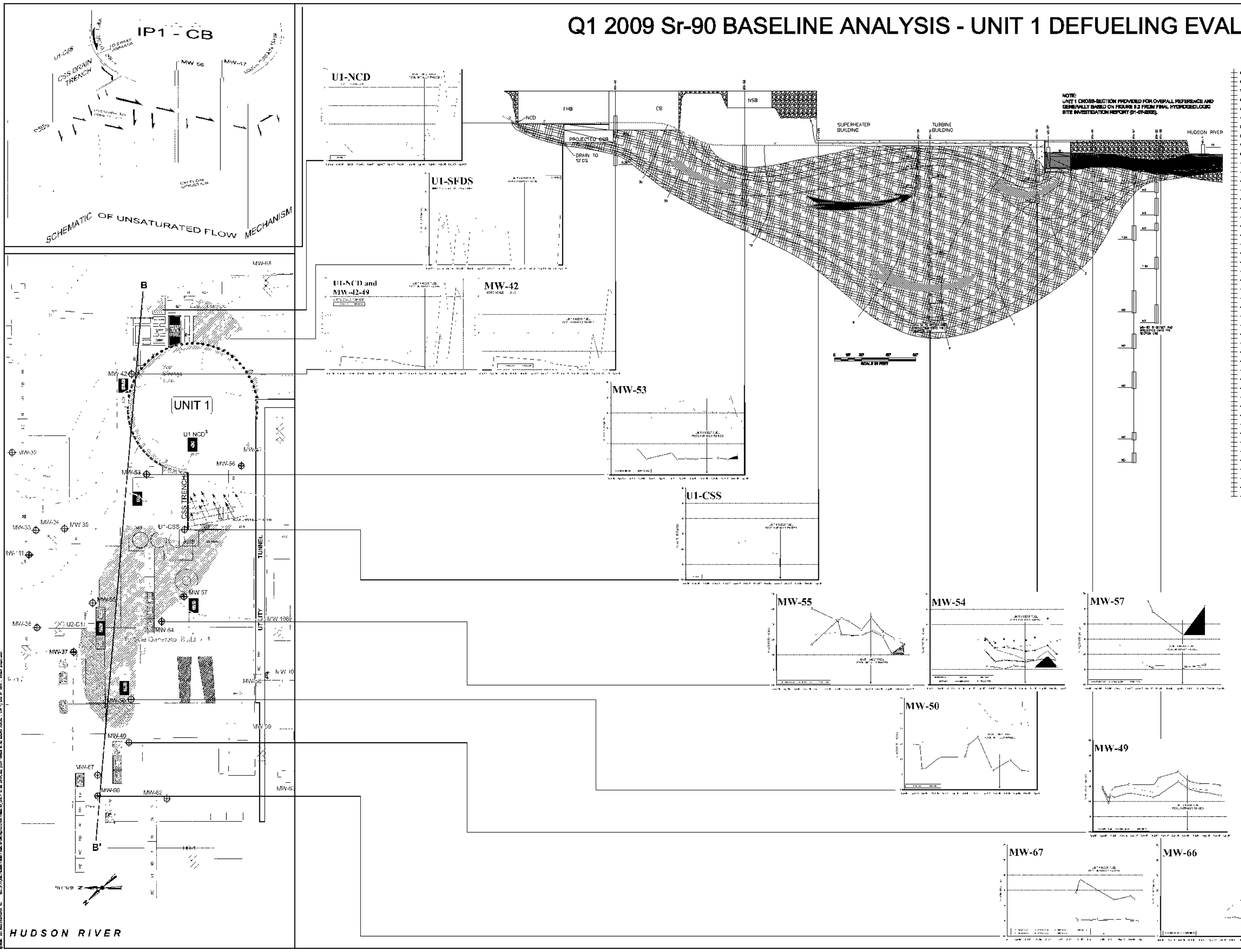
GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
Phone (781) 278-3700 Fax (781) 278-5701

INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

1st QUARTER 2009 ROLLING AVERAGE[1] STRONTIUM-90 ACTIVITY MAP

Proj Mgr: MJB
Designed By: MJB
Reviewed By: MJB
Operator: GAS
Dwg Date: 06-16-2010
Job No: 41001/869.91
Figure No: 7

Q1 2009 Sr-90 BASELINE ANALYSIS - UNIT 1 DEFUELING EVALUATION



LEGEND

Sr-90 DATA GRAPHS

Point Shading

△○ Analytical Results Below MDC

●◪ Analytical Results Above MDC

Hatching

Probable Response to Raising of Unit 1 West Fuel Pool

ISOPLETH PLAN

Isopleth Plan View Extracted from Figure 7

MW-30 - - - - Boring / Monitoring Installation Designation
⊕ — Longterm Radionuclide / Monitoring Installation
— Standby Radionuclide / Monitoring Installation
Active Storm Drain
- - - Abandoned Storm Drain
Catch Basin
Footing Drain

Probable Legacy Release Locations

Unit 2 Fuel Pool
(All identified leaks repaired as of December 2007)
Unit 1 West Fuel Pool
(All U1-SFPs drained and inactive as of October 2008)
Terminated Connection To Storm Drain
Drain Exfiltration
Inter-Structure Joint / Mud Mat
Containment Spray Sump Trench

Depth-Specific Data

Average activity of Sr-90 (pCi/L) for each screened interval
Multiple Screened Intervals w/ Depth
Screened in Soil
Screened in Bedrock
Groundwater elevation for each screened interval at the time of low river tide on 01/09/2009

Activity Data [1,2] Quarter 1 2009

Bar Graphs, Average Sr-90, pCi/L		Isopleths; Average Sr-90, pCi/L
	No Sample	2 - 4
	Not Detected (ND)	4 - 8
	ND - 1	8 - 25
	1.0 - 2.0	> 25
	2.0 - 4.0	
	4.0 - 8.0	
	8.0 - 25	
	> 25	

Note: Illustration of contaminant plume is a schematic representation only. In reality, the geologic bedrock formation is over 99% solid, crystalline rock, with the contaminated water contained only in the remaining (less than 1%) interstitial space (i.e. fractures).

Groundwater Elevation Contours

Ambient "Watertable" Contours 01/09/2009 (10' Interval)
Contours Other Than 10' Interval
Vadose Zone Contaminant Transport

Note
Groundwater contours developed from measured data available on 01/09/2009. Actual elevations may vary from conditions shown and the actual distribution of piezometric heads is likely more complex than indicated.

Data Notes
[illegible]

General Notes
1. Base map was developed from an untitled electronic file provided by Bailey & Watson Surveying and Engineering P.C., Dated 2/3/05. CAD file name "OZA.dwg"

CROSS SECTION B - B'

Cross-Section generally based on Figure 9.2 from Final Hydrogeologic Site Investigation Report, 01-07-2008

Concrete
Overburden
Bedrock
Groundwater Piezometric Head Contour
Groundwater Table
Groundwater Flow Direction
Monitoring Well
Screened Interval
Measured Activity of SR-90 (pCi/L) for each Screened Interval (Quarter 1 2009)

CONTOUR INTERVAL

SOIL	ROCK	
		2-4 pCi/L
		4-8 pCi/L
		8-25 pCi/L
		>25 pCi/L

Most recent measured activities in pCi/L through August 2007 data.

Note: Illustration of contaminant plume is a schematic representation only. In reality, the geologic bedrock formation is over 99% solid, crystalline rock, with the contaminated water contained only in the remaining (less than 1%) interstitial space (i.e. fractures).

NOTE:
UNIT 1 CROSS-SECTION PROVIDED FOR OVERALL REFERENCE AND GENERALLY BASED ON FIGURE 9.2 FROM FINAL HYDROGEOLOGIC SITE INVESTIGATION REPORT (01-07-2008).

Notes:

1. Base map developed from electronic files, prepared by Bailey and Watson Surveying & Engineering PC, Cold Spring, NY 10516. Exact locations and orientations of structures above the water table are approximate and/or have been modified on these sections to better illustrate contaminant source mechanisms and/or migration pathways.
2. Water level readings have been made in the monitoring wells at the times and under the conditions stated. These data have been reviewed and interpretations made in the text of this report. However, it must be stated that fluctuations in the level of the groundwater may occur due to variations in rainfall, tides, temperature and other factors.
3. The stratification lines are based upon interpolations between widely spaced borings, and monitoring wells and thus represent the approximate boundaries between soil types. Actual transitions may vary from those shown.
4. MW-62 is offset and projected onto the section line.

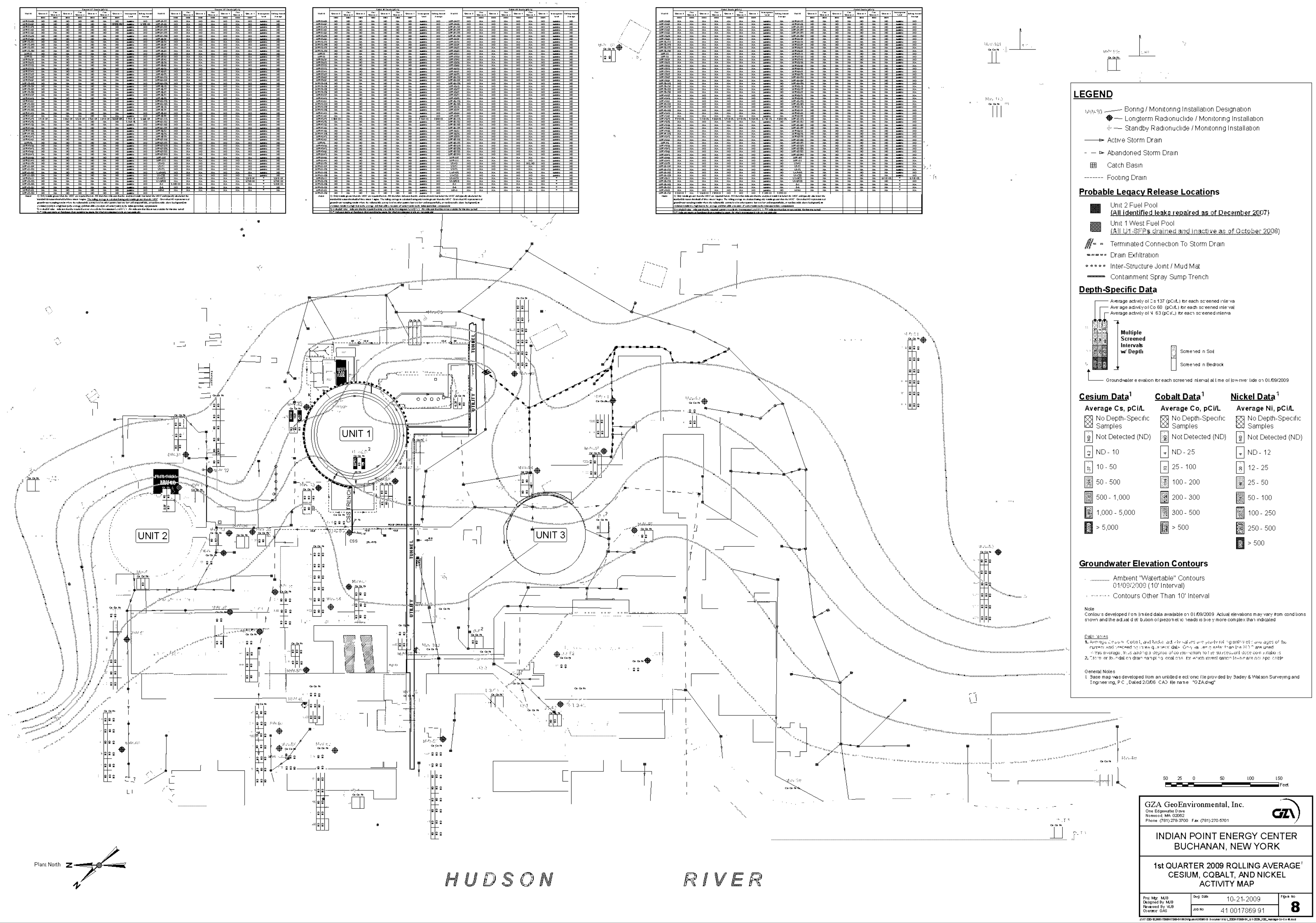
GZA GeoEnvironmental, Inc.
Engineers and Scientists

INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

Sr-90 BASELINE ANALYSIS -
UNIT 1 DEFUELING EVALUATION
1st QUARTER 2009

DATE: 08-21-2010
JOB NO. 41.0017869.91
FIGURE NO. 7A

1st QUARTER 2009 ROLLING AVERAGE[1] CESIUM, COBALT, AND NICKEL ACTIVITY MAP



APPENDIX A: LIMITATIONS

HYDROGEOLOGICAL LIMITATIONS

1. The conclusions and recommendations submitted in this report are based in part upon the radiological, chemical and physical data from water analyses. These data were obtained from specific sampling locations at specific times. The full nature and extent of variations in the data between these specific locations and times are not known. The conditions existing between these specific locations and times have only been inferred using interpolation and extrapolation based on judgment.

2. The subsurface profiles described in the text and presented in the report figures are intended to convey anticipated trends in subsurface conditions. The conditions shown are approximate and generalized and were developed, in part, based on judgment. For specific information at specific locations, refer to the individual subsurface investigation logs.

3. Water level readings (piezometric pressures) have been made in the specific borings, monitoring wells, and Waterloo installations at times and under conditions stated. These data have been reviewed and interpretations have been made in the text and on the figures of this report. However, it must be noted that temporal and spatial fluctuations in the level of the groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time and location measurements were made.

4. Where quantitative laboratory testing has been conducted by an outside laboratory, GZA has relied upon the validity of the data provided, and has not conducted an independent laboratory evaluation of the reliability of these data.

5. Radiological and chemical analyses have been performed for specific parameters during the course of this study, as summarized in the text. Additional constituents not searched for may be present in soil and groundwater at the site.

6. Variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past and current plant operational practices, the passage of time, and other factors. Should additional data (water analyses, water elevations, subsurface deposits, plant construction and operation, etc.) become available in the future, these data should be reviewed by GZA, and the conclusions and recommendations presented herein modified accordingly.

7. This monitoring report was developed by GZA GeoEnvironmental Inc for the exclusive of Entergy Nuclear Northeast (Entergy) at the Indian Point Energy Center. Any use of data or information provided in the report, by parties other than Entergy, is prohibitated without the prior written permission of Entergy and GZA.

APPENDIX B: TRANSDUCER INSTALLATION LOGS

TRANSDUCER INSTALLATION LOG

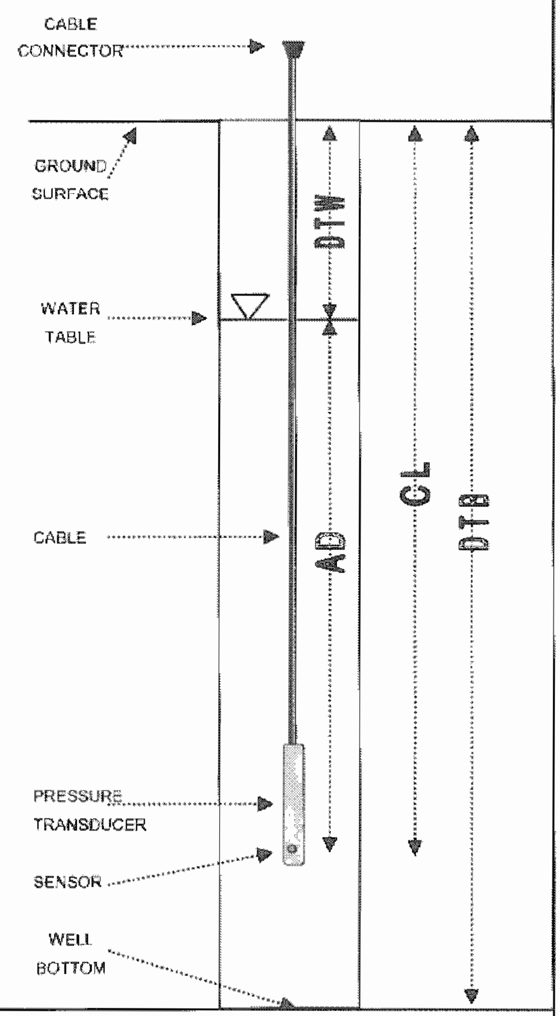
GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: HR 1 #2 SHEET: 1 of 1 FILE NO.: 01.0017569.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	--	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.99	DATE	1/22/09
PSI CAPACITY	30	CASING ELEVATION (FT)	18.50		
SERIAL NUMBER	16593	CASING DIAMETER (INCH)	2		
	NV				
		STATIC GROUNDWATER TABLE ELEVATION (FT)			2.29
GZA ENGINEER	M. Britos A. Altieri				

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		--	FT
GROUND ELEVATION:		18.50	FT M.S.L.
CASING ELEVATION:		18.50	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		above	
DISTANCE FROM CASING TO GROUND (+ OR -):		0.00	FT
MEASURED CABLE LENGTH		--	FT
TIME OF MEASUREMENT:		8:57	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		16.21	FT
ACTUAL DEPTH:	+	?	FT
THEORETICAL CABLE LENGTH:	=	#VALUE!	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		18.50	FT M.S.L.
DEPTH TO WATER:	−	16.21	FT
REFERENCE ELEVATION:	=	2.29	FT M.S.L.
TEST NAME:		HR-1#2	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		8:59	HRS



LEGEND
- **DTW** - DEPTH TO WATER
- **DTB** - DEPTH TO BOTTOM OF WELL
- **AD** - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
- **CL** - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK
440 NINTH AVENUE, 18th FLOOR
NEW YORK, NEW YORK 10001
SCIENTISTS AND ENGINEERS

Client
Entergy
Indian Point Energy Center

WELL ID	MW-37-22
SHEET	1 of 1
FILE NO.	01.0017869.91
PROJECT LOCATION	Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	57.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	15.021	DATE	1/21/2009
PSI CAPACITY	30	CASING ELEVATION (FT)	14.852		
SERIAL NUMBER	6753	CASING DIAMETER (INCH)	2		

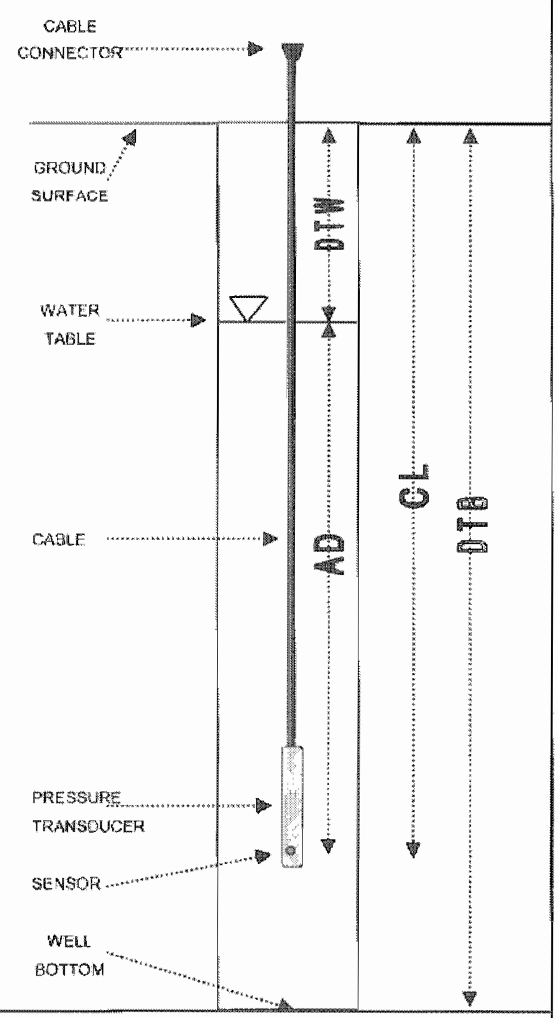
STATIC GROUNDWATER TABLE ELEVATION (FT) * 5.10

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		22.00	FT
GROUND ELEVATION:		15.021	FT M.S.L.
CASING ELEVATION:		14.852	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.17	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		12:22	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		9.75	FT
ACTUAL DEPTH:	+	12.20	FT
THEORETICAL CABLE LENGTH:	=	21.95	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		14.852	*FT M.S.L.
DEPTH TO WATER:	−	9.75	FT
REFERENCE ELEVATION:	=	5.102	*FT M.S.L.
TEST NAME:		MW37-22	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		12:24	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID	MW-37-32
		SHEET	1 of 1
		FILE NO.	01.0017869.91
		PROJECT LOCATION	Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	57.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	15.021	DATE	1/21/09
PSI CAPACITY	30	CASING ELEVATION (FT)	14.791		
SERIAL NUMBER		CASING DIAMETER (INCH)	1		

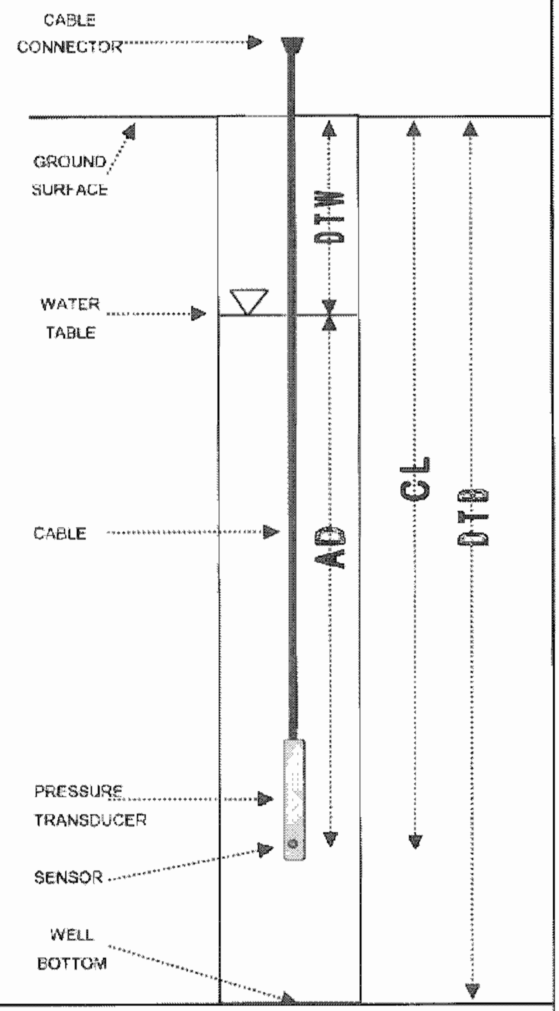
STATIC GROUNDWATER TABLE ELEVATION (FT) 5.05

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		32.00	FT
GROUND ELEVATION:		15.021	FT M.S.L
CASING ELEVATION:		14.791	FT M.S.L
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.230	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		12:29	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		9.74	FT
ACTUAL DEPTH:	+	14.581	FT
THEORETICAL CABLE LENGTH:	=	24.321	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		14.791	FT M.S.L.
DEPTH TO WATER:	−	9.74	FT
REFERENCE ELEVATION:	=	5.051	FT M.S.L.
TEST NAME:		MW-37-32	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		12:30	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

GZA

WELL ID : MW-37-32

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-37-40 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	57.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	15.021	DATE	1/21/09
PSI CAPACITY	30	CASING ELEVATION (FT)	14.852		
SERIAL NUMBER	2280	CASING DIAMETER (INCH)	1		

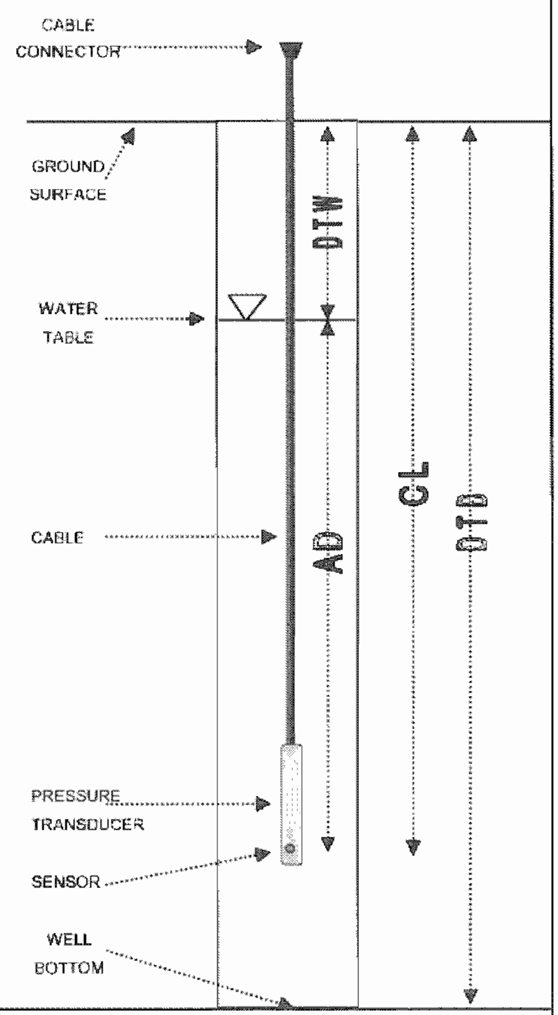
STATIC GROUNDWATER TABLE ELEVATION (FT) * 6.77

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		40.00	FT
GROUND ELEVATION:		15.021	FT M.S.L.
CASING ELEVATION:		14.852	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.169	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		12:36	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		8.08	*FT
ACTUAL DEPTH:	+	32.165	FT
THEORETICAL CABLE LENGTH:	=	40.245	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		14.852	FT M.S.L.
DEPTH TO WATER:	−	8.08	*FT
REFERENCE ELEVATION:	=	6.772	*FT M.S.L.
TEST NAME:		MW-37-40	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		12:38	HRS



LEGEND **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW 35 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	29.80	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	18.604	DATE	2/11/09
PSI CAPACITY	30	CASING ELEVATION (FT)	18.444		
SERIAL NUMBER	195	CASING DIAMETER (INCH)	4		

STATIC GROUNDWATER TABLE ELEVATION (FT): 9.82

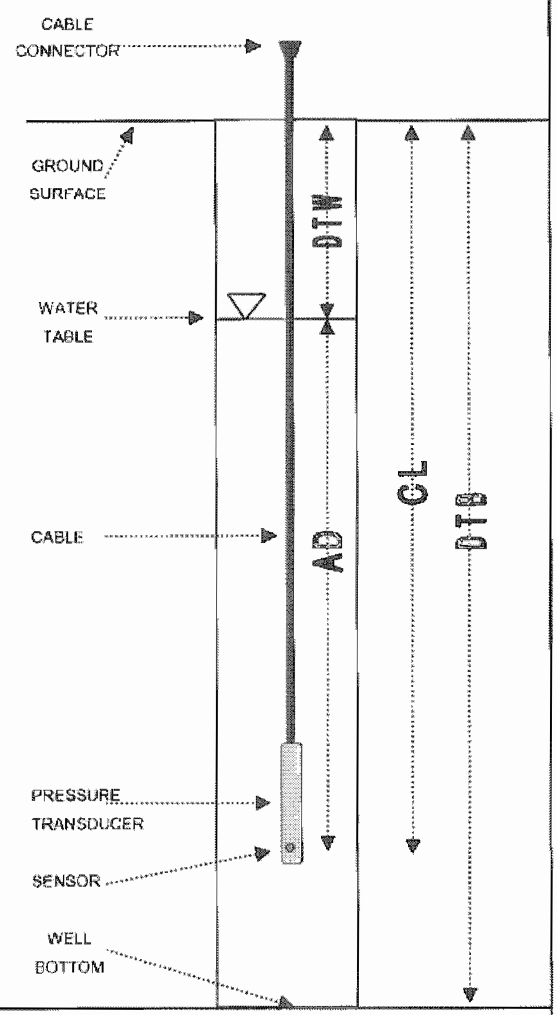
GZA ENGINEER: M. Britos

oil on surface is interfering with reading

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		29.80	FT
GROUND ELEVATION:		18.604	FT M.S.L
CASING ELEVATION:		18.444	FT M.S.L
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.160	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		12:03	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		8.96	FT
ACTUAL DEPTH:	+	17.117	FT
THEORETICAL CABLE LENGTH:	=	26.077	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		18.444	FT M.S.L.
DEPTH TO WATER:	−	8.96	FT
REFERENCE ELEVATION:	=	9.484	FT M.S.L.
TEST NAME:		MW-35	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		12:03	HRS



LEGEND:
DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES

GZA WELL ID: MW-35

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-36-52 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	54.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	11.799	DATE	1/22/09
PSI CAPACITY	30	CASING ELEVATION (FT)	11.670		
SERIAL NUMBER		CASING DIAMETER (INCH)	1		

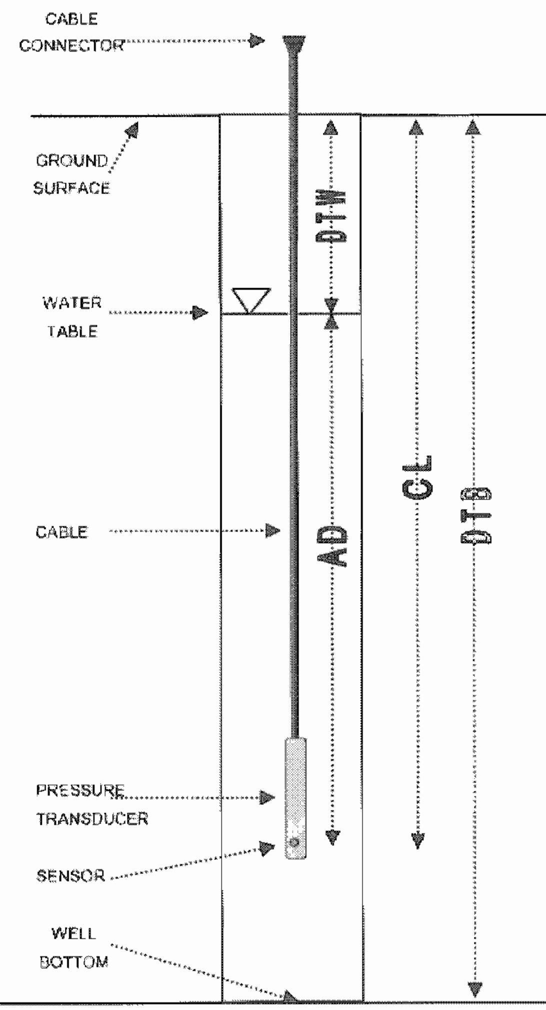
STATIC GROUNDWATER TABLE ELEVATION (FT) 6.65

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		52.00	FT
GROUND ELEVATION:		11.799	FT M.S.L.
CASING ELEVATION:		11.670	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.129	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		10:36	HRS
MEASUREMENT TAKEN FROM:		casing	
DEPTH TO WATER:		5.02	FT
ACTUAL DEPTH:	+	46.515	FT
THEORETICAL CABLE LENGTH:	=	51.535	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		11.670	FT M.S.L.
DEPTH TO WATER:	−	5.02	FT
REFERENCE ELEVATION:	=	6.650	FT M.S.L.
TEST NAME:		MW-36-52	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		10:38	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID	MW42-78
		SHEET	1 of 1
		FILE NO	01.0017869.91
		PROJECT LOCATION	Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	80.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	69.714	DATE	2/13/09
PSI CAPACITY	30	CASING ELEVATION (FT)	69.524		
SERIAL NUMBER	16626	CASING DIAMETER (INCH)	1		
	nv				

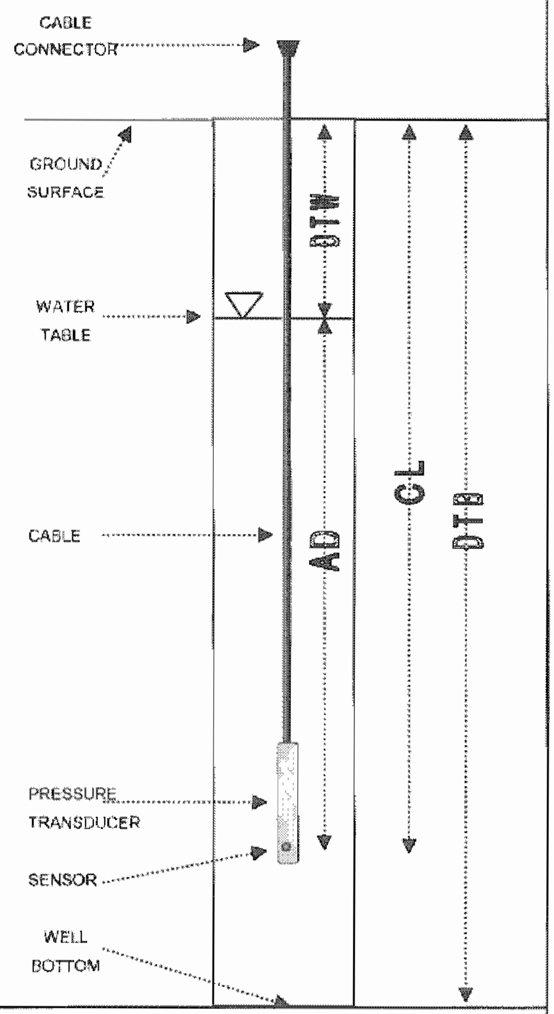
STATIC GROUNDWATER TABLE ELEVATION (FT) 35.55

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		78.00	FT
GROUND ELEVATION:		69.71	FT M.S.L.
CASING ELEVATION:		69.52	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.19	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		12:40	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		33.97	FT
ACTUAL DEPTH:	+	43.461	FT
THEORETICAL CABLE LENGTH:	=	77.431	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		69.524	FT M.S.L.
DEPTH TO WATER:	−	33.97	FT
REFERENCE ELEVATION:	=	35.554	FT M.S.L.
TEST NAME:		MW42-78	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		12:40	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID	MW-43-28
		SHEET	1 of 1
		FILE NO.	01.0017569.91
		PROJECT LOCATION	Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	63.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	48.760	DATE	2/12/09
PSI CAPACITY	30	CASING ELEVATION (FT)	48.021		
SERIAL NUMBER	11331	CASING DIAMETER (INCH)	2		

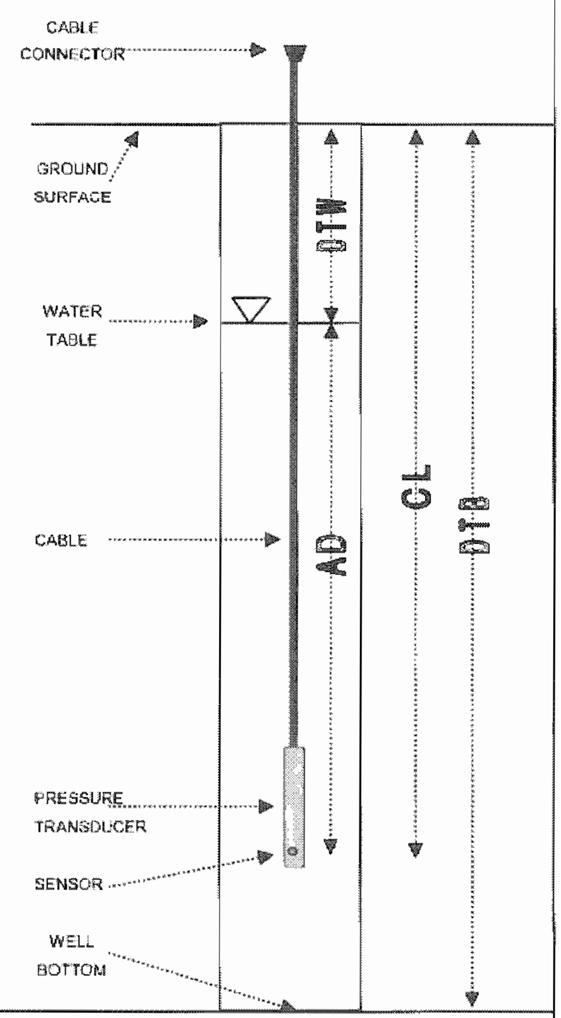
STATIC GROUNDWATER TABLE ELEVATION (FT) 32.22

GZA ENGINEER M. Britos

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		28.00	FT
GROUND ELEVATION:		48.760	FT M.S.L.
CASING ELEVATION:		48.021	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.739	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:32	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		15.80	FT
ACTUAL DEPTH:	+	11.119	FT
THEORETICAL CABLE LENGTH:	=	26.919	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		48.021	FT M.S.L.
DEPTH TO WATER:	−	15.80	FT
REFERENCE ELEVATION:	=	32.221	FT M.S.L.
TEST NAME:		MW-43-28	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:32	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

GZA WELL ID: MW-43-28

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-43-62 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	63.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	48.761	DATE	2/12/09
PSI CAPACITY	30	CASING ELEVATION (FT)	47.821		
SERIAL NUMBER	16236	CASING DIAMETER (INCH)	2		

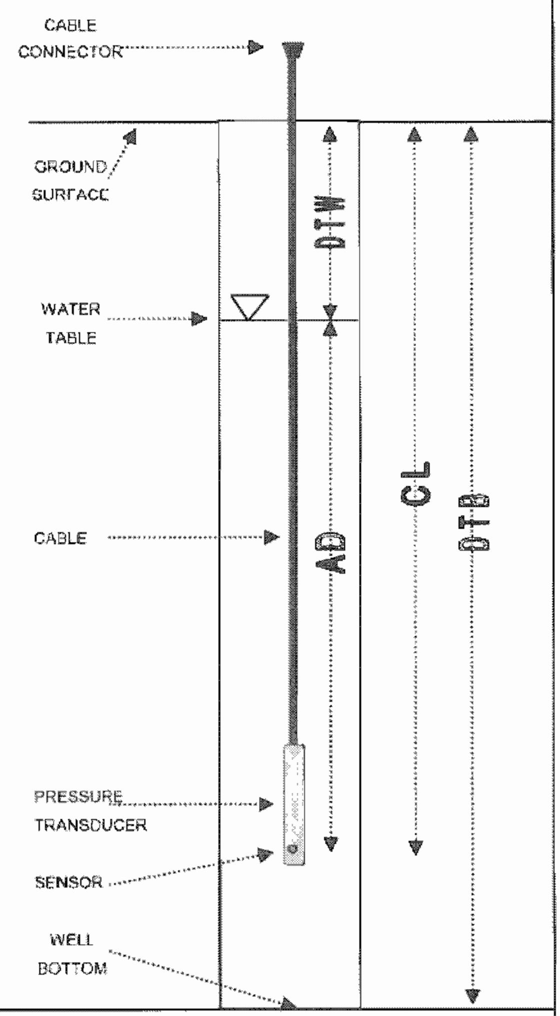
STATIC GROUNDWATER TABLE ELEVATION (FT): 30.50

GZA ENGINEER: M. Britos

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		63.00	FT
GROUND ELEVATION:		48.761	FT M.S.L.
CASING ELEVATION:		47.821	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.940	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:22	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		17.32	FT
ACTUAL DEPTH:	+	36.126	FT
THEORETICAL CABLE LENGTH:	=	53.446	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		47.821	FT M.S.L.
DEPTH TO WATER:	−	17.32	FT
REFERENCE ELEVATION:	=	30.501	FT M.S.L.
TEST NAME:		MW-43-62	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:22	HRS



LEGEND:
- **DTW** - DEPTH TO WATER
- **DTB** - DEPTH TO BOTTOM OF WELL
- **AD** - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
- **CL** - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-44-67 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	105.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	93.52	DATE	2/2/09
PSI CAPACITY	30	CASING ELEVATION (FT)	93.02		
SERIAL NUMBER		CASING DIAMETER (INCH)	2		

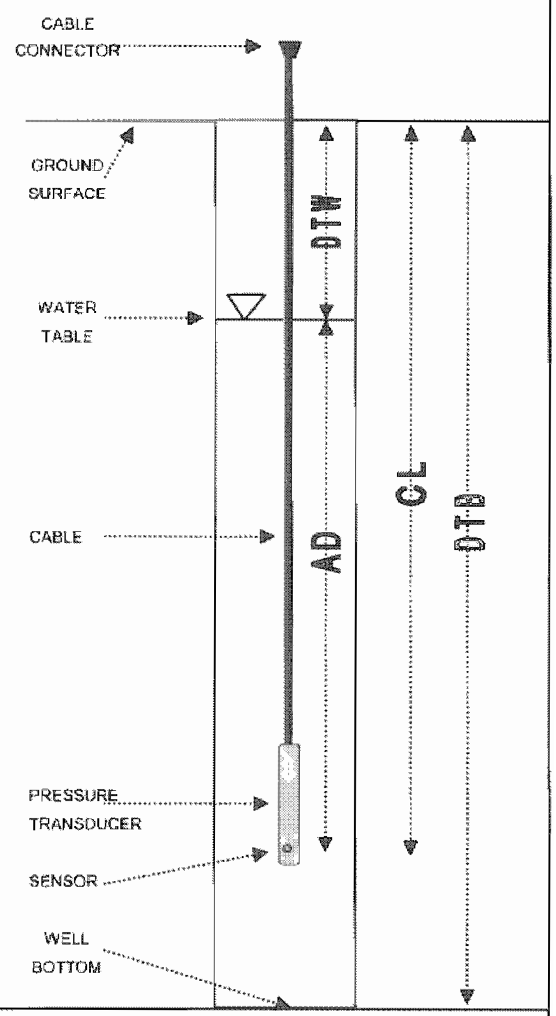
STATIC GROUNDWATER TABLE ELEVATION (FT): 33.28

GZA ENGINEER: M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		67.00	FT
GROUND ELEVATION:		93.52	FT M.S.L.
CASING ELEVATION:		93.02	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		0.50	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:36	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		59.74	FT
ACTUAL DEPTH:	+	4.414	FT
THEORETICAL CABLE LENGTH:	=	64.154	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		93.02	FT M.S.L.
DEPTH TO WATER:	−	59.74	FT
REFERENCE ELEVATION:	=	33.28	FT M.S.L.
TEST NAME:		MW-44-67	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:37	HRS



LEGEND. DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES.

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID SHEET FILE NO. PROJECT LOCATION	MW-46 1 of 1 01.0017869.91 Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	30.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	18.08	DATE	2/5/09
PSI CAPACITY	30	CASING ELEVATION (FT)	16.97		
SERIAL NUMBER		CASING DIAMETER (INCH)	4		

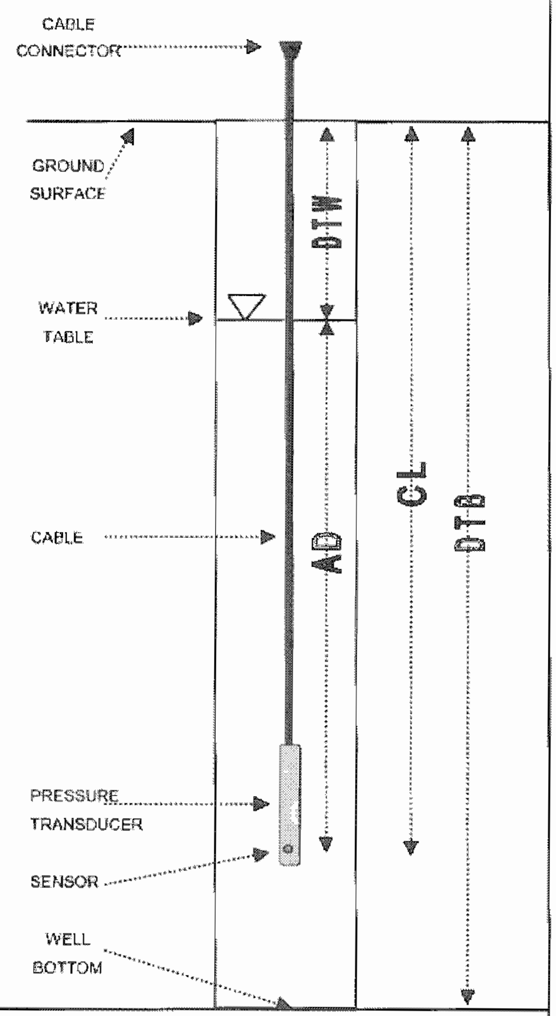
STATIC GROUNDWATER TABLE ELEVATION (FT) 12.41

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		29.82	FT
GROUND ELEVATION:		18.08	FT M.S.L.
CASING ELEVATION:		16.97	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		-	
DISTANCE FROM CASING TO GROUND (+ OR -):		-1.11	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		11:43	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		4.56	FT
ACTUAL DEPTH:	+	23.53	FT
THEORETICAL CABLE LENGTH:	=	28.09	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		16.97	FT M.S.L.
DEPTH TO WATER:	−	4.56	FT
REFERENCE ELEVATION:	=	12.41	FT M.S.L.
TEST NAME:		MW-46	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		11:44	HRS



LEGEND **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-47-56 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	80.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	70.32	DATE	2/13/09
PSI CAPACITY	30	CASING ELEVATION (FT)	69.81		
SERIAL NUMBER	15843	CASING DIAMETER (INCH)	2		

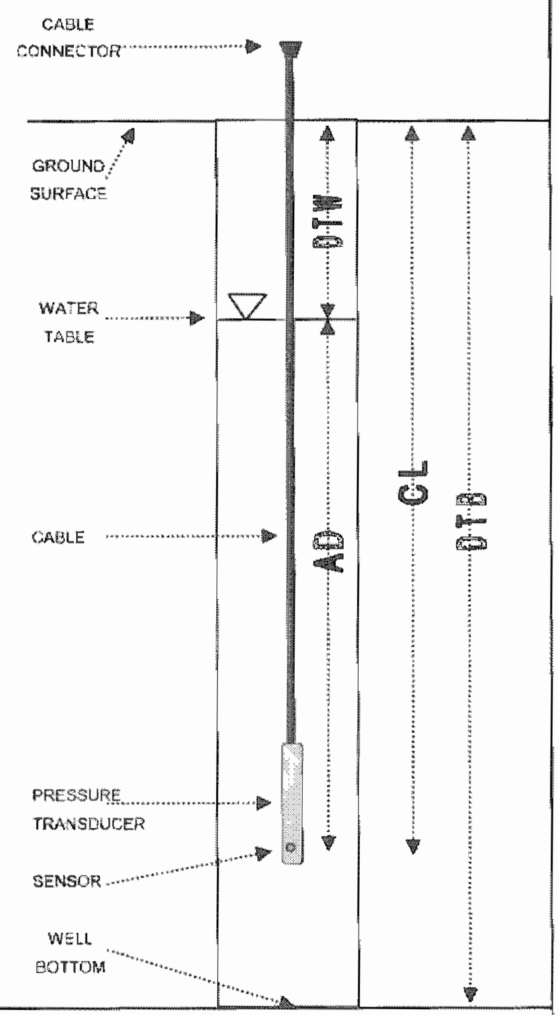
STATIC GROUNDWATER TABLE ELEVATION (FT) 22.61

GZA ENGINEER M. Britos

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		56.00	FT
GROUND ELEVATION:		70.32	FT M.S.L.
CASING ELEVATION:		69.81	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.51	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		11:00	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		47.20	FT
ACTUAL DEPTH:	+	3.32	FT
THEORETICAL CABLE LENGTH:	=	50.52	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		69.81	FT M.S.L.
DEPTH TO WATER:	−	47.20	FT
REFERENCE ELEVATION:	=	22.61	FT M.S.L.
TEST NAME:		MW47-57	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		11:00	HRS



LEGEND **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-52-11 SHEET: 1 of 1 FILE NO: 01.0017669.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	12.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	16.77	DATE	2/11/09
PSI CAPACITY	30	CASING ELEVATION (FT)	16.28		
SERIAL NUMBER	5533	CASING DIAMETER (INCH)	2		

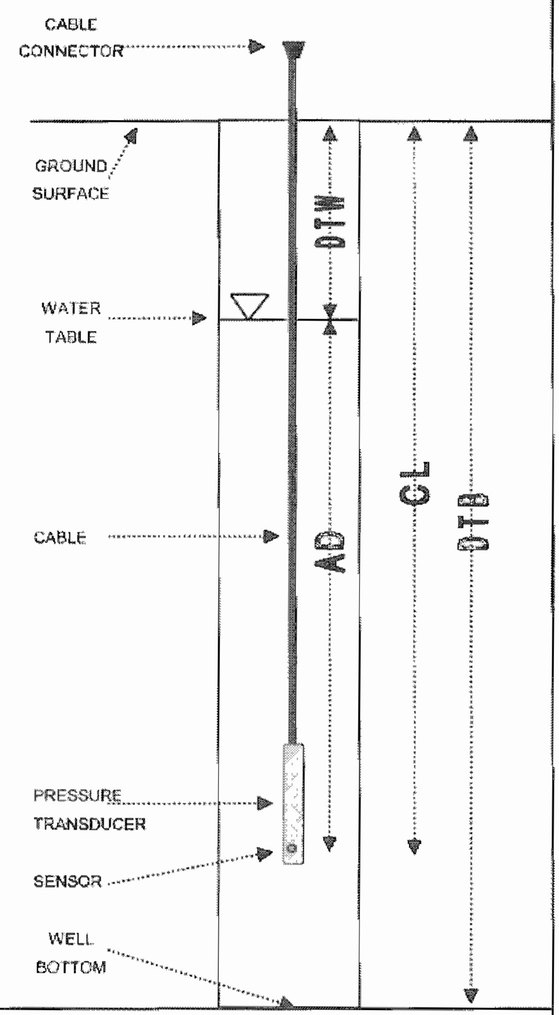
STATIC GROUNDWATER TABLE ELEVATION (FT): 7.99

GZA ENGINEER: M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		11.00	FT
GROUND ELEVATION:		16.77	FT M.S.L.
CASING ELEVATION:		16.28	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.49	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		14:32	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		8.29	FT
ACTUAL DEPTH:	+	3.75	FT
THEORETICAL CABLE LENGTH:	=	12.04	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:	*	16.28	FT M.S.L.
DEPTH TO WATER:	−	8.29	FT
REFERENCE ELEVATION:	=	7.99	FT M.S.L.
TEST NAME:		MW-52-12	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		14:32	HRS



LEGEND
DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-53-82 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	124.70	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	70.26	DATE	1/26/09
PSI CAPACITY	30	CASING ELEVATION (FT)	69.93		
SERIAL NUMBER	11897	CASING DIAMETER (INCH)	2		

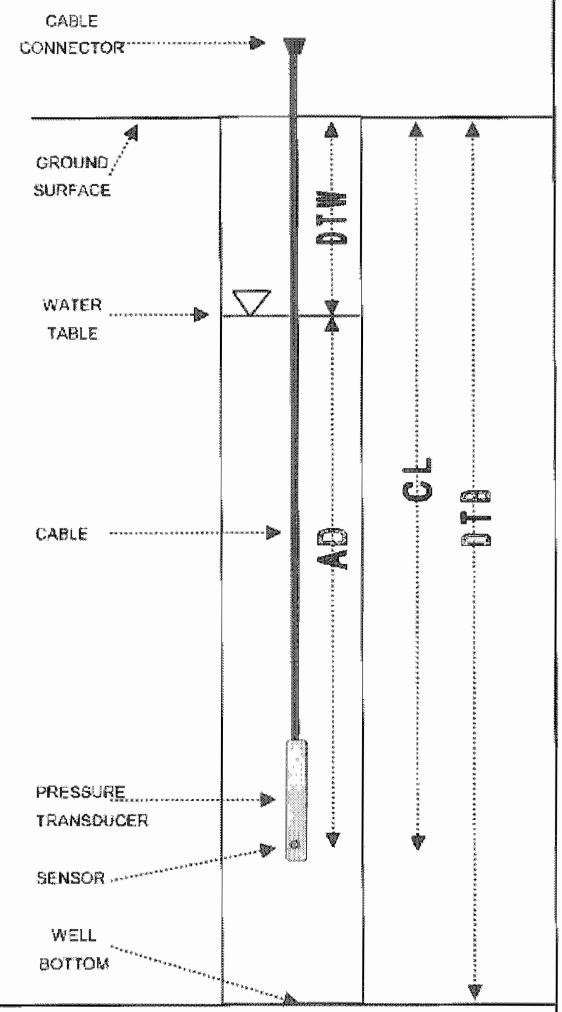
STATIC GROUNDWATER TABLE ELEVATION (FT): 9.63

GZA ENGINEER: M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		82.00	FT
GROUND ELEVATION:		70.26	FT M.S.L.
CASING ELEVATION:		69.93	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.33	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		10:17	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		60.30	FT
ACTUAL DEPTH:	+	21.083	FT
THEORETICAL CABLE LENGTH:	=	81.383	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		69.93	FT M.S.L.
DEPTH TO WATER:	−	60.30	FT
REFERENCE ELEVATION:	=	9.63	FT M.S.L.
TEST NAME:		MW-53-82	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		10:18	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-55-24 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	77.50	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	18.25	DATE	2/11/09
PSI CAPACITY	30	CASING ELEVATION (FT)	17.77		
SERIAL NUMBER	13988	CASING DIAMETER (INCH)	1		

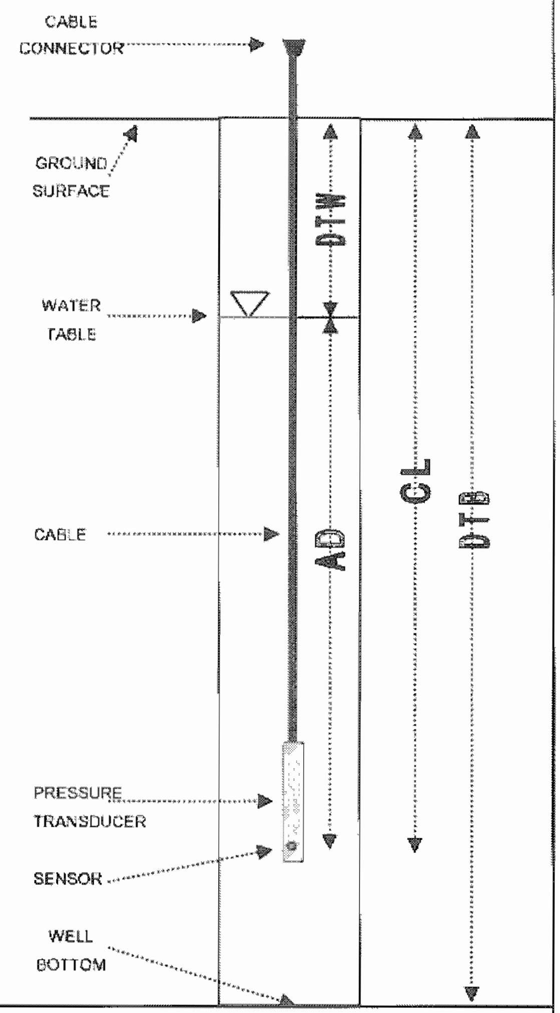
STATIC GROUNDWATER TABLE ELEVATION (FT) 7.80

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		24.00	FT
GROUND ELEVATION:		18.25	FT M.S.L.
CASING ELEVATION:		17.77	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.48	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:11	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		9.97	FT
ACTUAL DEPTH:	+	5.85	FT
THEORETICAL CABLE LENGTH:	=	15.82	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		17.77	FT M.S.L.
DEPTH TO WATER:	−	9.97	FT
REFERENCE ELEVATION:	=	7.80	FT M.S.L.
TEST NAME:		MW-55-24	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:11	HRS



LEGEND: DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

GZA

WELL ID: MW-55-24

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-55-54 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	77.50	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	18.25	DATE	2/4/09
PSI CAPACITY	30	CASING ELEVATION (FT)	17.77		
SERIAL NUMBER	20501	CASING DIAMETER (INCH)	1		

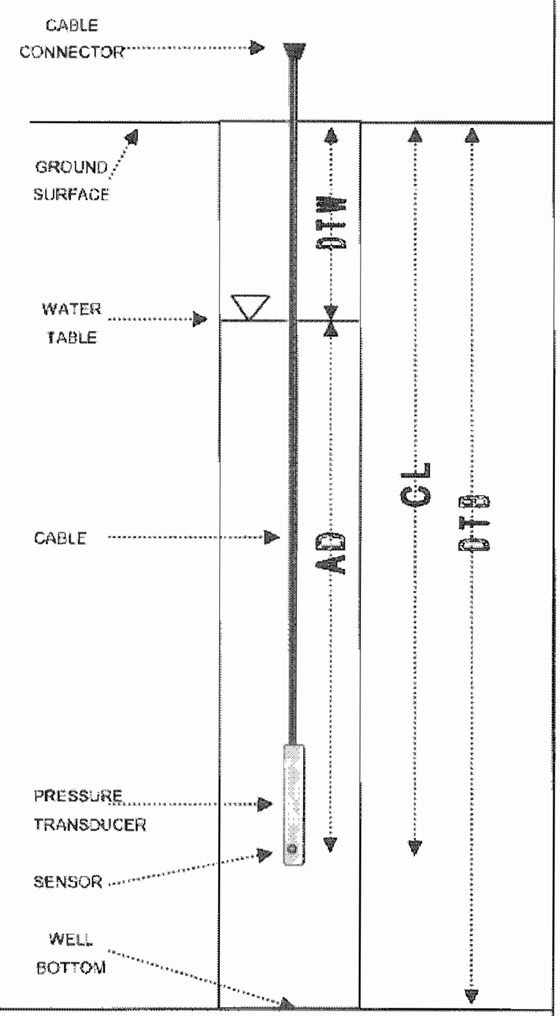
STATIC GROUNDWATER TABLE ELEVATION (FT) 6.84

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		54.00	FT
GROUND ELEVATION:		18.25	FT M.S.L.
CASING ELEVATION:		17.77	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.48	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		13:35	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		10.93	FT
ACTUAL DEPTH:	+	40.85	FT
THEORETICAL CABLE LENGTH:	=	51.78	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		17.77	FT M.S.L.
DEPTH TO WATER:	−	10.93	FT
REFERENCE ELEVATION:	=	6.84	FT M.S.L.
TEST NAME:		MW-55-54	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		13:37	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

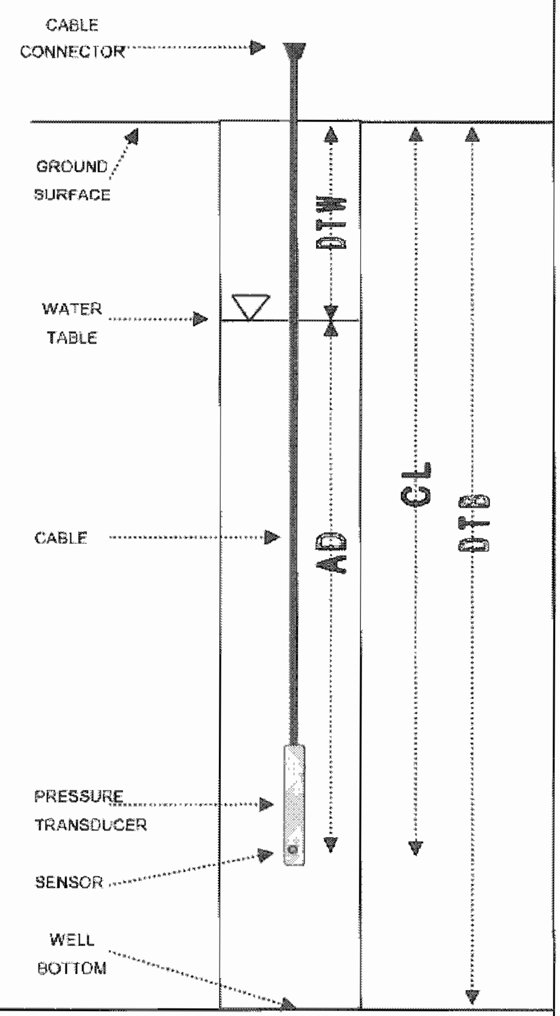
GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-56-53 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	88.50	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	70.26	DATE	2/13/09
PSI CAPACITY	30	CASING ELEVATION (FT)	69.32		
SERIAL NUMBER	16499	CASING DIAMETER (INCH)	2		
	NV				
		STATIC GROUNDWATER TABLE ELEVATION (FT)			21.73
GZA ENGINEER	M. Britos A. Altieri				

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		53.00	FT
GROUND ELEVATION:		70.26	FT M.S.L.
CASING ELEVATION:		69.32	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.94	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		11:39	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		47.59	FT
ACTUAL DEPTH:	+	40.087	FT
THEORETICAL CABLE LENGTH:	=	87.677	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		69.32	FT M.S.L.
DEPTH TO WATER:	−	47.59	FT
REFERENCE ELEVATION:	=	21.73	FT M.S.L.
TEST NAME:		MW-56-53	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		11:39	HRS



LEGEND: DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-56-83 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	88.50	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	70.258	DATE	2/13/09
PSI CAPACITY	30	CASING ELEVATION (FT)	69.207		
SERIAL NUMBER	16394	CASING DIAMETER (INCH)	1		
	NV				

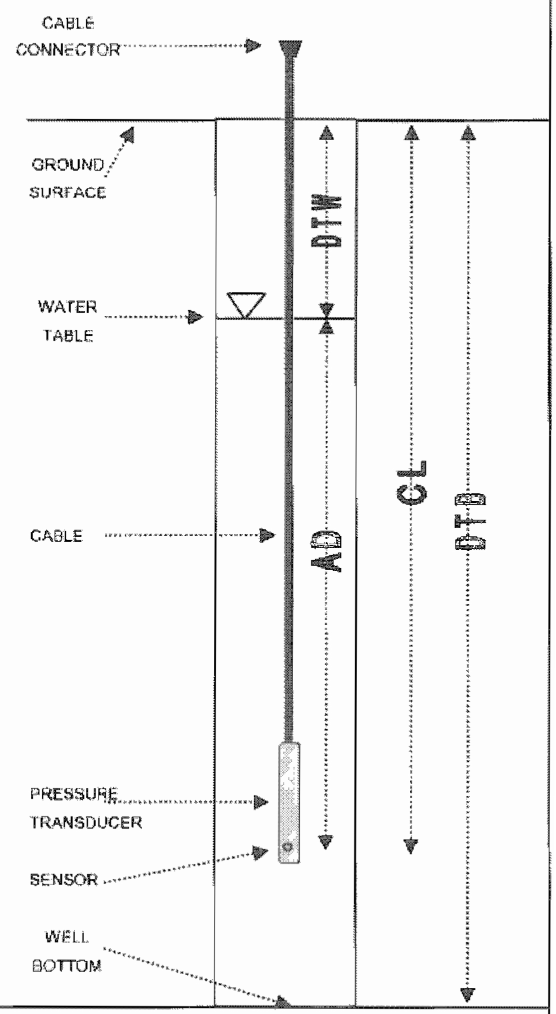
STATIC GROUNDWATER TABLE ELEVATION (FT): 21.89

GZA ENGINEER: M. Britos

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		83.00	FT
GROUND ELEVATION:		70.258	FT M.S.L.
CASING ELEVATION:		69.207	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-1.05	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		11:26	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		47.32	FT
ACTUAL DEPTH:	+	36.372	FT
THEORETICAL CABLE LENGTH:	=	83.692	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		69.207	FT M.S.L.
DEPTH TO WATER:	−	47.32	FT
REFERENCE ELEVATION:	=	21.887	FT M.S.L.
TEST NAME:		MW-56-83	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		11:26	HRS



LEGEND:
DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID	MW-58-65
		SHEET	1 of 1
		FILE NO.	01.0017869.91
		PROJECT LOCATION	Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	72.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.57	DATE	2/3/09
PSI CAPACITY	30	CASING ELEVATION (FT)	14.25		
SERIAL NUMBER	5619	CASING DIAMETER (INCH)	1		

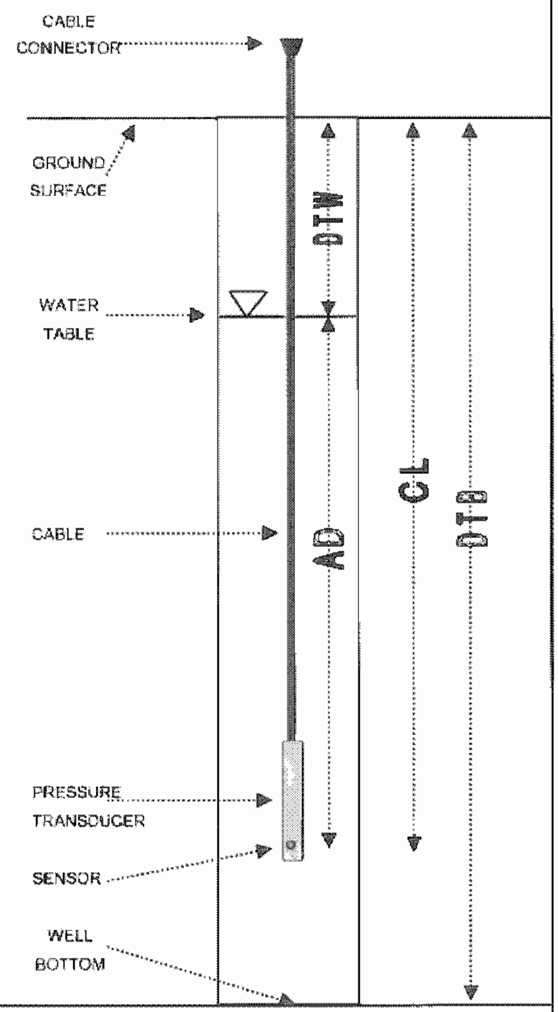
STATIC GROUNDWATER TABLE ELEVATION (FT) 6.43

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		65.00	FT
GROUND ELEVATION:		14.57	FT M.S.L.
CASING ELEVATION:		14.25	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.32	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:11	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		7.82	FT
ACTUAL DEPTH:	+	60.267	FT
THEORETICAL CABLE LENGTH:	=	68.087	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		14.25	FT M.S.L.
DEPTH TO WATER:	−	7.82	FT
REFERENCE ELEVATION:	=	6.43	FT M.S.L.
TEST NAME:		MW-58-65	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:11	HRS



LEGEND. **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID SHEET FILE NO PROJECT LOCATION	MW-62-18 1 of 1 01.0017869.91 Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	38.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.69	DATE	1/23/09
PSI CAPACITY	30	CASING ELEVATION (FT)	12.81		
SERIAL NUMBER	4859	CASING DIAMETER (INCH)	1		

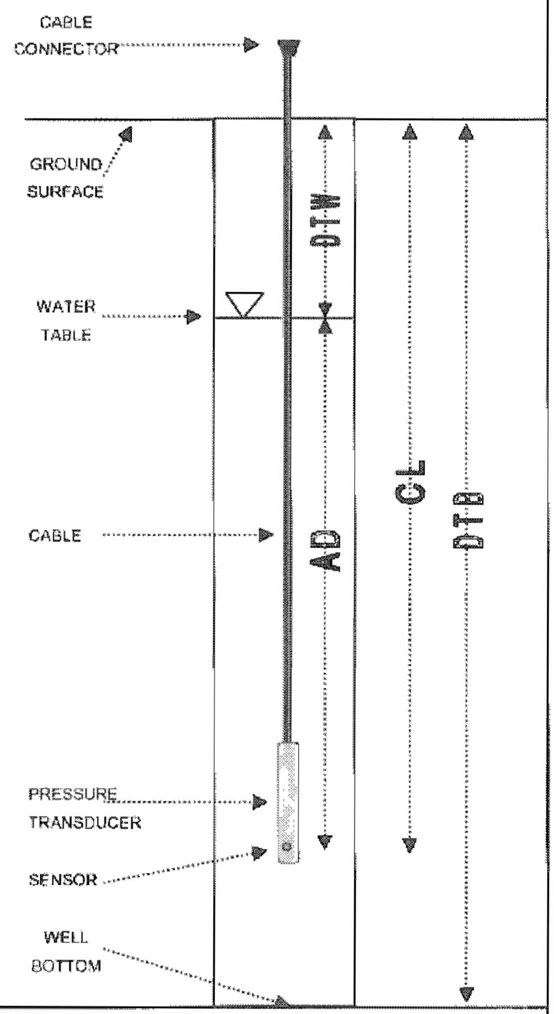
STATIC GROUNDWATER TABLE ELEVATION 2.03

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		18.00	FT
GROUND ELEVATION:		14.69	FT M.S.L.
CASING ELEVATION:		12.81	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-1.88	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:34	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		10.78	FT
ACTUAL DEPTH:	+	5.164	FT
THEORETICAL CABLE LENGTH:	=	15.944	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		12.81	FT M.S.L.
DEPTH TO WATER:	−	10.78	FT
REFERENCE ELEVATION:	=	2.03	FT M.S.L.
TEST NAME:		MW-62-18	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:36	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-63-18 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	35.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.18	DATE	1/23/09
PSI CAPACITY	30	CASING ELEVATION (FT)	13.06		
SERIAL NUMBER		CASING DIAMETER (INCH)	1		

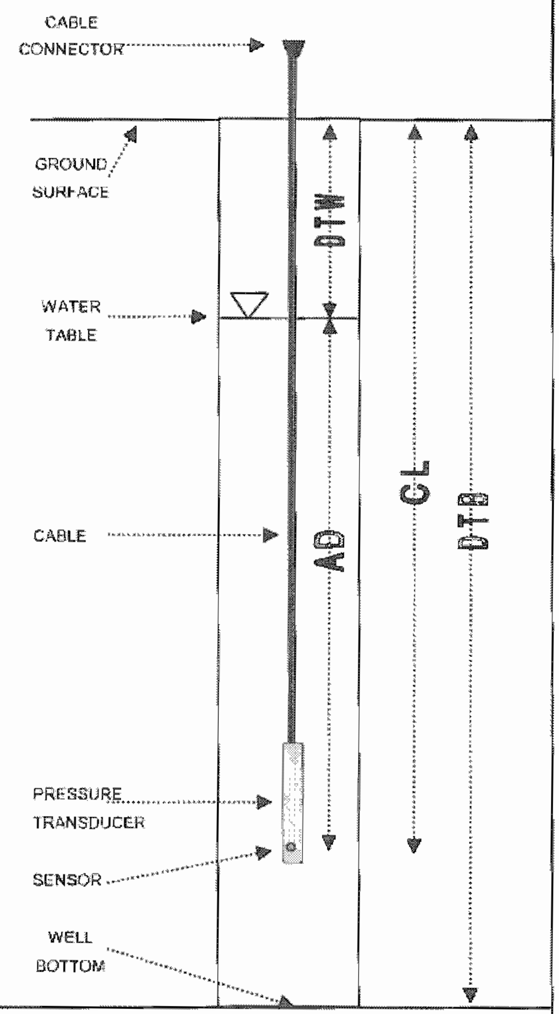
STATIC GROUNDWATER TABLE ELEVATION -0.40

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		18.00	FT
GROUND ELEVATION:		14.18	FT M.S.L.
CASING ELEVATION:		13.06	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-1.12	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:30	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		13.46	FT
ACTUAL DEPTH:	+	4.763	FT
THEORETICAL CABLE LENGTH:	=	18.223	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		13.06	FT M.S.L.
DEPTH TO WATER:	−	13.46	FT
REFERENCE ELEVATION:	=	-0.40	FT M.S.L.
TEST NAME:		MW-63-18	
LOGGING INTERVAL:		20	MIN
TEST START TIME:			HRS



LEGEND
DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-66-21 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	37.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.122	DATE	1/27/09
PSI CAPACITY	30	CASING ELEVATION (FT)	13.407		
SERIAL NUMBER	15849	CASING DIAMETER (INCH)	2		

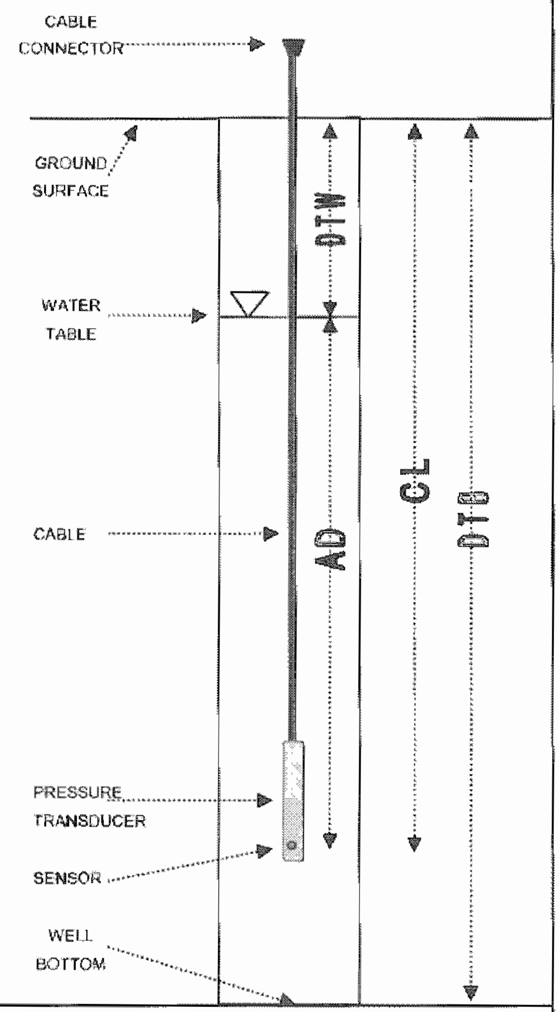
STATIC GROUNDWATER TABLE ELEVATION (FT) 0.52

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		21.00	FT
GROUND ELEVATION:		14.122	FT M.S.L.
CASING ELEVATION:		13.407	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.72	FT
MEASURED CABLE LENGTH		--	FT
TIME OF MEASUREMENT:		10:09	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		12.89	FT
ACTUAL DEPTH:	+	?	FT
THEORETICAL CABLE LENGTH:	=		FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		13.407	FT M.S.L.
DEPTH TO WATER:	−	12.89	FT
REFERENCE ELEVATION:	=	0.517	FT M.S.L.
TEST NAME:		MW-66-21	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		10:10	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

GZA

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID SHEET FILE NO. PROJECT LOCATION	MW-66-36 1 of 1 01.0017869.91 Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	37.00	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.122	DATE	1/27/09
PSI CAPACITY	30	CASING ELEVATION (FT)	13.364		
SERIAL NUMBER	11840	CASING DIAMETER (INCH)	1		

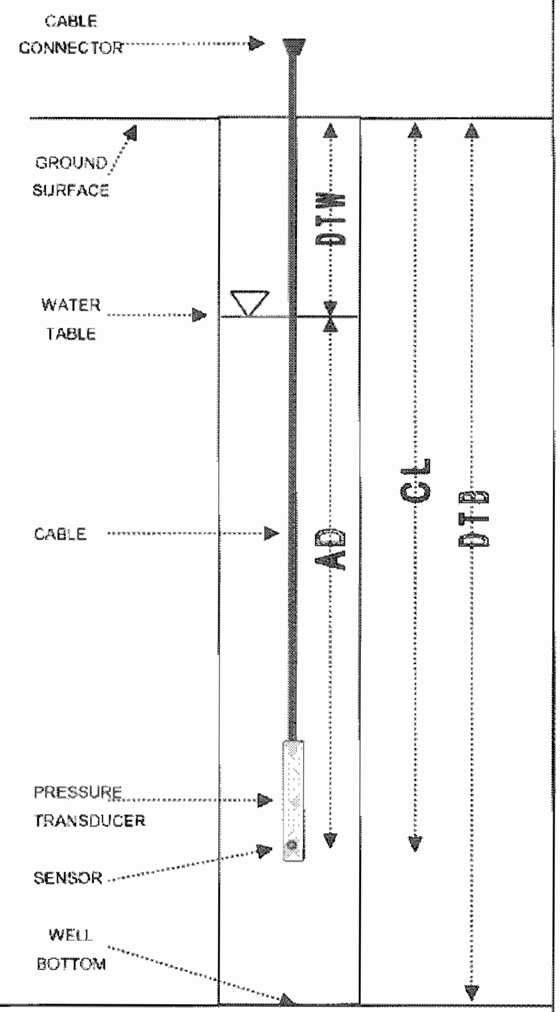
STATIC GROUNDWATER TABLE ELEVATION (FT) 1.19

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (If transducer is functioning properly)

DEPTH TO BOTTOM:		36.00	FT
GROUND ELEVATION:		14.122	FT M.S.L.
CASING ELEVATION:		13.364	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.76	FT
MEASURED CABLE LENGTH		--	FT
TIME OF MEASUREMENT:		10:12	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		12.17	FT
ACTUAL DEPTH:	+	14.62	FT
THEORETICAL CABLE LENGTH:	=	26.79	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		13.364	FT M.S.L.
DEPTH TO WATER:	−	12.17	FT
REFERENCE ELEVATION:	=	1.190	FT M.S.L.
TEST NAME:		MW-66-36	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		10:13	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: MW-111 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	17.70	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	18.93	DATE	
PSI CAPACITY	30	CASING ELEVATION (FT)	18.38		
SERIAL NUMBER		CASING DIAMETER (INCH)	2		

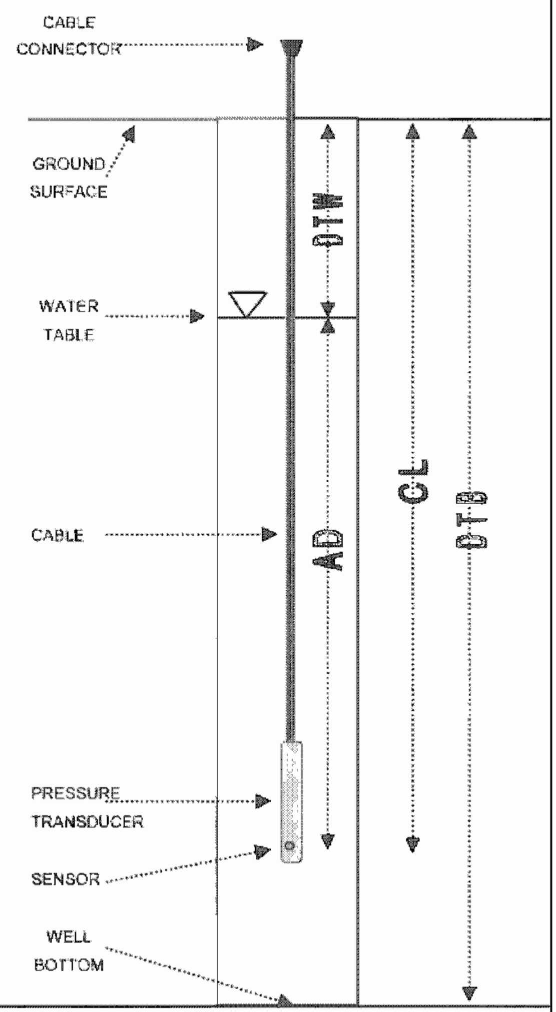
STATIC GROUNDWATER TABLE ELEVATION (FT) 18.38

GZA ENGINEER M. Britos A Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		17.70	FT
GROUND ELEVATION:		18.93	FT M.S.L.
CASING ELEVATION:		18.38	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.55	FT
		--	FT
TIME OF MEASUREMENT:		13:20	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:			FT
ACTUAL DEPTH:	+		FT
THEORETICAL CABLE LENGTH:	=	0.00	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		18.38	FT M.S.L.
DEPTH TO WATER:	−	0.00	FT
REFERENCE ELEVATION:	=	18.380	FT M.S.L.
TEST NAME:		MW-111	
LOGGING INTERVAL:		20	MIN
TEST START TIME:			HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: U3-C1 SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	NA	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	15.003	DATE	1/22/09
PSI CAPACITY	30	CASING ELEVATION (FT)	18.060		
SERIAL NUMBER	5548	CASING DIAMETER (INCH)	2		

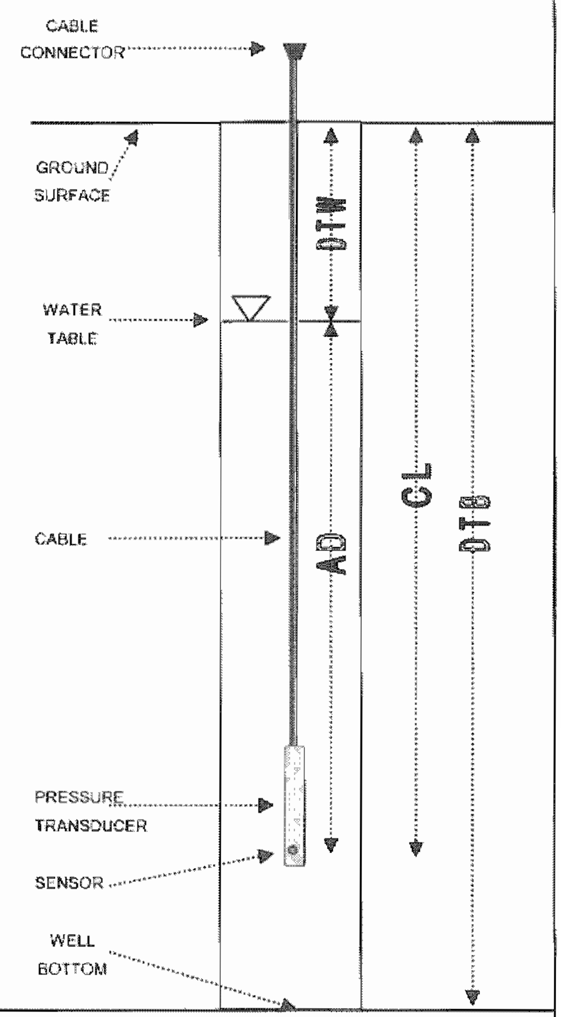
STATIC GROUNDWATER TABLE ELEVATION (FT): 4.85

GZA ENGINEER: M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		NA	FT
GROUND ELEVATION:		15.003	FT M.S.L.
CASING ELEVATION:		18.060	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		above	
DISTANCE FROM CASING TO GROUND (+ OR -):		3.057	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:26	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		13.21	FT
ACTUAL DEPTH:	+	8.142	FT
THEORETICAL CABLE LENGTH:	=	21.352	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		18.060	FT M.S.L.
DEPTH TO WATER:	−	13.21	FT
REFERENCE ELEVATION:	=	4.850	FT M.S.L.
TEST NAME:		U3-C1	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:27	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID	U3-3
		SHEET	1 of 1
		FILE NO	01.0017869.91
		PROJECT LOCATION	Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	14.15	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.849	DATE	2/10/09
PSI CAPACITY	30	CASING ELEVATION (FT)	14.599		
SERIAL NUMBER	4318	CASING DIAMETER (INCH)	6		

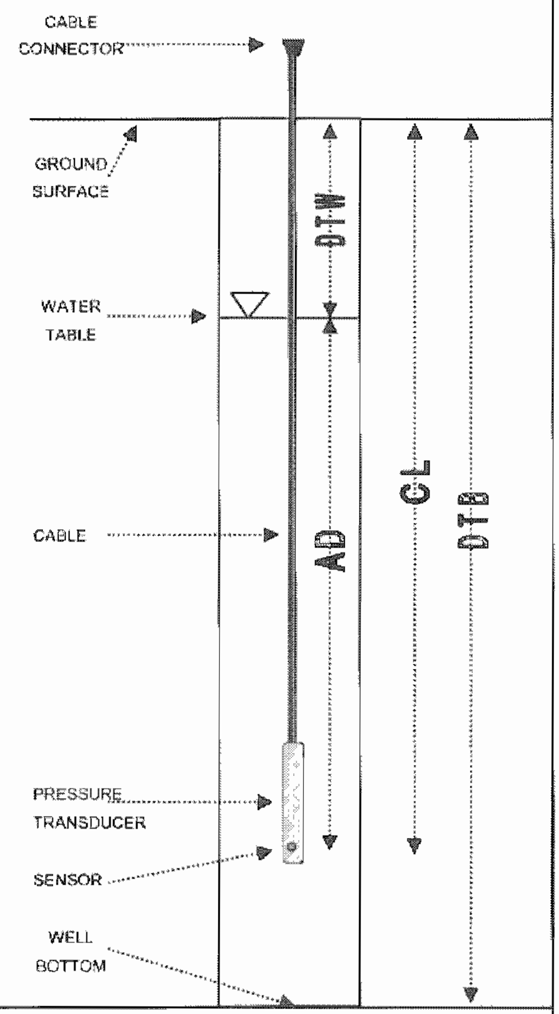
STATIC GROUNDWATER TABLE ELEVATION (FT) 5.50

GZA ENGINEER M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		14.15	FT
GROUND ELEVATION:		14.849	FT M.S.L.
CASING ELEVATION:		14.599	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.250	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		13:00	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		9.10	FT
ACTUAL DEPTH:	+	6.291	FT
THEORETICAL CABLE LENGTH:	=	15.391	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		14.599	FT M.S.L.
DEPTH TO WATER:	−	9.10	FT
REFERENCE ELEVATION:	=	5.499	FT M.S.L.
TEST NAME:		U3-3	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		13:00	HRS



LEGEND: **DTW** - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: U3-4D SHEET: 1 of 1 FILE NO.: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	27.25	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	14.849	DATE	2/10/09
PSI CAPACITY	30	CASING ELEVATION (FT)	14.519		
SERIAL NUMBER	14301	CASING DIAMETER (INCH)	4		

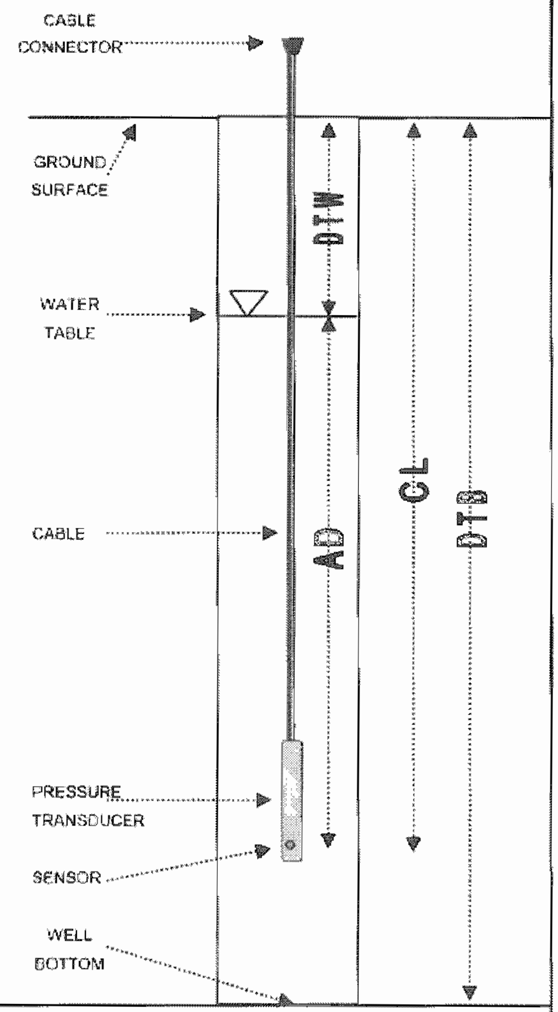
STATIC GROUNDWATER TABLE ELEVATION (FT): 3.66

GZA ENGINEER: M. Britos

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		27.25	FT
GROUND ELEVATION:		14.849	FT M.S.L.
CASING ELEVATION:		14.519	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		below	
DISTANCE FROM CASING TO GROUND (+ OR -):		-0.330	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:48	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		10.86	FT
ACTUAL DEPTH:	+	49.678	FT
THEORETICAL CABLE LENGTH:	=	60.538	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		14.519	FT M.S.L.
DEPTH TO WATER:	−	10.86	FT
REFERENCE ELEVATION:	=	3.659	FT M.S.L.
TEST NAME:		U3-4D	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:48	HRS



LEGEND:
DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

TRANSDUCER INSTALLATION LOG

GZA GEOENVIRONMENTAL OF NEW YORK 440 NINTH AVENUE, 18th FLOOR NEW YORK, NEW YORK 10001 SCIENTISTS AND ENGINEERS	Client Entergy Indian Point Energy Center	WELL ID: OUT-1 SHEET: 1 of 1 FILE NO: 01.0017869.91 PROJECT LOCATION: Indian Point

MANUFACTURER	In-Situ	FINAL BORING DEPTH (FT)	--	DATUM	NGVD 29
MAKE	MiniTroll	GROUND ELEVATION (FT)	8.20	DATE	1/21/09
PSI CAPACITY	30 vented	CASING ELEVATION (FT)	11.89		
SERIAL NUMBER	14114	CASING DIAMETER (INCH)	2		

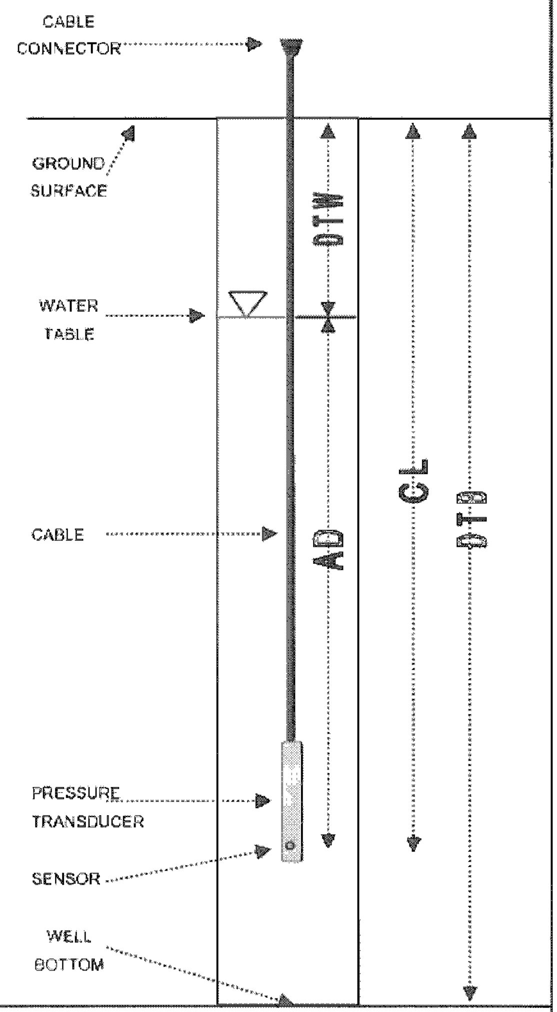
STATIC GROUNDWATER TABLE ELEVATION (FT): 4.43

GZA ENGINEER: M. Britos A. Altieri

ELEVATION OF MEASURING POINT - DEPTH TO WATER = REFERENCE ELEVATION (WATER TABLE ELEVATION)

DEPTH TO WATER + ACTUAL DEPTH = CABLE LENGTH (if transducer is functioning properly)

DEPTH TO BOTTOM:		--	FT
GROUND ELEVATION:		8.20	FT M.S.L.
CASING ELEVATION:		11.89	FT M.S.L.
CASING ABOVE (+) OR BELOW (-) GROUND:		above	
DISTANCE FROM CASING TO GROUND (+ OR -):		3.69	FT
MEASURED CABLE LENGTH:		--	FT
TIME OF MEASUREMENT:		9:52	HRS
MEASUREMENT TAKEN FROM:		TOC	
DEPTH TO WATER:		11.89	FT
ACTUAL DEPTH:	+	7.460	FT
THEORETICAL CABLE LENGTH:	=	19.351	FT
HAVE CLOCKS BEEN SYNCHRONIZED?		☑	check
IS TRANSDUCER SET TO TAKE "SURFACE" READINGS?		☑	check
ELEVATION OF MEASURING POINT:		11.891	FT M.S.L.
DEPTH TO WATER:	−	7.460	FT
REFERENCE ELEVATION:	=	4.431	FT M.S.L.
TEST NAME:		OUT-1	
LOGGING INTERVAL:		20	MIN
TEST START TIME:		9:53	HRS



LEGEND:
DTW - DEPTH TO WATER
DTB - DEPTH TO BOTTOM OF WELL
AD - ACTUAL DEPTH OF TRANSDUCER UNDER WATER
CL - CABLE LENGTH FROM SENSOR TO GROUND SURFACE/ TOP OF CASING

NOTES:

APPENDIX C: CHAINS OF CUSTODY

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos   Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)						Comments Note: extra sample is required for sample specific QC
MW-50-66-(021)	03/18/09	1516	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No (circled)   Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	3/18/09	1600	1 SECURED STORAGE	3/18/09	1600
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N = Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY   **YELLOW = FILE**   **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)						Comments Note: extra sample is required for sample specific QC
U1-CSS-(011)	03/18/09	1305	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ____
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	3/18/09	1601	1 SECURED STORAGE	3/18/09	1601
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos — Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)	<-- Preservative Type (6) / Comments: Note: extra sample is required for sample specific QC
MW-66-21-(008)	03/17/09	1200	N	N	GW	Y	Y	1	1	1	1	1	2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No (circled)

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 Miguel A B[illegible]	3/17/09	1459	1 SECURED STORAGE	3/17/09	1459
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

1) Chain of Custody Number = Client Determined
2) QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).
6) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405

Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247

Address: 450 Broadway, Suite 3, Buchanan, NY 10511

Collected by: Miguel Britos Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							<-- Preservative Type (6) Comments Note: extra sample is required for sample specific QC
MW-67-173-(008)	03/17/09	1400	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ___ Specify: ___ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ___
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	3/17/09	1500	1 SECURED STORAGE	3/17/09	1500
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

) Chain of Custody Number = Client Determined
) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact?
YES NO
Cooler Temp:
C

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

GEL Chain of Custody and Analytical Request

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

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

age: 1 of 1
roject #: Entergy GW Mon Prog
EL Quote #:
OC Number (1):
O Number: 50013510

GEL Work Order Number:

lient Name: Entergy Phone #: (914) 736-8405
roject/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
ddress: 450 Broadway, Suite 3, Buchanan, NY 10511
ollected by: Miguel Britos Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)						<-- Preservative Type (6) / Comments Note: extra sample is required for sample specific QC
MW-42-49-(016)	03/16/09	1450	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ____
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	3/16/09	1520	1 SECURED STORAGE	3/16/09	152[illegible]
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

1) Chain of Custody Number = Client Determined
2) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1)
6) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							<-- Preservative Type (6) **Comments** Note: extra sample is required for sample specific QC
MW-53-120-(014)	03/16/09	0940	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results Yes / No (circled)

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern (circled) Pacific
Central Other ____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	3/16/09	1521	SECURED STORAGE	3/16/09	1521
2						
3						

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P= Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1)
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA / M.B — Send Results To: Patrick Donahue

Sample Analysis Requested [5] (Fill in the number of containers for each test) — <-- Preservative Type (6)

Should this sample be considered:

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							Comments Note: extra sample is required for sample specific QC
MW-67-39-(008)	01/27/09	1615	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-67-105-(007)	01/27/09	1645	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-67-173-(007)	01/27/09	1633	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-67-219-(007)	01/27/09	1234	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-67-276-(007)	01/27/09	1301	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-67-323-(007)	01/27/09	1350	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-67-340-(007)	01/27/09	1244	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) — Fax Results: Yes / No — Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards
This is a split sample observed by the NRC

Sample Collection Time Zone: Eastern, Pacific, Central, Other ____, Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time
1	[signature]	1/27/09	1730	1	secure storage	1/27/09	1730
2				2			
3				3			

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA / MB — Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							Comments Note: extra sample is required for sample specific QC
MW-66-21-(007)	01/27/09	1352	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-66-36-(007)	01/27/09	1307	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No (circled)

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards
This is a split sample observed by the NRC

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time
1	[signature]	4/27/09	1720	1	Secure Storage	4/27/09	1720
2				2			
3				3			

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

age: 1 of 1
roject #: Entergy GW Mon Prog
iEL Quote #:
'OC Number (1):
O Number: 50013510

GEL Work Order Number:

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

'lient Name: Entergy — Phone #: (914) 736-8405
'roject/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
ddress: 450 Broadway, Suite 3, Buchanan, NY 10511
'ollected by: Miguel Britos — Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								<-- Preservative Type (6) / Comments: Note: extra sample is required for sample specific QC
MW-42-49-(015)	01/26/09	1616	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

emarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	1/26/09	1700	1 SECURED STORAGE	1/26/09	1700
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

) Chain of Custody Number = Client Determined
) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C = Composite
) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1)
) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos — Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)	Comments (<-- Preservative Type (6)) Note: extra sample is required for sample specific QC
MW-53-82-(010)	01 26 09	1200	N	N	GW	Y	Y	1	1	1	1	1	2 Liter Poly
MW-53-120-(013)	01 26 09	1243	N	N	GW	Y	Y	1	1	1	1	1	2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) — Fax Results: Yes / No (circled: No)

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

***Remarks:** Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ___ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 Miguel A. Br[illegible]	1/26/09	1701	1 SECURED STORAGE	1/26/09	1701
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes: N = Normal Sample, **TB** = Trip Blank, **FD**= Field Duplicate, **EB** = Equipment Blank, **MS**= Matrix Spike Sample, **MSD**= Matrix Spike Duplicate Sample, **G**= Grab, **C**= Composite
3) Field Filtered: For liquid matrices, indicate with a **Y** - for yes the sample was field filtered or **N** - for sample was not field filtered.
4) Matrix Codes: **DW** Drinking Water, **GW** Groundwater, **SW** Surface Water, **WW**=Waste Water, **W**=Water, ML=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1)
6) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA**= Sulfuric Acid, **AA**= Ascorbic Acid, **HX**= Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: MB / AA Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Should this sample be considered:

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							Comments Note: extra sample is required for sample specific QC
MW-62-18-(008)	01/23/09	1155	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-62-37-(008)	01/23/09	1220	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-62-53-(007)	01/23/09	1244	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-62-71-(008)	01/23/09	1212	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-62-92-(008)	01/23/09	1228	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-62-138-(008)	01/23/09	1250	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-62-182-(008)	01/23/09	1349	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other ______
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	1/23/09	1410	1 Secure Storage	1/23/09	1410
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1)
6) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MB — Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							Comments Note: extra sample is required for sample specific QC
MW-36-24-(013)	01/22/09	1248	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-36-52-(012)	01/22/09	1259	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other ______
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	1/22/09	1620	Secure Storage	1/22/09	1620
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: MB/AA Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							<-- Preservative Type (6) Comments Note: extra sample is required for sample specific QC
MW-50-42-(016)	01/22/09	1523	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-50-66-(020)	01/22/09	1601	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other ____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time
1	[signature]	1/22/09	1620	1	Secure Storage	1/22/09	1620
2				2			
3				3			

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C = Composite
3.) Field Filtered. For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. **8260B**, **6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy | Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center | Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MB | Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								Comments — <-- Preservative Type (6); Note: extra sample is required for sample specific QC
MW-37-22-(013)	01/21/09	1427	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-37-32-(013)	01/21/09	1430	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-37-40-(013)	01/22/09	1305	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-37-57-(013)	01/21/09	1422	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) | Fax Results: Yes / No | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

***Remarks:** Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern, Pacific, Central, Other ____, Mountain

Chain of Custody Signatures					
Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	1/21/09	1530	Secure	1/21/09	1530
1 [signature]	1/22/09	1620	1 Storage	1/22/09	1620
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX | Date Shipped:
Airbill #:
Airbill #:

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

1) Chain of Custody Number = Client Determined
2) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos   Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							<-- Preservative Type (6) **Comments** Note: extra sample is required for sample specific QC
MW-51-40-(010)	1/20/09	1450	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-51-79-(010)	1/20/09	1521	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-51-104-(008)	1/20/09	1046	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-51-135-(008)	1/20/09	1102	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-51-163-(008)	1/20/09	1144	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-51-189-(008)	1/20/09	1133	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern, Pacific, Central, Other ____, Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	1/21/09	0900	SECURED STORAGE	1/21/09	0900
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N= Normal Sample, **TB** = Trip Blank, **FD**= Field Duplicate, **EB** = Equipment Blank, **MS**= Matrix Spike Sample, **MSD**= Matrix Spike Duplicate Sample, **G**= Grab, **C**= Composite
3.) Field Filtered: For liquid matrices, indicate with a **Y** - for yes the sample was field filtered or **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B-* 3, *6010B/7470A* - 1).
6.) Preservative Type: **HA**= Hydrochloric Acid, **NI** = Nitric Acid, **SH**= Sodium Hydroxide, SA= Sulfuric Acid, **AA**= Ascorbic Acid, **HX**= Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							<-- Preservative Type (6) Comments Note: extra sample is required for sample specifi QC
MW-40-27-(006)	1/19/09	1429	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-40-46-(007)	1/19/09	1428	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-40-81-(007)	1/19/09	1038	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-40-100-(009)	1/19/09	1152	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-40-127-(009)	1/19/09	1125	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-40-162-(007)	1/19/09	1147	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other ____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	1/21/09	0901	SECURED STORAGE	1/21/09	0901
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact?
YES NO
Cooler Temp:
C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

NRC FORM 303 (4-2004) U.S. NUCLEAR REGULATORY COMMISSION

REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY

LABORATORY:

LABORATORY USE ONLY

CONTROL NUMBER

SAMPLE LOCATION (LICENSEE): INDIAN POINT ENERGY CENTER

LICENSEE NUMBER | DOCKET NO.

SAMPLE SUBMITTED

# TOTAL	TYPE	VOLUME	WEIGHT
1	GROUND WATER	2000 ML	~ 2 Kg

DATE SAMPLES SUBMITTED

PRIORITY: ☐ ROUTINE ☐ URGENT

SAMPLE COLLECTION INTERVAL

	MONTH	DAY	YEAR	TIME
START				
STOP				

INSPECTOR RESPONSIBLE: Jim Noggle (USNRC)

TELEPHONE NUMBER: (610) 337-5063

ANALYSIS TO BE PERFORMED	LIST DESIRED LLD *(Optional)*	OTHER TYPE OF ANALYSIS *(Specify)*	LIST DESIRED LLD *(Optional)*
☐ GROSS ALPHA (GA)		☒ STRONTIUM-90 (Sr90)	
☐ GROSS BETA (GB)		☒ NICKEL-63 (Ni63)	
☒ GAMMA SPEC (GS)		☐	
☒ TRITIUM (H3)		☐	
☐ CARBON-14 (C14)		☐	
☐ IODINE-125 (I125)		☐	

RELENQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
[signature]	[signature]	01/27/09	1710	Verify correct samples
[signature]	[signature]	1/27/09	1710	Relinquished observed & verified sample
[signature]	SECURED STORAGE	01/27/09	1710	Secured Storage.

FEE RECOVERABLE ☐ NO ☒ YES

TAC NUMBER

REMARKS:

NOTE: SAMPLES WILL BE DISCARDED AFTER ANALYSIS UNLESS REASON ARE NOTED IN REMARKS ABOVE.

NRC FORM 303
(4-2004)

U.S. NUCLEAR REGULATORY COMMISSION

SAMPLE RECORD - Continued

LABORATORY: ______________________

LABORATORY USE ONLY

CONTROL NUMBER

SAMPLE NUMBER	SAMPLE NAME AND DESCRIPTION	COLLECTION DATE/TIME	REMARKS, PRESERVATIVE ANALYSIS REQUESTED, ETC.
MW-67-39-(008)	Ground Water Split Sample of MW-67-39-(008)	01/27/09 1615	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-105-(007)	Ground Water Split Sample of MW-67-105-(007)	01/27/09 1645	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-67-173-(007)	Ground Water Split Sample of MW-67-173-(007)	01/27/09 1633	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
* MW-67-219-(007)	Ground Water Split Sample of MW-67-219-(007)	01/27/09 1234	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
* MW-67-276-(007)	Ground Water Split Sample of MW-67-276-(007)	01/27/09 1301	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
* MW-67-323-(007)	Ground Water Split Sample of MW-67-323-(007)	01/27/09 1350	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
* MW-67-340-(007)	Ground Water Split Sample of MW-67-340-(007)	01/27/09 1244	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63

* From 1320 to 1340 these samples were not observed by NRC.

NRC FORM 303 (4-2004) U.S. NUCLEAR REGULATORY COMMISSION

REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY

LABORATORY: ____________________

LABORATORY USE ONLY

CONTROL NUMBER

SAMPLE LOCATION (LICENSEE): INDIAN POINT ENERGY CENTER

LICENSEE NUMBER | DOCKET NO.

SAMPLE SUBMITTED

# TOTAL	TYPE	VOLUME	WEIGHT
1	GROUND WATER	2000 ML	~ 2 Kg

DATE SAMPLES SUBMITTED

PRIORITY: ☐ ROUTINE ☐ URGENT

SAMPLE COLLECTION INTERVAL

	MONTH	DAY	YEAR	TIME
START				
STOP				

INSPECTOR RESPONSIBLE: Jim Noggle (USNRC)

TELEPHONE NUMBER: (610) 337-5063

ANALYSIS TO BE PERFORMED	LIST DESIRED LLD *(Optional)*	OTHER TYPE OF ANALYSIS *(Specify)*	LIST DESIRED LLD *(Optional)*
☐ GROSS ALPHA (GA)		☒ STRONTIUM-90 (Sr90)	
☐ GROSS BETA (GB)		☒ NICKEL-63 (Ni63)	
☒ GAMMA SPEC (GS)		☐	
☒ TRITIUM (H3)		☐	
☐ CARBON-14 (C14)		☐	
☐ IODINE-125 (I125)		☐	

RELENQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
[signature]	[signature]	01/27/09	1710	Verify correct samples
[signature]	[signature]	1/27/09	1710	Relinquished observed verified sample
[signature]	SECURED STORAGE	01/27/09	1710	Secured Storage.

FEE RECOVERABLE ☐ NO ☒ YES

TAC NUMBER ____________________

REMARKS:

NOTE: SAMPLES WILL BE DISCARDED AFTER ANALYSIS UNLESS REASON ARE NOTED IN REMARKS ABOVE.

NRC FORM 303 (4-2004)

U.S. NUCLEAR REGULATORY COMMISSION

LABORATORY USE ONLY

CONTROL NUMBER

SAMPLE RECORD - Continued

LABORATORY: ______

	SAMPLE NUMBER	SAMPLE NAME AND DESCRIPTION	COLLECTION DATE/TIME	REMARKS, PRESERVATIVE ANALYSIS REQUESTED, ETC.
	MW-67-39-(008)	Ground Water Split Sample of MW-67-39-(008)	01/27/09 1615	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
	MW-67-105-(007)	Ground Water Split Sample of MW-67-105-(007)	01/27/09 1645	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
	MW-67-173-(007)	Ground Water Split Sample of MW-67-173-(007)	01/27/09 1633	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
*	MW-67-219-(007)	Ground Water Split Sample of MW-67-219-(007)	01/27/09 1234	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
*	MW-67-276-(007)	Ground Water Split Sample of MW-67-276-(007)	01/27/09 1301	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
*	MW-67-323-(007)	Ground Water Split Sample of MW-67-323-(007)	01/27/09 1350	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
*	MW-67-340-(007)	Ground Water Split Sample of MW-67-340-(007)	01/27/09 1244	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63

* From 1320 to 1340 these samples were not observed by NRC.

NRC FORM 303 (4-2004) U.S. NUCLEAR REGULATORY COMMISSION

REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY

LABORATORY: ______________________

LABORATORY USE ONLY

CONTROL NUMBER

LICENSEE NUMBER	DOCKET NO.

SAMPLE LOCATION (LICENSEE)

INDIAN POINT ENERGY CENTER

SAMPLE SUBMITTED

# TOTAL	TYPE	VOLUME	WEIGHT
1	GROUND WATER	2000 ML	~ 2 Kg

DATE SAMPLES SUBMITTED

PRIORITY
- ☐ ROUTINE
- ☐ URGENT

SAMPLE COLLECTION INTERVAL

	MONTH	DAY	YEAR	TIME
START				
STOP				

INSPECTOR RESPONSIBLE: Jim Noggle (USNRC)

TELEPHONE NUMBER: (610) 337-5063

ANALYSIS TO BE PERFORMED	LIST DESIRED LLD *(Optional)*	OTHER TYPE OF ANALYSIS *(Specify)*	LIST DESIRED LLD *(Optional)*
☐ GROSS ALPHA (GA)		☒ STRONTIUM-90 (Sr90)	
☐ GROSS BETA (GB)		☒ NICKEL-63 (Ni63)	
☒ GAMMA SPEC (GS)		☐	
☒ TRITIUM (H3)		☐	
☐ CARBON-14 (C14)		☐	
☐ IODINE-125 (I125)		☐	

RELENQUISHED BY	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
[signature]	[signature]	01/27/09	1704	Verify correct samples
[signature]	[signature]	1/27/09	1704	Relenquished observed given p. SM
[signature]	SECURED STORAGE	1/27/09	1704	SECURED STORAGE

FEE RECOVERABLE ☐ NO ☒ YES TAC NUMBER ______________

REMARKS:

NOTE: SAMPLES WILL BE DISCARDED AFTER ANALYSIS UNLESS REASON ARE NOTED IN REMARKS ABOVE.

NRC FORM 303
(4-2004)

U.S. NUCLEAR REGULATORY COMMISSION

LABORATORY USE ONLY

CONTROL NUMBER

SAMPLE RECORD - Continued

LABORATORY: ______________________

SAMPLE NUMBER	SAMPLE NAME AND DESCRIPTION	COLLECTION DATE/TIME	REMARKS, PRESERVATIVE ANALYSIS REQUESTED, ETC.
* MW-66-21-(007)	Ground Water Split Sample of MW-66-21-(007)	01/27/09 1352	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
MW-66-36-(007)	Ground Water Split Sample of MW-66-36-(007)	01/27/09 1307	Sample is unfiltered & unpreserved. Analyze for Gamma Spec, H3, Sr90, Ni63
*			

* - From 1320 to 1340 sample collection was not observed by NRC.

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number (1):
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: MB/AA Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							Comments Note: extra sample is required for sample specific QC
																			<-- Preservative Type (6)
MW-54-37-(008)	02/03/09	1534	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-54-58-(008)	02/03/09	1453	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-54-123-(008)	02/03/09	1155	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-54-144-(008)	02/03/09	1241	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-54-173-(008)	02/03/09	1219	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-54-190-(008)	02/03/09	1235	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	2/3/09	1555	1 Secure storage	2/3/09	1555
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA / MB Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								<-- Preservative Type (6) / Comments Note: extra sample is required for sample specific QC
MW-58-26-(007)	02/03/09	1249	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-58-65-(007)	02/03/09	1205	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ______
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	02/03/09	1555	1 SECURED STORAGE	02/03/09	1555
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, **TB** = Trip Blank, **FD**= Field Duplicate, **EB** = Equipment Blank, **MS**= Matrix Spike Sample, **MSD**= Matrix Spike Duplicate Sample, **G**= Grab, **C** = Composite
3.) Field Filtered For liquid matrices, indicate with a **Y** - for yes the sample was field filtered or **N** - for sample was not field filtered.
4.) Matrix Codes **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, ML=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type **HA**= Hydrochloric Acid, **NI** = Nitric Acid, **SH**= Sodium Hydroxide, **SA**= Sulfuric Acid, **AA**= Ascorbic Acid, **HX**= Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MB   Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								<-- Preservative Type (6) **Comments** Note: extra sample is required for sample specific QC
MW-44-66-(011)	02/03/09	0940	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ___ Specify: ___ (Subject to Surcharge)   Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern   Pacific
Central   Other ___
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	02/03/09	1555	1 SECURED STORAGE	02/03/09	1555
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

) Chain of Custody Number = Client Determined
) QC Codes N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B - 3, 6010B/7470A - 1*).
) Preservative Type HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact?
YES NO
Cooler Temp:
___ C

WHITE = LABORATORY   YELLOW = FILE   PINK = CLIENT

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405

Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247

Address: 450 Broadway, Suite 3, Buchanan, NY 10511

Collected by: AA/MB   Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								<-- Preservative Type (6) / Comments Note: extra sample is required for sample specific QC
MW-44-102-(012)	02/02/09	1206	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No   Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	2/2/09	1830	1 Secure Storage	2/2/09	1830
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY   YELLOW = FILE   PINK = CLIENT

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number (1):
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AM MB   Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							<-- Preservative Type (6) **Comments** Note: extra sample is required for sample specific QC
MW-45-42-(015)	02/07/09	1807	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-45-61-(015)	07/05/09	1313	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No (circled)   Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern (circled) Pacific
Central Other ______
Mountain

Chain of Custody Signatures					
Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	2/2/09	1830	1 Sec Cage Storage	2/2/09	1830
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C = Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact?
YES NO
Cooler Temp:
C

WHITE = LABORATORY   YELLOW = FILE   PINK = CLIENT

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: MB / AH Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								Comments (<-- Preservative Type (6)) Note: extra sample is required for sample specific QC
MW-44-102-(012)	02/02/09	1206	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-44-66-(011)	~~02/02/09~~		N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	2/2/09	1830	Secure Storage	2/2/09	1830
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA1 MB — Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								Comments Note: extra sample is required for sample specific QC
MW-30-69-(023)	01/30/09	1100	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-30-84-(014)	01/30/09	1121	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) — Fax Results: Yes / No (circled: No) — Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	1/30/09	1215	Secure Storage	1/30/09	1215
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MB — Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Comments (<-- Preservative Type (6)) Note: extra sample is required for sample specific QC
MW-63-112-(008)	01/30/09	1439	N	N	GW	Y	Y	1	1	1	1	2 Liter Poly
MW-63-121-(008)	01/30/09	1441	N	N	GW	Y	Y	1	1	1	1	2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No (circled: No)

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	1/30/09	1510	1 Secure Storage	1/30/09	1510
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N= Normal Sample, **TB** = Trip Blank, **FD**= Field Duplicate, **EB** = Equipment Blank, **MS**= Matrix Spike Sample, **MSD**= Matrix Spike Duplicate Sample, **G**= Grab, **C**= Composite
3.) Field Filtered: For liquid matrices, indicate with a **Y** - for yes the sample was field filtered or **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: **HA**= Hydrochloric Acid, **NI** = Nitric Acid, **SH**= Sodium Hydroxide, **SA**= Sulfuric Acid, **AA**= Ascorbic Acid, **HX**= Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy | Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center | Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: MB | AA | Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							<-- Preservative Type (6) **Comments** Note: extra sample is required for sample specific QC
MW-42-78-(011)	01/30/09	1122	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) | Fax Results: Yes / No | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern Pacific Central Other ____ Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	1/30/09	1215	Secure Storage	1/30/09	1215
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX | Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B - 3, 6010B/7470A - 1*).
6.) Preservative Type HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

'age: 1 of 1
'roject #: Entergy GW Mon Prog
iEL Quote #:
'OC Number [1]:
O Number: 50013510

GEL Work Order Number:

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

'lient Name: Entergy   Phone #: (914) 736-8405
'roject/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
.ddress: 450 Broadway, Suite 3, Buchanan, NY 10511
'ollected by: AA/MB   Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								Comments (Note: extra sample is required for sample specific QC)
																			<-- Preservative Type (6)
MW-63-18-(008)	01/29/09	1346	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-63-34-(008)	01/29/09	1222	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-63-50-(008)	01/29/09	1406	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-63-93-(009)	01/29/09	1420	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-63-163-(008)	01/29/09	1157	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-63-174-(008)	01/29/09	1155	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

emarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	1/29/09	1510	1 secure storage	1/29/09	1510
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

Chain of Custody Number = Client Determined
QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY   YELLOW = FILE   PINK = CLIENT

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number (1):
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA / MB — Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							<-- Preservative Type (6) Comments Note: extra sample is required for sample specific QC
U3-T1-(023)	01/28/09	1200	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
U3-T2-(028)	01/28/09	1140	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	1/28/09	1345	SECURED STORAGE	1/28/09	1345
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: ____ *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos — Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							<-- Preservative Type (6) / Comments: Note: extra sample is required for sample specific QC
MW-55-24-(009)	02/11/09	1255	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern, Pacific, Central, Other ____, Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	02/11/09	1500	1 SECURED STORAGE	02/11/09	1500
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number (1):
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy | Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center | Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos | Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							<-- Preservative Type (6) / Comments: Note: extra sample is required for sample specific QC
U3-4D-(019)	02/10/09	1415	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) | Fax Results: Yes / No (circled) | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 [signature]	02/10/09	1430	1 SECURED STORAGE	02/10/09	1430
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX | Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: Miguel Britos — Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)						Comments Note: extra sample is required for sample specific QC
																		<-- Preservative Type (6)
MW-60-35-(008)	02/09/09	1612	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-53-(008)	02/09/09	1128	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-53-(008)-B	02/09/09	1135	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-53-(008)-D	02/09/09	1138	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-53-(008)-S	02/09/09	1148	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-72-(008)	02/09/09	1125	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-135-(008)	02/09/09	1204	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-154-(008)	02/09/09	1223	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-60-176-(008)	02/09/09	1308	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone
Eastern Pacific
Central Other ______
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1 Miguel A Britos	02/09/09	1655	1 SECURED STORAGE	02/09/09	1655
2			2		
3			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6.) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Page: 1 of 1
Project #: Entergy Ground Water Monitoring Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy | Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center | Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA / MB | Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								Comments (<-- Preservative Type (6)) Note: extra sample is required for sample specific QC
MW-31-49-(014)	02/06/09	1105	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-31-63-(014)	02/06/09	1153	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly
MW-31-85-(014)	02/06/09	1122	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No
Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone: Eastern / Pacific / Central / Other ____ / Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	2/6/09	1400	secure storage	2/6/09	1400
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX | Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B- 3, 6010B/7470A - 1).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: MB / AA   Send Results To: Patrick Donahue

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

<-- Preservative Type (6)

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)							Comments Note: extra sample is required for sample specific QC
MW-49-26-(015)	02/06/09	1303	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-49-42-(015)	02/06/09	957	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly
MW-49-65-(015)	02/06/09	959	N	N	GW	Y	Y	1	1	1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No   Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern, Pacific, Central, Other ____, Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	[signature]	2/6/09	1400	Secure Storage	2/6/09	1400
2						
3						

Sample Shipping and Delivery Details

GEL PM: Erin Trent
Method of Shipment: FEDEX   Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3.) Field Filtered For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered.
4.) Matrix Codes DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*).
6.) Preservative Type HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: *C*

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number (1):
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy   Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center   Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MS   Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)								<-- Preservative Type (6) Comments Note: extra sample is required for sample specific QC
MW-46-(015)	02/05/07	1346	N	N	GW	Y	Y	1	1	1	1								2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge)   Fax Results: Yes / No (circled)   Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern (circled) Pacific Central Other Mountain

Chain of Custody Signatures							**Sample Shipping and Delivery Details**
Relinquished By (Signed)	Date	Time		Received by (signed)	Date	Time	GEL PM: Erin Trent
[signature]	2/5/07	1435	1	Secure Storage	2/5/07	1435	Method of Shipment: FEDEX Date Shipped:
			2				Airbill #:
			3				Airbill #:

1) Chain of Custody Number = Client Determined
2) QC Codes: N = Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
3) Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
4) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B- 3, 6010B/7470A - 1*)
6) Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

WHITE = LABORATORY   YELLOW = FILE   PINK = CLIENT

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Chain of Custody and Analytical Request

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

GEL Work Order Number:

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

Client Name: Entergy Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MB Send Results To: Patrick Donahue

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

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)	Nickel 63 (Ni63)						Comments Note: extra sample is required for sample specific QC
																		<-- Preservative Type (6)
MW-55-35-(008)	02/04/09	1346	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly
MW-55-54-(009)	02/04/09	1242	N	N	GW	Y	Y	1	1	1	1	1						2 Liter Poly

TAT Requested: Normal: ✓ Rush: ___ Specify: ___ (Subject to Surcharge) Fax Results: Yes / No Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern, Pacific, Central, Other ___, Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	2/4/09	1705	1 Secure Storage	2/4/09	1705
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX Date Shipped:
Airbill #:
Airbill #:

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: C

Chain of Custody Number = Client Determined
QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1)
Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

GEL Chain of Custody and Analytical Request

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

Page: 1 of 1
Project #: Entergy GW Mon Prog
GEL Quote #:
COC Number [1]:
PO Number: 50013510

GEL Work Order Number:

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

Client Name: Entergy — Phone #: (914) 736-8405
Project/Site Name: Indian Point Energy Center — Fax #: (914) 734-6247
Address: 450 Broadway, Suite 3, Buchanan, NY 10511
Collected by: AA/MB — Send Results To: Patrick Donahue

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

Sample ID (* For composites - indicate start and stop date/time)	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	Tritium (H3)	Gamma Spec (GS)	Strontium 90 (Sr90)							<-- Preservative Type (6) / Comments: Note: extra sample is required for sample specific QC
MW-32-149-(009)	02/04/09	1350	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-32-173-(007)	02/04/09	1340	N	N	GW	Y	Y	1	1	1	1							2 Liter Poly
MW-32-190-(010)	02/04/09	1345	N	N	GW	Y	Y		1	1	1							2 Liter Poly
MW-32-59-(008)	02/04/09	1546	N	N	GW	Y	Y		1	1	1							2 Liter Poly
MW-32-85-(011)	02/04/09	1549	N	N	GW	Y	Y		1	1	1							2 Liter Poly

TAT Requested: Normal: ✓ Rush: ____ Specify: ____ (Subject to Surcharge) Fax Results: Yes / No (circled)

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Sample Collection Time Zone: Eastern (circled) Pacific Central Other ____ Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
[signature]	02/04/09	1705	1 SECURED STORAGE	02/04/09	1705
			2		
			3		

Sample Shipping and Delivery Details

GEL PM: ERIN TREN
Method of Shipment: FEDEX — Date Shipped:
Airbill #:
Airbill #:

Chain of Custody Number - Client Determined
QC Codes: N= Normal Sample, TB = Trip Blank, FD= Field Duplicate, EB = Equipment Blank, MS= Matrix Spike Sample, MSD= Matrix Spike Duplicate Sample, G= Grab, C= Composite
Field Filtered: For liquid matrices, indicate with a Y - for yes the sample was field filtered or N - for sample was not field filtered
Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. *8260B - 3, 6010B/7470A - 1*)
Preservative Type: HA= Hydrochloric Acid, NI = Nitric Acid, SH= Sodium Hydroxide, SA= Sulfuric Acid, AA= Ascorbic Acid, HX= Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp. C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

APPENDIX D: 1ST QUARTER 2009 SAMPLING DATA SHEETS

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	1/14/09
Client:	Entergy Nuclear NorthEast	**GZA Engineers:**	Miguel Britos
Site:	**INDIAN POINT ENERGY CENTER**		Angela Altieri
Location:	Buchanan, NY		
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Altieri	**Weather:** Sunny 20's
Time Arrived onSite:	0700		
Time Left Site:	1700		

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-40-27(006)	IPEC	2 L	poly			
-46(007)						
-81(007)						
-100(009)						
-127(009)						
-162(007)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

Lines (tubing) frozen upon arrival.

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	1/20/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Ahern

GZA Engineer:	Miguel Britos	Angela Ahern	Weather: Sunny upper 20's
Time Arrived onSite:	0630		
Time Left Site:	1630		

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-51-40-(010)	IPEC	2 L	poly			
-79-(010)						
-104-(008)						
-135-(008)						
-163-(008)						
-189-(008)	↓	↓	↓			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

Broke 2' of ice on top of wells lid from snow plow.
Lines frozen.

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	4/21/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Altieri

GZA Engineer:	Miguel Britos	Angela Altieri
Time Arrived onSite:	700	700
Time Left Site:	1620	1620

Weather: 70's, sun

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW 37-32(13)	IPEC	2L	Poly			
MW 37-22(13)	↓	↓	↓			
MW-37-40(13)	↓	↓	↓			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
DWT-1	X	X	old trans. stopped 12/17/08. Replaced	
		reset	transducer	
MW37-32	X	~~X~~	9.75 | ~~5.350~~ 5.355 | + 0.274	
MW37-22	X	X	9.76' | 5.220 | + 0.128	
MW-37-40	X	X	8.08' | 6.080 | + 0.712	
MW-37-57			8.18' | 6.763 | + 0.16	
			DTW | trans. reading | off by this amount	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

WELL ID: MW37-22
SAMPLE ID: 013

GZA GeoEnvironmental of New York
Low-Flow Sampling Data Sheet

CLIENT: Entergy - IPEC
SITE: Buchanan, NY
WEATHER: 20'S, Sun

PROJECT NO: 01.0017869.91
DATE: 1/21/09
SAMPLER(S): AA/ UB
PUMP DEPTH: 17 ft

WATER QUALITY:

Time	circle one: DTW or GW Elevation	pH (SU)	Specific Conductivity (S/cm)	Turbidity (NTU)	Dissolved Oxygen (g/l)	Temp (°C)	ORP	Rate (gal/hr)	Notes
1302	9.81'		Pump on						
1312	9.82	7.15	2.624	—	2.30	20.16	-32.0		
1316	9.82	7.16	2.588	10.11	1.57	20.43	-80.8		
1321	9.83	7.24	2.566	5.71	1.22	20.65	-76.7		
1326	9.83	7.25	2.555	5.87	1.03	20.71	-90.7		
1331	9.84	7.29	2.554	8.03	0.79	20.76	-97.6		
1336	9.84	7.25	2.542	4.75	0.72	20.78	-111.8		1 gal purged
1341	9.86	7.30	2.541	4.91	0.66	20.79	-116.8		
1346	9.86	7.27	2.540	4.68	0.63	20.79	-122.2		
1351	9.87	7.30	2.541	4.21	0.59	20.79	-131.5		
1357	9.87	7.28	2.542	4.03	0.57	20.75	-132.1		
1402	9.88	7.27	2.540	3.98	0.53	20.79	-135.3		
1407	Start	Sampling							
1427	Stop	Sampling -		2L	IPEC				

Equipment Used	Equipment Identification #
YSI 556 MPS Reader and 5563 Sonde	1
flow meter	
turbidity meter	200701254

NOTES AND OBSERVATIONS:

Depth and Depth to Water (DTW) measurements are given in feet from top of casing.

Groundwater Elevation measurements are given in feet msl.

~2.2 gal purged

WELL ID: MW37-3.
SAMPLE ID: 013

GZA GeoEnvironmental of New York
Low-Flow Sampling Data Sheet

CLIENT: Entergy - IPEC
SITE: Buchanan, NY
WEATHER: 25°, Sun

PROJECT NO: 01.0017869.91
DATE: 1/21/09
SAMPLER(S): AB/MB
PUMP DEPTH: 29 ft

WATER QUALITY:

Time	circle one: DTW or GW Elevation	pH (SU)	Specific Conductivity (S/cm)	Turbidity (NTU)	Dissolved Oxygen (g/l)	Temp (°C)	ORP	Rate (gal/hr)	Notes
1302	14.541	Pump on							
1313	14.464	7.20	1.757	—	1.26	20.17	155.8		
1318	14.434	7.28	1.648	8.44	0.95	20.39	148.3		
1322	14.411	7.33	1.594	3.68	0.81	20.47	138.7		
1327	14.415	7.39	1.558	4.16	0.71	20.52	136.9		
1332	14.419	7.44	1.536	4.76	0.66	20.58	129.2		
1337	14.403	7.47	1.530	3.16	0.61	20.59	122.7		1 gal purg
1341 ~~1338~~	14.417	7.50	1.523	2.41	0.57	20.61	118.7		
1346	14.388	7.53	1.516	2.23	0.53	20.62	113.0		
1352	14.374	7.56	1.511	2.27	0.48	20.62	107.4		
1358	14.351	7.58	1.506	3.16	0.52	20.62	101.8		
1403	14.370	7.59	1.503	3.38	0.59	20.63	97.4		
1409	Start sampling								
1430	Stop sampling - 2L			IPEC					

Equipment Used	Equipment Identification #
YSI 556 MPS Reader and 5563 Sonde	6
flow meter	
turbidity meter	20070125

NOTES AND OBSERVATIONS:

Depth and Depth to Water (DTW) measurements are given in feet from top of casing.

Groundwater Elevation measurements are given in feet msl.

~2.2 gal purged

WELL ID: MW-37-40
SAMPLE ID: 013

GZA GeoEnvironmental of New York
Low-Flow Sampling Data Sheet

CLIENT: Entergy - IPEC
SITE: Buchanan, NY
WEATHER: 20's, sun

PROJECT NO: 01.0017869.91
DATE: 1/21/09
SAMPLER(S): AA / MB
PUMP DEPTH: 39 ft

WATER QUALITY:

Time	circle one: DTW or GW Elevation	pH (SU)	Specific Conductivity (S/cm)	Turbidity (NTU)	Dissolved Oxygen (g/l)	Temp (°C)	ORP	Rate (gal/hr)	Notes
1301	12.168	Pump on							
1314	12.142	7.34	1.693	–	1.40	20.33	18.3		
1319	12.124	7.23	1.642	8.70	1.18	20.71	21.0		
1323	12.121	7.23	1.619	4.85	1.11	20.88	21.4		
1328	12.117	7.18	1.607	5.04	1.08	21.06	24.5		
1333	12.108	7.16	1.605	3.71	1.04	21.15	30.0		
1338	12.101	7.15	1.605	2.92	1.02	21.22	33.7		
1343	12.093	7.17	1.605	3.06	1.04	21.27	36.0		1 gal purged
1348	12.093	7.17	1.606	3.22	1.02	21.29	36.1		
1351	Start sampling								
1422	Stop sampling - 2L IPEC								

Equipment Used	Equipment Identification #
YSI 556 MPS Reader and 5563 Sonde	3
flow meter	
turbidity meter	20070254

NOTES AND OBSERVATIONS:

Depth and Depth to Water (DTW) measurements are given in feet from top of casing.

Groundwater Elevation measurements are given in feet msl.

~1.3 gal purged

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	Date:	4/22/09
Client:	Entergy Nuclear NorthEast	GZA Engineers:	Miguel Britos
Site:	**INDIAN POINT ENERGY CENTER**		Angela Altieri
Location:	Buchanan, NY		
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Altieri	Weather: 30's, cloudy
Time Arrived onSite:	700	700	
Time Left Site:	540	540	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW37-40(013)	IPEC	2L	poly			
MW36-24(013)						
MW36-52(013)						
MW50-42(016)						
MW50-66(020)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
			DTW trans reading should read off by amt	
MW36-24	checked		4.04 7.591 11.598 -0.033	
MW-36-52	checked	X	5.07 6.913 11.670 -0.243	
U3-C1	checked & changed trans.		13.18 5.684 18.860 -0.804	
HR-1	checked; installed second trans.		16.26 0.21 13.496 +.02	
MW50-42			11.36 3.309 14.453 -0.186	
MW50-66			8.39 6.057 14.614 +0.167	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

Log from 4/21/09 MW37-40 should be MW37-57. I included a copy with ~~these~~ today's stuff.

45 min safety meeting this morning

Project:	Radiological Groundwater Sampling Program	Date:	4/23/09
Client:	Entergy Nuclear NorthEast	GZA Engineers:	Miguel Brilos
Site:	INDIAN POINT ENERGY CENTER		Angela Alben
Location:	Buchanan, NY		
Project #:	01.0017869.91		

ZA Engineer:	Miguel Brilos	Angela Alben	Weather: 30's, sun
Time Arrived onSite:	700	700	
Time Left Site:	1630	1630	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
62-18(008)	IPEC	2L	poly			
62-37(008)						
62-53(007)						
62-71(008)						
62-92(008)						
62-138(008)						
62-182(008)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
			DTW transd. change in differen	
MW62-18	x	x	11.07 1.373 12.810 + 0.367	
MW62-37			11.44 1.373 12.810 + 0.003	
UWT-1		x	Changed to nonvented transducer	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

25 min - snow removal around MW62
1 hr - when we went to wells tubing was frozen & we had to use the heat gun to defrost the lines.

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	1/26/09
Client:	Entergy Nuclear NorthEast	**GZA Engineers:**	Miguel Britos
Site:	**INDIAN POINT ENERGY CENTER**		Angela Altien
Location:	Buchanan, NY		
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Altien	Weather: p. sunny 20's
Time Arrived onSite:	0700		
Time Left Site:	1800		

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-42-49	(015) IPEC	2 L	poly			
MW-53-82	(010)					
MW-53-120	(013)					

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
MW-42-78	✓	✓	Reprogram because of 0.75 difference	
MW-53-82	✓	✓	" " " 0.372 "	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

Freezing temperatures. Tubing freezes outside well.

Project:	Radiological Groundwater Sampling Program	**Date:**	4/27/09
Client:	Entergy Nuclear NorthEast	**GZA Engineers:**	Miguel Britos
Site:	**INDIAN POINT ENERGY CENTER**		Angela Alben
Location:	Buchanan, NY		
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Alben	Weather: 30's, P. cloudy
Time Arrived onSite:	700	700	
Time Left Site:	1900	1900	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW66-21 (007)	IPEC	2L	Poly	NRC	2L	Poly
MW66-36 (007)	IPEC	2L	↓	NRC	2L	↓
MW67-39 (008)	↓	↓	↓	↓	↓	↓
MW67-105 (007)	↓	↓	↓	↓	↓	↓
MW67-173 (007)	↓	↓	↓	↓	↓	↓
MW67-219 (007)	↓	↓	↓	↓	↓	↓
MW67-276 (007)	↓	↓	↓	↓	↓	↓
MW67-323 (007)	↓	↓	↓	↓	↓	↓
MW67 340 (007)	↓	↓	↓	↓	↓	↓

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations				Follow-up Required?
			DTW	trans. Surface ice	trans. Actual depth	Add to Data	
MW66-21	X	X	0.284	0.284	7.357	+ 0.133	
MW66 36	X	X	1.066	1.066	not shown	+ 0.094	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

MW 63 - Pulled & Miguel spent [illegible] min breaking up on MW63

- NRC did not observe purging from 1320-1340 as noted on NRC's COC.

Project:	Radiological Groundwater Sampling Program	Date:	1/28/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	GZA Engineers:	Miguel Britos
Location:	Buchanan, NY		Angela Atten
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Atten	Weather: snow, then sleet & rain 33°F
Time Arrived onSite:	700	700	
Time Left Site:	1430	1430	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
U3-T1 (1023)	IPEC	2L	poly			
U3-T2 (1035)	IPEC	2L	poly			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations DTW	trans Surface rdg	Actual Depth	Ref. to Surface	Follow-up Required?
U3-T1	Checked		4.84	3.673	2.169	+.005	
U3-T2	Checked		4.72	3.806	2.093	+.014	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

3 hrs spent: went into FSB to check if could sample ^(MW-30) waiting for approval to go into RCA, went to 3 Rx Bldg to get in sample MW-30. Need to be in the schedule to go into RCA area. Recovered Sample at U3 T1 + T2. Then we were going to sample MW-30, but the Rx Bldg did not make it up the hill due to ice.

Transfer says we don't have to be in the schedule

- Entergy employees didn't come until 930 due to snow.

Project:	Radiological Groundwater Sampling Program	**Date:**	1/29/09
Client:	Entergy Nuclear NorthEast	**GZA Engineers:**	Miguel Britos
Site:	**INDIAN POINT ENERGY CENTER**		Angela Alten
Location:	Buchanan, NY		
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Alten	**Weather:** 20 S, Sun
Time Arrived onSite:	700	700	
Time Left Site:	1600	1600	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW63-18 (08)	IPEC	2L	poly			
63-34 (08)						
63-50 (08)						
63-93 (09)						
63 131 (08)						
63 174 (08)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations				Follow-up Required?
			DTW	trans. reading	Actual Depth	Attach Data	
MW63-18	x	x	13.48	-0.066	9.252	-0.414	c Batt 24 NS ok
MW63-34			13.43	-0.330	12.519	-0.036	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

~2 hrs spent defrosting lines - frozen

GZA FIELD ACTIVITIES SHEET

Project: Radiological Groundwater Sampling Program
Client: Entergy Nuclear NorthEast
Site: **INDIAN POINT ENERGY CENTER**
Location: Buchanan, NY
Project #: 01.0017869.91

Date: 1/30/09
GZA Engineers: Miguel Britos, Angela Alten

GZA Engineer:	Miguel Britos	Angela Alten
Time Arrived onSite:	700	700
Time Left Site:	1630	1630

Weather: cloudy, 30's, little snow flurries PM

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW42-78(611)	IPEC	2L	poly			
MW30-69(627)						
MW30-84(614)						
MW63-~~[illegible]~~ 112 (603)						
MW67-121(603)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
RW-1	X		taking depth readings	
MW30-69	X			
MW30-84	X			

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

MW42 - 30min - chipping ice in the well.

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/2/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Alten

GZA Engineer:	Miguel Britos	Angela Alten
Time Arrived onSite:	700	700
Time Left Site:	1900	1900

Weather: AM-30'S, Sun PM-cooler, cloudy

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW45-42(C5)	IPEC	2L	poly			
MW45-61(C5)	↓	↓	↓			
MW44-102(C3)						
MW44-67(C11)	↓	* 1L	↓			
		*Well did not recharge only 1L obtain Will try tomorrow morning				

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations DTW	trans. reading	Actual Depth	Add to Data	Follow-up Required?
MW44-67	✓	✓	59.63	73.590	4.414	-.260	
MW44-102			67.72	25.329	32.373	+.041	
MW45-42			25.17	28.665	15.939	+.029	
MW-45-61			26.36	26.744	34.945	+.063	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	Date:	2/3/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	GZA Engineers:	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Alten

GZA Engineer:	Miguel Britos	Angela Alten	Weather:
Time Arrived onSite:	700	700	Snow, 30's
Time Left Site:	1700	1700	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-44-66	IPEC	1L	Poly *	finished sampling from yesterday's purge		
MW58-26 (007)		2L				
MW58-65 (007)						
MW54-37 (005)						
MW54-58 (005)						
MW54-123 (005)						
MW54-144 (005)						
MW54-173 (005)						
MW54-190 (005)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations: DTW	Trans reading	Act Depth	Adj Depth	Follow-up Required?
MW58-26			8.09	6.157	17.074	-0.017	
MW58-65		x reset	7.82	6.899	60.284	-.449	

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

** One air compressor motor - smoking - doesn't work

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/4/09
Client:	Entergy Nuclear NorthEast		
Site:	INDIAN POINT ENERGY CENTER	**GZA Engineers:**	Miguel Briños
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Alten

GZA Engineer:	Miguel Briños	Angela Alten	**Weather:** 20's sun
Time Arrived onSite:	700	700	
Time Left Site:	1730	1730	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW55-35 (005)	IPEC	2L	Poly			
MW55-54 (004)						
MW32-59 (005)						
MW32-85 (011)						
~~MW32-131 (007)~~						
MW32-149 (009)						
MW32-173 (007)						
MW32-190 (010)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations DTW	Read	Actual	Difference		Follow-up Required?
MW55-24	Checked.		9.64	8.110	6.183	+0.020		
MW55-35	Checked		10.04	7.713	23.702	+0.013		
MW55-54	x	x	10.93	8.120	10.834	-1.230	← this test stopped mid December.	
* Batteries dead								

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

MW55-24 - pumping so slow that the ~~tube~~ tubing froze - YSI inputs/outputs will have to sample on a warmer day

MW32-131 - no water coming out of this level

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/5/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Athen

GZA Engineer:	Miguel Britos	Angela Athen	**Weather:** 10's, Sun windchill ~0°
Time Arrived onSite:	700	700	
Time Left Site:	1530	1530	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW46	IPEC	2L	poly			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations DTW	trans. reading	Actual Depth	Difference	Follow-up Required?
MW49-26	check		12.75	1.433	12.419	-.012	
MW49-42	check		12.70	1.669	14.262	-.146	
MW49-65	check		12.79	1.506	13.576	+.161	
MW46	x	x	4.54	12.916	23.157	-.480	
OUT-1	x						

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

MW49 - attempted to sample, by using heat gun to defrost lines, but lines would quickly freeze again. Unable to sample.

* Extremely cold out today - windchill 0°

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/6/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Ahern

GZA Engineer:	Miguel Britos	Angela Aiken	**Weather:** 10'S, cloudy
Time Arrived onSite:	700	700	
Time Left Site:	1500	1500	

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW31-49(2L)	IPEC	2L	poly			
MW31-63(2L)						
MW31-85(2L)						
MW49-26(0.5)						
MW49-42(0.5)						
MW49-65(0.5)						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

4.5 hrs - defrosting frozen tubing

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/9/09
Client:	Entergy Nuclear NorthEast	**GZA Engineers:**	Miguel Britos
Site:	**INDIAN POINT ENERGY CENTER**		Angela Altieri
Location:	Buchanan, NY		
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Altieri	Weather:
Time Arrived onSite:	0700		p. sunny 30's
Time Left Site:	1730		

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-60-35	IPEC	2 L	poly			
MW-60-53	IPEC					
" " "	IPEC duplicate	2 L				
" " "	IPEC spike	2 L				
MW-60-72						
MW-60-135						
MW-60-154						
MW-60 176						

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
MW-60	✓			

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

MW-

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/10/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Altien

GZA Engineer:	Miguel Britos	Angela Altien
Time Arrived onSite:	0700	
Time Left Site:	1500	

Weather: p cloudy low 40's

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
U3-4D	IPEC	2 L	poly			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
U3-4D	✓		Reset. Difference 0.257	
U3-2	✓		Reset " 2.1	
U3-C1	✓		Pulled out and cleaned.	
MW-46	✓			
U3-T1	✓			
U3-T2	✓			
U3-4S	✓			

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/11/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Alten

GZA Engineer:	Miguel Britos	Angela Alten
Time Arrived onSite:	0700	
Time Left Site:	1500	

Weather: p cloudy 50's

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-55-24	IPEC	2 L	poly			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
MW-55-24	✓	✓		
35	✓			
54	✓			
MW-33	✓			
MW-34	✓		Unable to check DTW. Too much oil in it	
MW-35	✓	✓	Same problem as 34. Estimate DTW to reset.	
MW-111	✓	✓		
MW-52-11	✓	✓		
MW-52-18	✓			
48	✓			
64	✓			
118	✓			
122	✓			
162	✓			
181	✓			

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

1ST Quarter Sampling finished

GZA FIELD ACTIVITIES SHEET

Project: Radiological Groundwater Sampling Program
Client: Entergy Nuclear NorthEast
Site: INDIAN POINT ENERGY CENTER
Location: Buchanan, NY
Project #: 01.0017869.91

Date: 2/12/08

GZA Engineers: Miguel Britos, Angela Altieri

GZA Engineer:	Miguel Britos	Angela Altieri
Time Arrived onSite:	0700	
Time Left Site:	1500	

Weather: p. cloudy, windy drizzle 40's

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
MW-43-62	✓	✓		
MW-43-28	✓	✓		
MW-41-63	✓		Run off water going into wells	
MW-41-40	✓			
MW-45-42	✓			
MW-45-61	✓			
MW-44-102	✓			
MW-44-66	✓			
MW-39 all	✓			
MW-65-48	✓			
MW-65-80	✓			

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	**Date:**	2/13/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	**GZA Engineers:**	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Altieri

GZA Engineer:	Miguel Britos	Angela Altieri	**Weather:** Sunny 40's
Time Arrived onSite:	0700		
Time Left Site:	1500		

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?
MW-31	✓		All 3 levels	
MW-32	✓		All 7 levels	
MW-47-56	✓	✓		
MW-47-80	✓			
MW-56-53	✓	✓		
MW-56-83	✓	✓		
MW-53-82	✓			
MW-53-120	✓			
MW-42-49	✓			
MW-42-78	✓	✓		

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

APPENDIX E: POST-Q1 2009 MID-QUARTER SAMPLING DATA SHEETS

GZA FIELD ACTIVITIES SHEET

Project: Radiological Groundwater Sampling Program
Client: Entergy Nuclear NorthEast
Site: INDIAN POINT ENERGY CENTER
Location: Buchanan, NY
Project #: 01.0017869.91

Date: 3/16/09
GZA Engineers: Miguel Britos
Angela Allen

GZA Engineer:	Miguel Britos	Angela Allen
Time Arrived onSite:	0700	—
Time Left Site:	1500	—

Weather: P. Cloudy 50°F

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-42-49	(016) IPEC	2 L.	poly	MID QUARTER SAMPLING		
MW-53-120	(014) "	" "	"			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	Date:	3/17/09
Client:	Entergy Nuclear NorthEast		
Site:	INDIAN POINT ENERGY CENTER	GZA Engineers:	Miguel Britos
Location:	Buchanan, NY		
Project #:	01.0017869.91		Angela Allen

GZA Engineer:	Miguel Britos	Angela Allen	Weather: M Sunny 50's
Time Arrived onSite:	0700		
Time Left Site:	1500		

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-66-21 (008)	IPEC	2 L	poly	MID QUARTER SAMPLING		
MW-67-173 (008)	"	" "	"			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

GZA FIELD ACTIVITIES SHEET

Project:	Radiological Groundwater Sampling Program	Date:	3/18/09
Client:	Entergy Nuclear NorthEast		
Site:	**INDIAN POINT ENERGY CENTER**	GZA Engineers:	Miguel Britos
Location:	Buchanan, NY		Angela Alten
Project #:	01.0017869.91		

GZA Engineer:	Miguel Britos	Angela Alten
Time Arrived onSite:	0700	
Time Left Site:	1630	

Weather: Sunny 60°F

WELL SAMPLING ACTIVITIES

Well ID	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)	Designation (IPEC, NRC, REL, CAP, etc.)	Quantity/ Volume	container type (voa, amber, poly, glass)
MW-50-66(	) IPEC	2 L	poly			
U1-CSS (	) "	"	"			

TRANSDUCER DOWNLOADING AND INSTALLATIONS

Well ID	ACTIVITY (check) Download	Installation	Special Notes/Issues/Observations	Follow-up Required?

MEETINGS, SPECIAL ACTIVITIES, NOTABLE EVENTS, DELAYS, NOTES

APPENDIX F: DOSE CALCULATIONS

Facility Groundwater Flux Calculation

Site Indian Point
Job No. 17869.91

Prepared By: JAS
Reviewed By: mjb

Parameter Values:

year
2009

Totals					
	Total Catchment Zone (ft^2)	Total Improved Zone (ft^2)	Recharge (ft/yr)	Precipitation (ft/yr)	
	3,969,765	1,355,080	0.87	3.02	

Surface Area					
Northern Clean Zone Improved (ft^2)	Unit 2 North Improved Zone (ft^2)	Unit 1/2 Improved Zone (ft^2)	Unit 3 North Improved Zone (ft^2)	Unit 3 South Improved Zone (ft^2)	Southern Clean Improved Zone (ft^2)
0	136,704	374,234	309,497	321,290	213,354
Northern Clean Unimproved Zone (ft^2)	Unit 2 North Unimproved Zone (ft^2)	Unit 1/2 Unimproved Zone (ft^2)	Unit 3 North Unimproved Zone (ft^2)	Unit 3 South Unimproved Zone (ft^2)	Southern Clean Zone Unimproved (ft^2)
111,863	217,667	438,221	323,116	268,862	585,600
Discounted Area Within Zone	Discounted Area Within Zone	Discounted Area Within Zone	Discounted Area Within Zone	Discounted Area Within Zone	Discounted Area Within Zone
44,831	0	324,509	137,938	17,730	144,347
Northern Clean Zone Catchment (ft^2)	Unit 2 North Catchment Zone (ft^2)	Unit 1/2 Catchment Zone (ft^2)	Unit 3 North Catchment Zone (ft^2)	Unit 3 South Zone (ft^2)	Southern Clean Zone (ft^2)
156,694	354,371	1,136,965	770,550	607,882	943,302

Activity (pCi/L)

Groundwater

	Northern Clean Zone Catchment	Unit 2 North	Unit 1/2	Unit 3 North	Unit 3 South Zone	Southern Clean Zone
Upper Zone Before Canal	150	546	2,570	328	824	276
Lower Zone Before Canal	150	151	2,810	1,171	439	220

	Northern Clean Zone	Unit 2 North	Unit 1/2	Unit 3 North	Unit 3 South Zone	Southern Clean Zone
Upper Zone After Canal	150	198	3,101	376	824	276
Lower Zone After Canal	150	582	1,095	483	439	220

Facility Groundwater Flux Calculation

Site Indian Point — **Prepared By:** JAS
Job No. 17869.91 — **Reviewed By:** mjb

Stormwater Discharging to Canal (pCi/L)					
Storm Water for Northern Clean Zone	**Storm Water for Unit 2 North**	**Storm Water for Unit 1/2**	**Storm Water for Unit 3 North**	**Storm Water for Unit 3 South**	**Storm Water for Southern Clean Zone**
	1,148		0	0	0
NA	*Avg MH-4a*	*NA*	*Avg CB-14 and CB-34*	*Avg U3-CB-B8*	*Avg D1, CB3, E6, & E10*

Stormwater Discharging to River (pCi/L)					
Storm Water for Northern Clean Zone	**Storm Water for Unit 2 North**	**Storm Water for Unit 1/2**	**Storm Water for Unit 3 North**	**Storm Water for Unit 3 South**	**Storm Water for Southern Clean Zone**
	0	0	683		598
NA	*Avg. MH-1 and MH-12*	*Avg MH-14*	*Avg CB-15*	*NA*	*Avg E13,CB-C2*

Potential Water Received by Storm Drain System

=(Improved Area) x Precipitation

Northern Clean Area	Unit 2 North	Unit 1/2	Unit 3 North	Unit 3 South	Southern Clean Zone	Units
0	412,846	1,130,188	934,681	970,294	644,331	ft^3/yr
0	1,131	3,096	2,561	2,658	1,765	ft^3/day
0.00	5.88	16.09	13.30	13.81	9.17	GPM
0	11,690,498	32,003,363	26,467,218	27,475,679	18,245,408	L/Yr

The total amount of water available to be received by the storm system is computed as the combined area of buildings and paved areas in the catchment multiplied by the annual precipitation rate. Note this conservatively assumes that the amount of water lost to the atmosphere or other sinks after precipitation has fallen on paved or built up surfaces is zero.

Water Directly Recharged to Aquifer from Precipitation

=Unimproved Area x Recharge

Northern Clean Area	Unit 2 North	Unit 1/2	Unit 3 North	Unit 3 South	Southern Clean Zone	Units
97,677	190,063	382,646	282,138	234,765	511,335	ft^3/yr
268	521	1,048	773	643	1,401	ft^3/day
1.39	2.71	5.45	4.02	3.34	7.28	GPM
2,765,899	5,381,977	10,835,334	7,989,263	6,647,817	14,479,386	L/Yr

Note that this calculation reflects recharge to the aquifer in non-paved areas. The Recharge value listed above and used in this calculation reflects only that portion of precipitation that actually recharges the aquifer.

Facility Groundwater Flux Calculation

Site Indian Point | **Prepared By:** JAS
Job No. 17869.91 | **Reviewed By:** mjb

Water Recharged to Aquifer (Direct Recharge Plus Storm Water Leakage Minus Building Drain Removal)

=(Direct Recharge + X% Water Received by Storm System) - (Y% x Water Removed by Building Drains)

Total Water Discharged to Aquifer

Upper and Lower Zone	[Northern Clean Area Catchment + (0% Storm Drain Water)]	[Unit 2 North + (50% Storm Drain Water)]-[5gpm]	[Unit 1/2 Area Catchment + (30% Storm Drain Water)]-[7.5 gpm]	[Unit 3 North Area Catchment + (50% Storm Drain Water)]-[7.5gpm]	[Unit 3 South Area + (1% Storm Drain Water)]	[Southern Clean Zone Area + (1% Storm Drain Water)]	Units
	97,677	45,173	194,734	222,510	244,468	517,778	ft^3/yr
	268	124	534	610	670	1,419	ft^3/day
	1.39	0.64	2.77	3.17	3.48	7.37	GPM
	2,765,899	1,279,165	5,514,250	6,300,779	6,922,574	14,661,840	L/Yr

Groundwater Discharged to Canal

=Water Recharged to Aquifer x X% flowing to Canal

Upper and Lower Zone	Northern Clean Area Catchment x 0%	Unit 2 North x 34.6%	Unit 1/2 Area Catchment 22.6%	Unit 3 North Area Catchment x 56.3%	Unit 3 South Area x73.9%	Southern Clean Zone Area x 0%	Units
	0	15,630	44,010	125,273	180,662	0	ft^3/yr
	0	43	121	343	495	0	ft^3/day
	0.00	0.22	0.63	1.78	2.57	0.00	GPM
	0	442,591	1,246,220	3,547,339	5,115,782	0	L/Yr

Site Indian Point
Job No. 17869.91

Prepared By: JAS
Reviewed By: mjb

Groundwater Discharged to River

=Water Recharged to Aquifer x X% flowing to River x Y% Flowing in Appropriate Vertical Zone

Zone	Northern Clean Area Catchment x 100% x 33.5%	Unit 2 North x 65.4% x 21.7%	Unit 1/2 Area Catchment 77.4% x 35.9%	Unit 3 North Area Catchment x 43.7% x 28.7%	Unit 3 South Area x 26.1% x 34.4%	Southern Clean Zone Area x 100% x 51.8%	Units
Upper Zone	32,722	6,411	54,110	27,907	21,949	268,209	ft^3/yr
	90	18	148	76	60	735	ft^3/day
	0.47	0.09	0.77	0.40	0.31	3.82	GPM
	926,576	181,536	1,532,223	790,237	621,536	7,594,833	L/Yr
Lower Zone	**Northern Clean Area Catchment x 100% x 66.5%**	**Unit 2 North x 65.4% x 78.3%**	**Unit 1/2 Area Catchment 77.4% x 64.1%**	**Unit 3 North Area Catchment x 43.7% x 71.3%**	**Unit 3 South Area x 26.1% x 65.6%**	**Southern Clean Zone Area x 100% x 48.2%**	**Units**
	64,955	23,132	96,614	69,330	41,857	249,569	ft^3/yr
	178	63	265	190	115	684	ft^3/day
	0.92	0.33	1.38	0.99	0.60	3.55	GPM
	1,839,323	655,037	2,735,807	1,963,203	1,185,255	7,067,007	L/Yr

Water Remaining in Storm Drains and Discharged to Canal

=Storm Drain Water x X% Not Leaking to Groundwater and Not Discharging to River

Northern Clean Area Catchment (0% Storm Drain Water)	Unit 2 North (45% Unit 2 North and 30% of Unit 1/2 Storm Drain Water). Plus 5 gpm (351k cf/yr) from U2 footing drain.	Unit 1/2 Area Catchment (0% Storm Drain Water)	Unit 3 North Area Catchment (4% Unit 3 North Storm Drain Water)	Unit 3 South Area (4% Unit 3 North and 47% Unit 3 South Storm Drain Water)	Southern Clean Zone Area (30% Unit 1/2, 32% Unit 3 North, 47% Unit 3 South, and 94% Southern Clean Zone Storm Drain Water)	Units
0	875,837	0	37,387	493,426	1,699,863	ft^3/yr
0	2,400	0	102	1,352	4,657	ft^3/day
0	12.47	0.00	0.53	7.02	24.19	GPM
0	24,802,148	0	1,058,689	13,972,258	48,134,772	L/Yr

Facility Groundwater Flux Calculation

Site Indian Point
Job No. 17869.91

Prepared By: JAS
Reviewed By: mjb

Water Remaining in Storm Drains and Discharged to River

Northern Clean Area Catchment (0% Storm Drain Water)	Unit 2 North (5% Storm Drain Water)	Unit 1/2 Area Catchment (10% Storm Drain Water)	Unit 3 North Area Catchment (10% Storm Drain Water)	Unit 3 South Area (5% Storm Drain Water)	Southern Clean Zone Area (5% Storm Drain Water)	Units
0	20,642	113,019	93,468	48,515	32,217	ft^3/yr
0	57	310	256	133	88	ft^3/day
0	0.29	1.61	1.33	0.69	0.46	GPM
0	584,525	3,200,336	2,646,722	1,373,784	912,270	L/Yr

Flux Calculations

Conceptual Model: Migration Pathway Summary

	Northern Clean Area	Unit 2 North	Unit 1/2	Unit 3 North	Unit 3 South	Southern Clean Zone
GW	100% Upper and Lower Zone To River	68.6% Upper Zone and Lower Zone Flow To River. 31.4% Upper Zone and Lower Zone Flow to Canal	73.4% Upper Zone and Lower Zone To River. 26.6% Upper Zone and Lower Zone to Canal	41.2% Upper Zone and Lower Zone To River. 58.8% Upper Zone and Lower Zone to Canal	26.1% Upper Zone and Lower Zone To River. 73.9% Upper Zone and Lower Zone to Canal	100% Upper and Lower Zone To River
SW	NA	To Canal (Storm Water Considered Clean; Estimated at 5.5 GPM) and To River (5% Storm Water)	To Canal (60% Storm Water) and To River (10% Storm Water)	To Canal (40% Storm Water) and To River (10% Storm Water)	To Canal (94% Storm Water) and To River (5% Storm Water)	To Canal (94% Storm Water) and To River (5% Storm Water)

Flux (pCi/Yr)

	North Clean Area	Unit 2 North	Unit 1/2	Unit 3 North	Unit 3 South	South Clean Zone	Total
GW to River-Upper Zone	1.39E+08	3.59E+07	4.75E+09	2.97E+08	5.12E+08	2.09E+09	**7.83E+09**
GW to River-Lower Zone	2.76E+08	3.81E+08	3.00E+09	9.48E+08	5.20E+08	1.55E+09	**6.67E+09**
GW to Canal	0.00E+00	2.42E+08	3.20E+09	1.16E+09	4.22E+09	0.00E+00	**8.83E+09**
SW to Canal	NA	2.85E+10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**2.85E+10**
SW to River	NA	0.00E+00	0.00E+00	1.81E+09	0.00E+00	5.45E+08	**2.35E+09**
						Curies/Yr ==>	**0.05**

Notes:

The recharge rate used herein, 0.87 ft/yr (10 inches/year), is within the range of values discussed in the USGS modeling report [1.] The reported recharge ranged from 3.6 inches/year to 7.5 inches/year for a till to 20 inches per year for coarse grained glacially stratified deposits. A precipitation value of 2.92ft/yr, (a 10 year average measured at the Facility meteorological station) was also used in the computations. The catchment area was defined using an AutoCAD topo map for the Site and surrounding area. The catchment was defined by starting at the area marked "line of water grant" and tracking east, away from the River, to define portions of the land surface contributing water to the selected discharge zone. Calculations assume that run-off or overland flow in unimproved areas of the Site is negligible, there are no changes in storage and the Hudson River is a gaining stream.

1. USGS. Water Use, Ground-Water Recharge and Availability, and Quality of Water in the Greenwich Area, Fairfield County, Connecticut and Westchester County, New York, 2000-2002

APPENDIX G: UNIT 2 TRITIUM PLUME TREND ANALYSES

TABLE G1
MANN-KENDALL TREND EVALUATION SUMMARY
TRITIUM IN GROUNDWATER NEAR UNIT 2
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID	Number of Data Points	Number of Times below MDC	Minimum Tritium Activity (pCi/L)	Maximum Tritium Activity (pCi/L)	Mann-Kendall Statistic (S)	Normalized Test Statistic (Z)	Probability	Trend at 95% Level of Significance
MW-30-69	27	0	7.36E+04	6.01E+05	-118.00	-2.44	0.993	decreasing
MW-30-84	14	0	3.78E+03	1.25E+04	-51.00	-2.74	0.997	decreasing
MW-31-49	25	0	2.98E+02	3.38E+04	-28	-0.63	0.736	no trend
MW-31-63	13	0	5.00E+03	4.06E+04	10	0.55	0.709	no trend
MW-31-85	13	0	3.17E+02	8.34E+03	40	2.38	0.991	increasing
MW-32-59	11	0	4.13E+02	4.44E+04	-36	-2.40	0.992	decreasing
MW-32-85	11	0	5.42E+03	1.26E+04	-7	-0.47	0.680	no trend
MW-32-131	6	1	1.29E+02	1.13E+04	2	NA	0.575	no trend
MW-32-149	9	0	4.93E+02	1.05E+04	-20	NA	0.976	decreasing
MW-32-173	7	0	7.56E+02	5.89E+03	-19	NA	0.997	decreasing
MW-32-190	10	0	1.72E+03	1.13E+04	-17	-1.43	0.924	no trend
MW-33	21	0	2.30E+04	2.64E+05	-66	-1.96	0.975	decreasing
MW-34	18	0	1.05E+04	2.76E+05	-19	-0.68	0.752	no trend
MW-35	18	0	1.04E+03	1.19E+05	-59	-2.20	0.986	decreasing
MW-36-24	11	2	1.54E+02	3.42E+04	-10	-0.70	0.758	no trend
MW-36-52	11	0	6.79E+03	2.68E+04	-35	-2.65	0.996	decreasing
MW-37-22	13	0	2.26E+03	3.49E+04	-40	-2.38	0.991	decreasing
MW-37-32	13	0	2.49E+03	3.01E+04	-54	-3.23	0.999	decreasing
MW-37-40	12	0	4.91E+03	1.70E+04	-52	-3.50	1.000	decreasing
MW-37-57	13	0	4.27E+03	4.48E+04	-52	-3.11	0.999	decreasing
MW-42-49	13	0	1.12E+03	7.22E+04	2	0.06	0.524	no trend
MW-42-78	8	0	3.46E+02	1.28E+03	-12	NA	0.913	no trend
MW-49-26	15	0	3.10E+03	1.54E+04	-85	-4.16	1.000	decreasing
MW-49-42	15	0	2.25E+03	1.13E+04	-91	-4.45	1.000	decreasing
MW-49-65	15	0	1.26E+03	5.76E+03	-77	-3.76	1.000	decreasing
MW-50-42	16	4	1.01E+02	9.75E+03	-57	-2.52	0.994	decreasing
MW-50-66	19	0	2.08E+03	1.08E+04	-147	-5.11	1.000	decreasing
MW-53-82	8	0	4.54E+02	1.32E+04	4	NA	0.645	no trend
MW-53-120	13	0	4.42E+03	9.61E+03	-42	-2.50	0.994	decreasing
MW-55-24	9	0	7.82E+02	3.08E+03	-24	NA	0.992	decreasing
MW-55-35	8	0	8.53E+02	9.04E+03	-20	NA	0.991	decreasing
MW-55-54	9	0	5.96E+03	1.31E+04	-22	NA	0.986	decreasing
MW-111	29	0	6.81E+03	5.78E+05	-111	-2.06	0.980	decreasing

Notes: Calculations based on Mann-Kendall trend evaluations as presented in U.S. EPA Practical Methods for Data Analysis, U.S. EPA QA/G-9 QA00 UPDATE, July 2000, Section 4.3.4

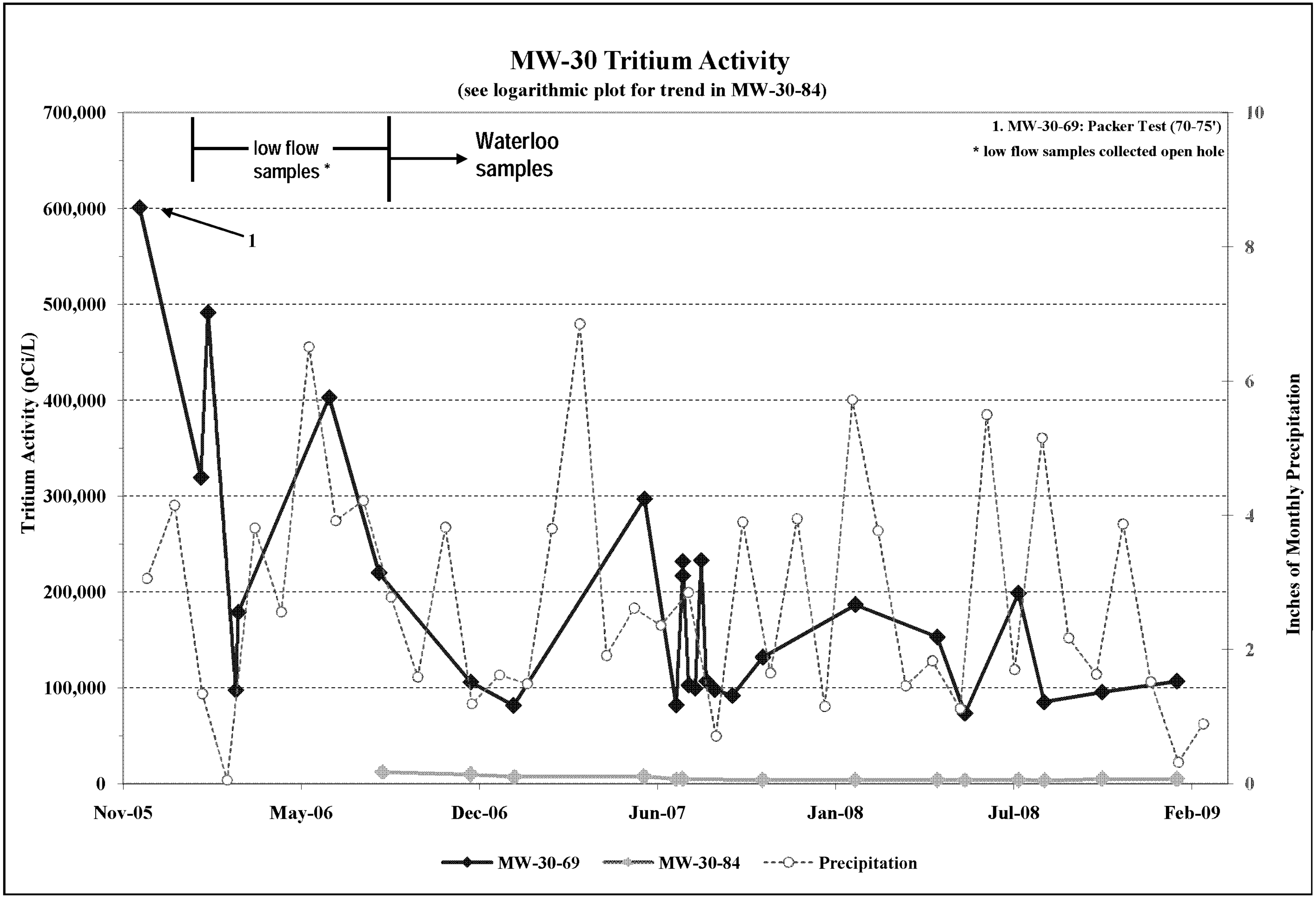

MW-30 Tritium Activity
(see logarithmic plot for trend in MW-30-84)
low flow samples *
Waterloo samples
1. MW-30-69: Packer Test (70-75')
* low flow samples collected open hole
1
Tritium Activity (pCi/L)
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Inches of Monthly Precipitation
10
8
6
4
2
0
Nov-05
May-06
Dec-06
Jun-07
Jan-08
Jul-08
Feb-09
MW-30-69
MW-30-84
Precipitation

FIGURE G1

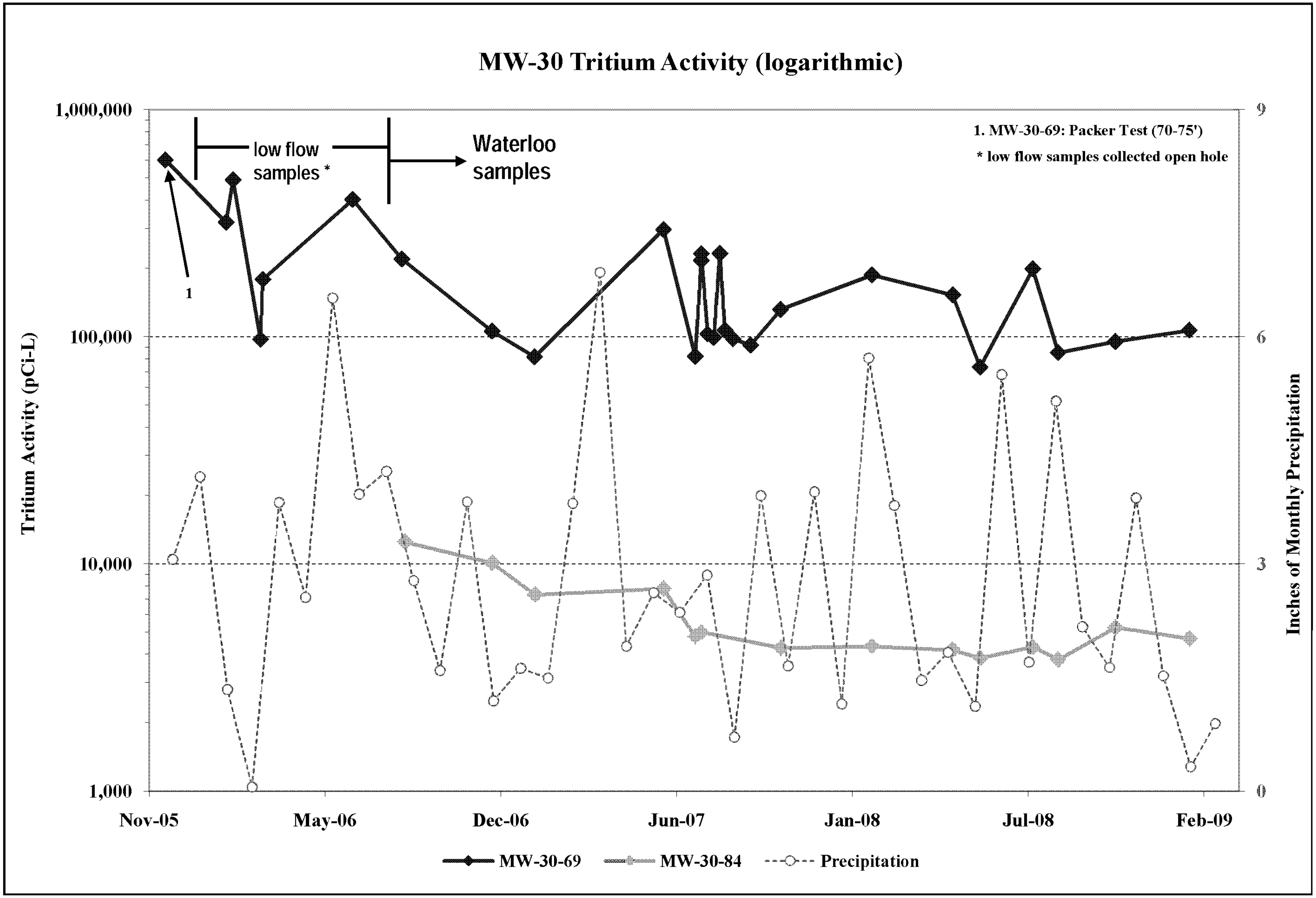

MW-30 Tritium Activity (logarithmic)
1,000,000
100,000
10,000
1,000
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
9
6
3
0
low flow samples *
Waterloo samples
1
1. MW-30-69: Packer Test (70-75')
* low flow samples collected open hole
Nov-05
May-06
Dec-06
Jun-07
Jan-08
Jul-08
Feb-09
MW-30-69
MW-30-84
Precipitation

FIGURE G1a

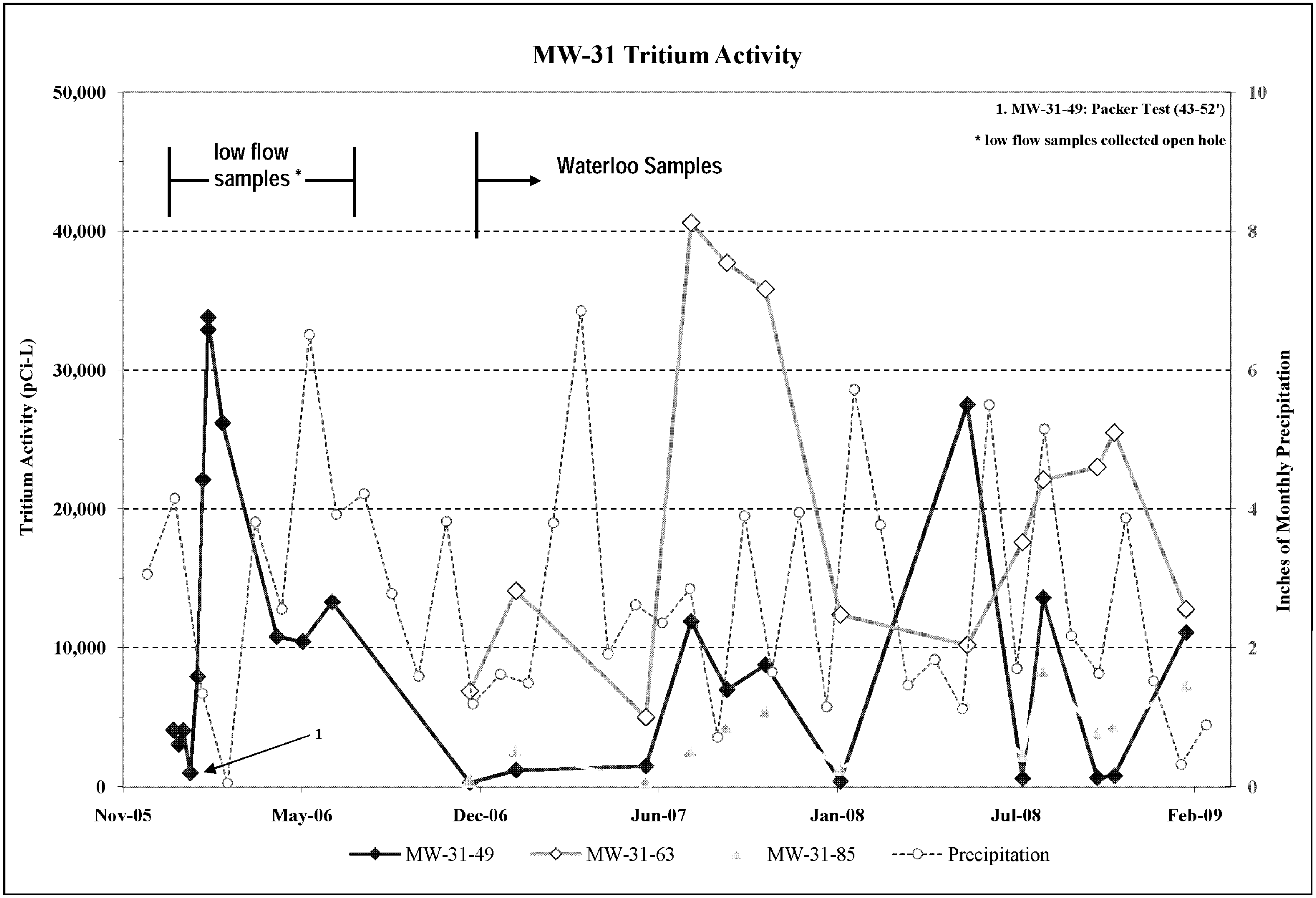

MW-31 Tritium Activity
1. MW-31-49: Packer Test (43-52')
* low flow samples collected open hole
low flow samples *
Waterloo Samples
1
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
50,000
40,000
30,000
20,000
10,000
0
10
8
6
4
2
0
Nov-05
May-06
Dec-06
Jun-07
Jan-08
Jul-08
Feb-09
MW-31-49
MW-31-63
MW-31-85
Precipitation

FIGURE G2

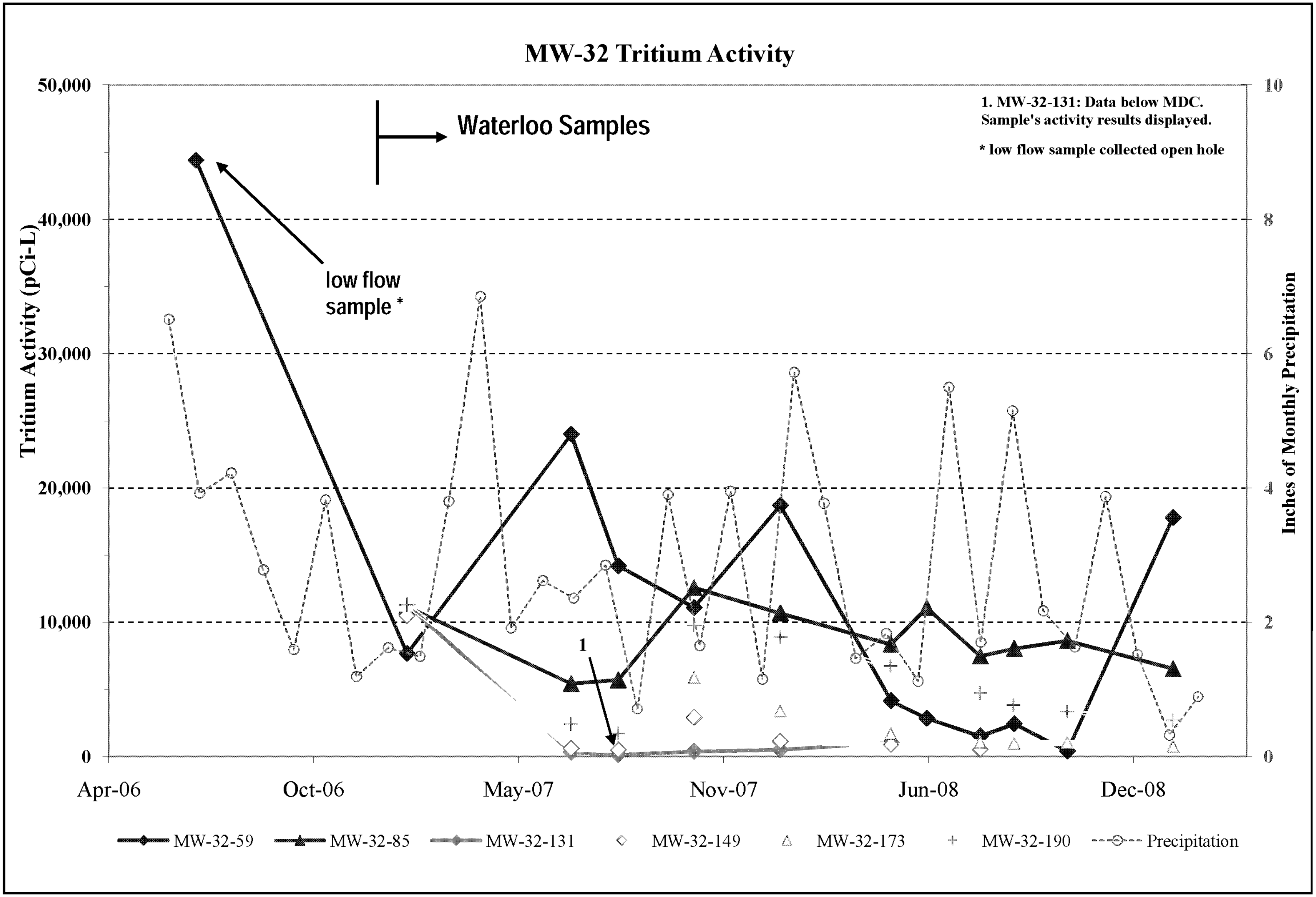

MW-32 Tritium Activity
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
50,000
40,000
30,000
20,000
10,000
0
10
8
6
4
2
0
Apr-06
Oct-06
May-07
Nov-07
Jun-08
Dec-08
Waterloo Samples
low flow sample *
1
1. MW-32-131: Data below MDC. Sample's activity results displayed.
* low flow sample collected open hole
MW-32-59
MW-32-85
MW-32-131
MW-32-149
MW-32-173
MW-32-190
Precipitation

FIGURE G3

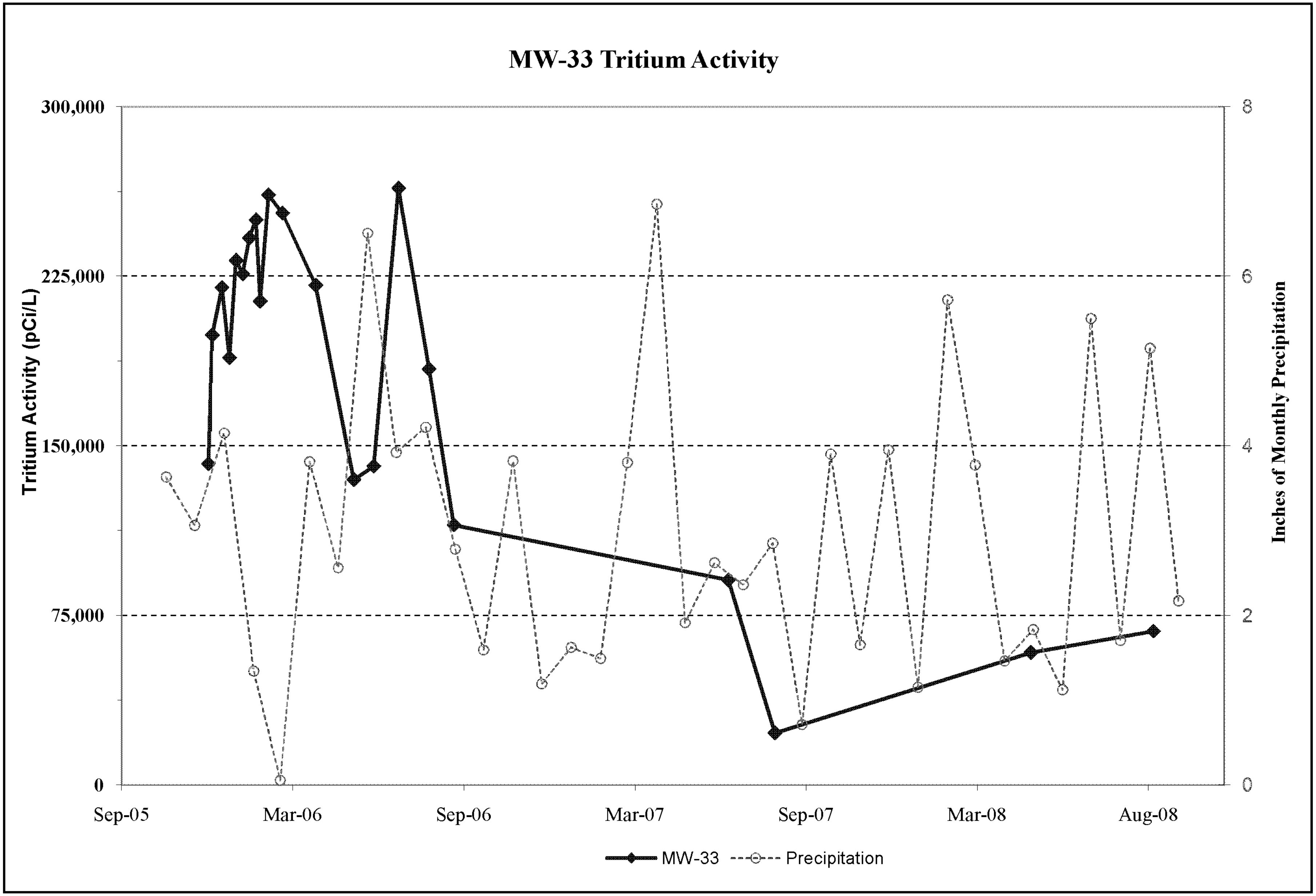

MW-33 Tritium Activity
Tritium Activity (pCi/L)
300,000
225,000
150,000
75,000
0
Inches of Monthly Precipitation
8
6
4
2
0
Sep-05
Mar-06
Sep-06
Mar-07
Sep-07
Mar-08
Aug-08
MW-33
Precipitation

FIGURE G4

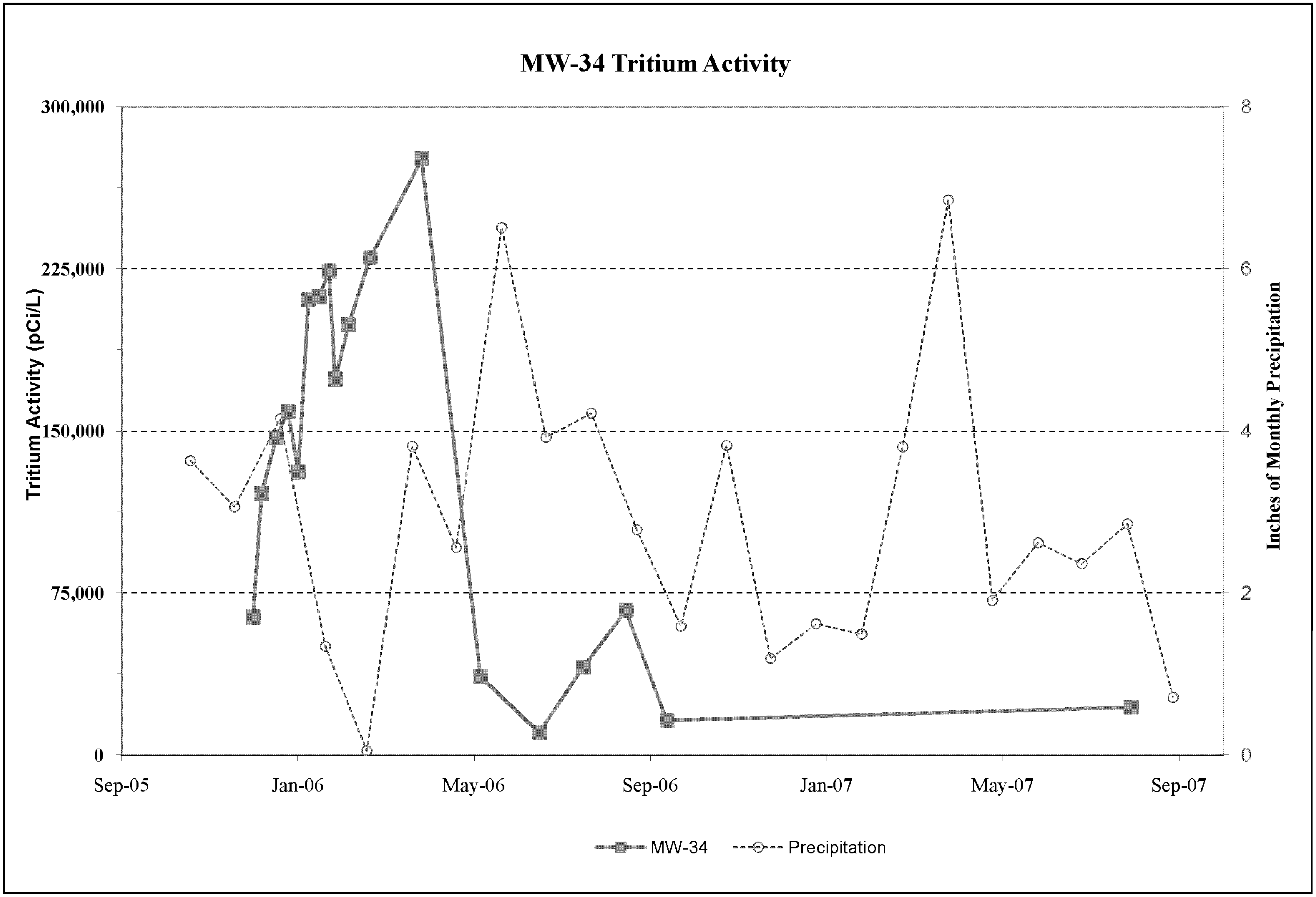

MW-34 Tritium Activity
Tritium Activity (pCi/L)
Inches of Monthly Precipitation
300,000
225,000
150,000
75,000
0
8
6
4
2
0
Sep-05
Jan-06
May-06
Sep-06
Jan-07
May-07
Sep-07
MW-34
Precipitation

FIGURE G5

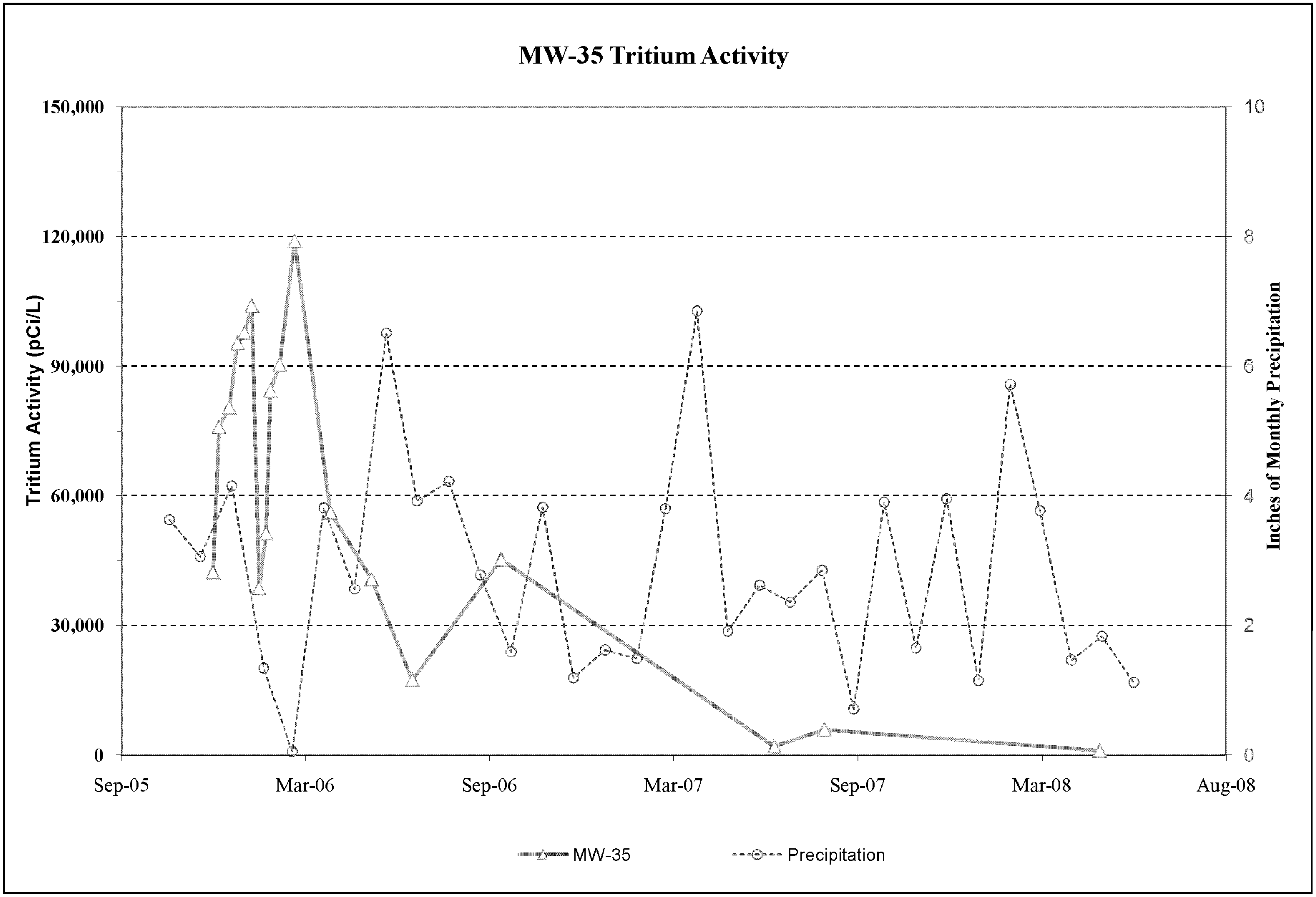

MW-35 Tritium Activity
Tritium Activity (pCi/L)
Inches of Monthly Precipitation
150,000
120,000
90,000
60,000
30,000
0
10
8
6
4
2
0
Sep-05
Mar-06
Sep-06
Mar-07
Sep-07
Mar-08
Aug-08
MW-35
Precipitation

FIGURE G6

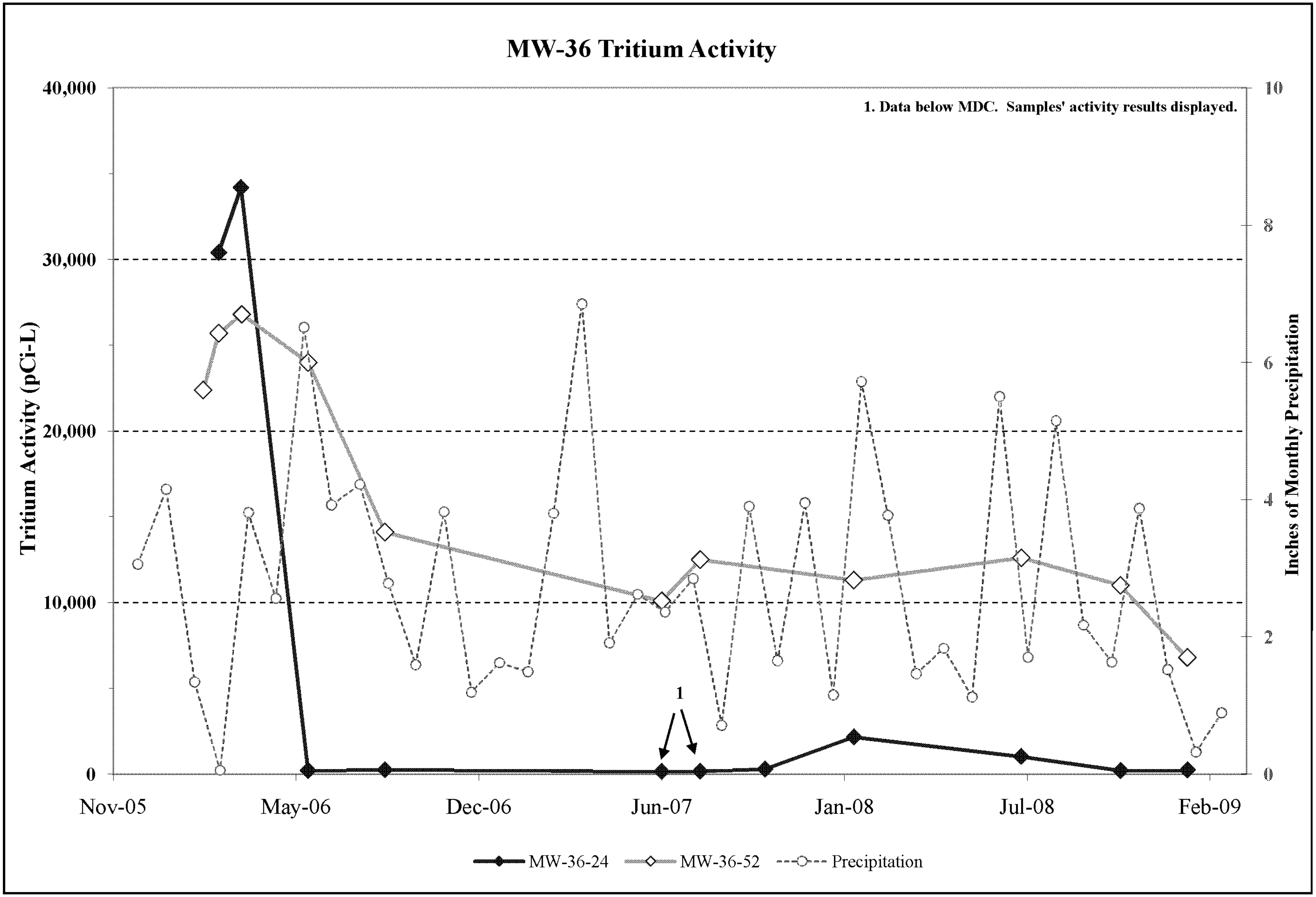
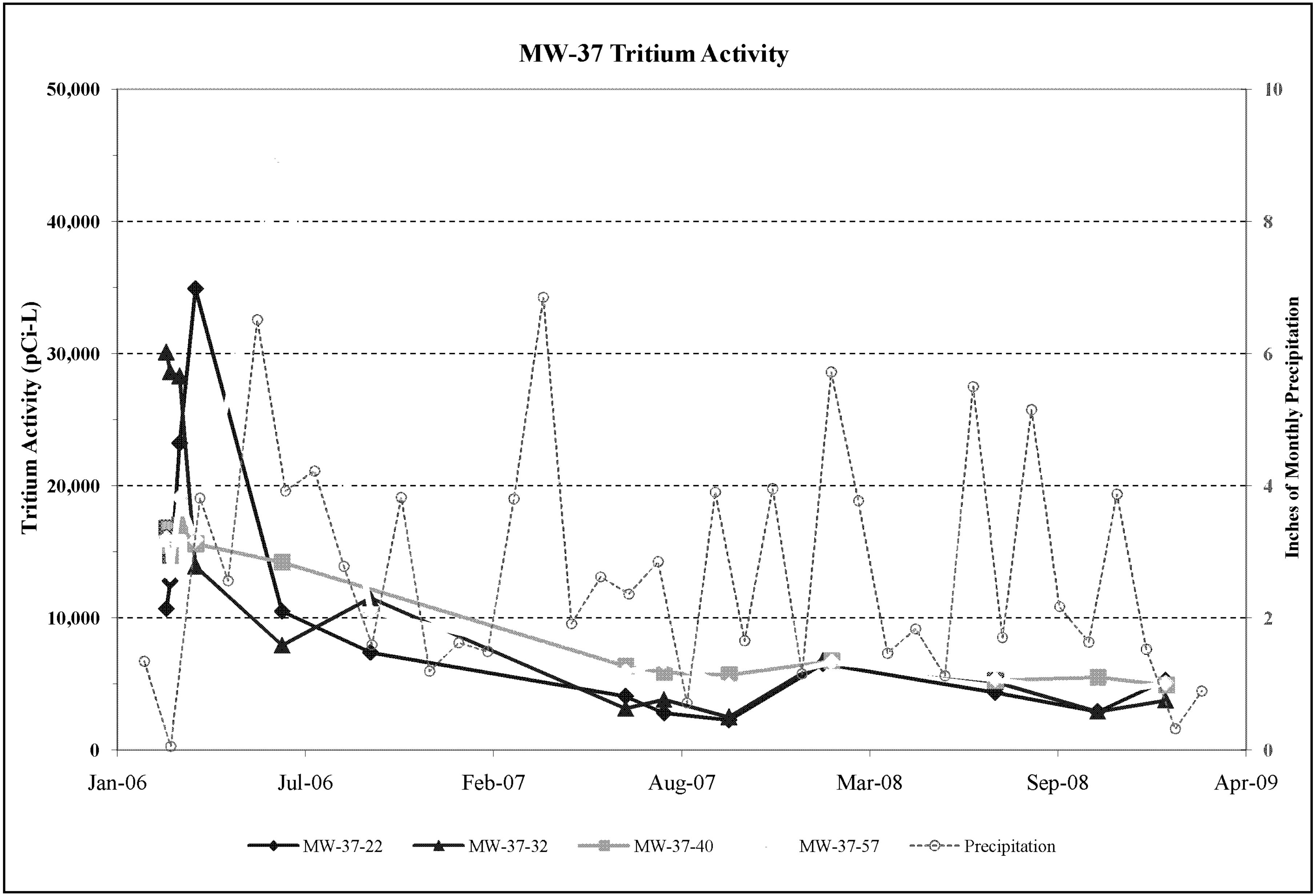

MW-36 Tritium Activity
1. Data below MDC. Samples' activity results displayed.
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
40,000
30,000
20,000
10,000
0
10
8
6
4
2
0
1
Nov-05
May-06
Dec-06
Jun-07
Jan-08
Jul-08
Feb-09
MW-36-24
MW-36-52
Precipitation

FIGURE G7



MW-37 Tritium Activity
Tritium Activity (pCi-L)
50,000
40,000
30,000
20,000
10,000
0
Inches of Monthly Precipitation
10
8
6
4
2
0
Jan-06
Jul-06
Feb-07
Aug-07
Mar-08
Sep-08
Apr-09
MW-37-22
MW-37-32
MW-37-40
MW-37-57
Precipitation

FIGURE G8

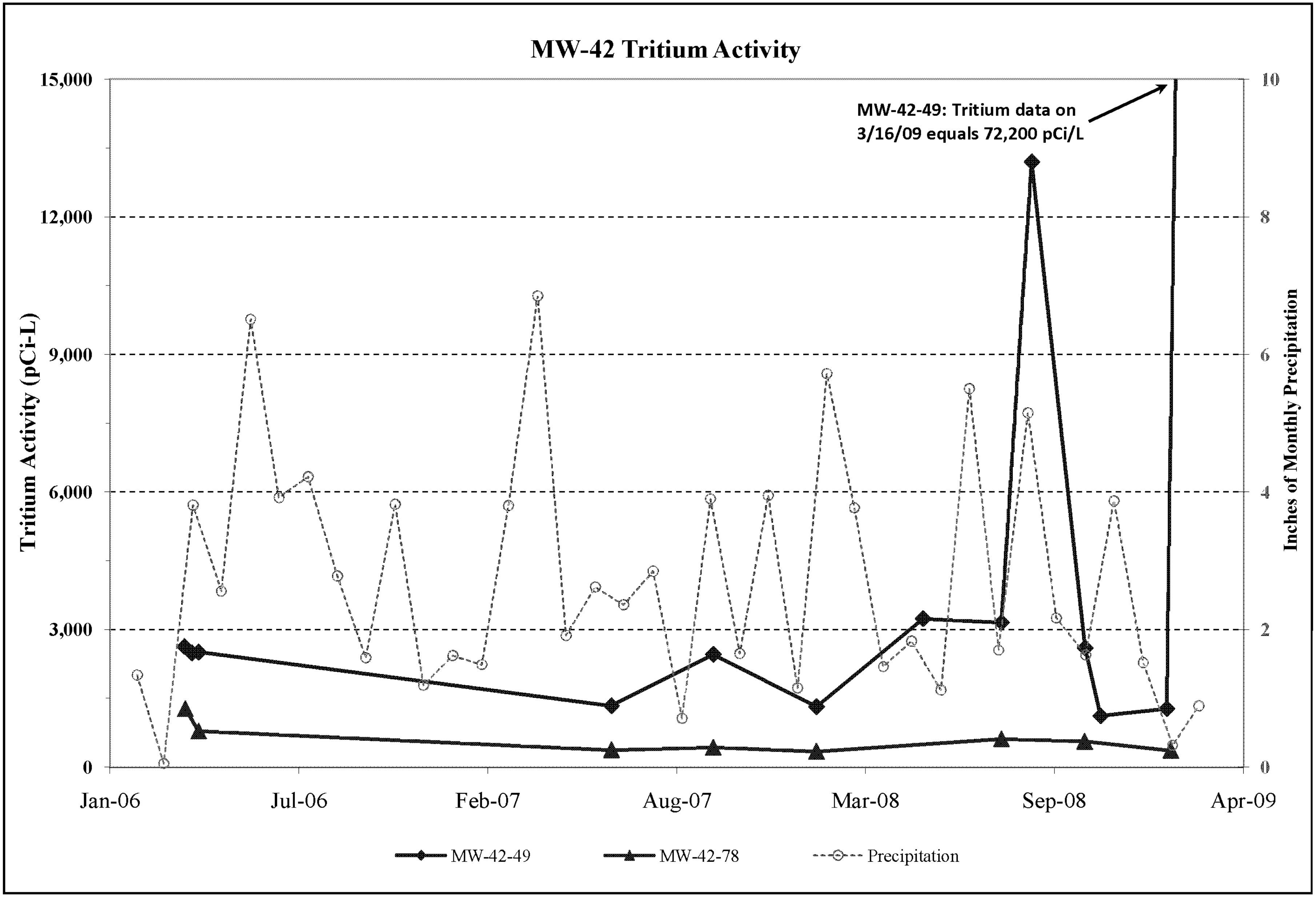
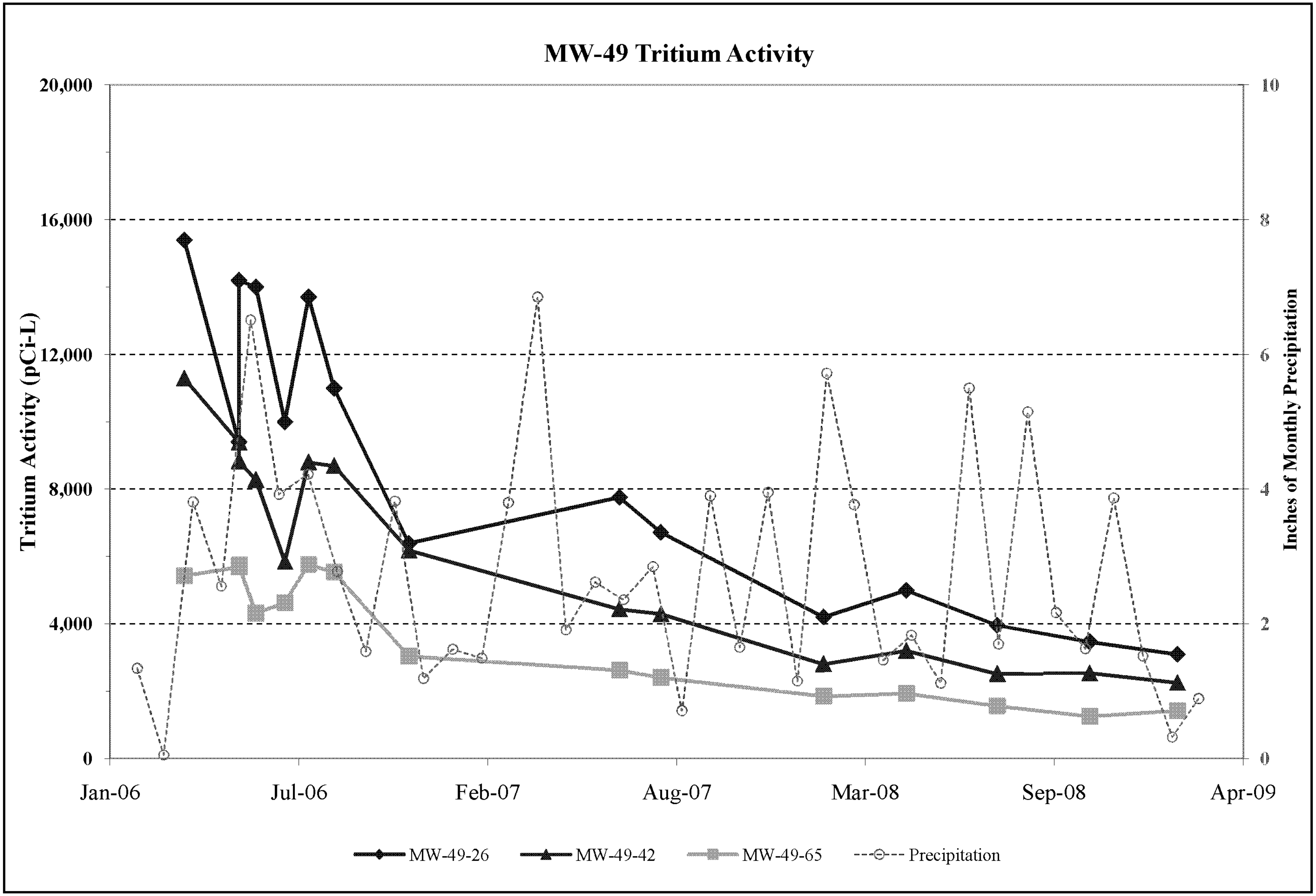
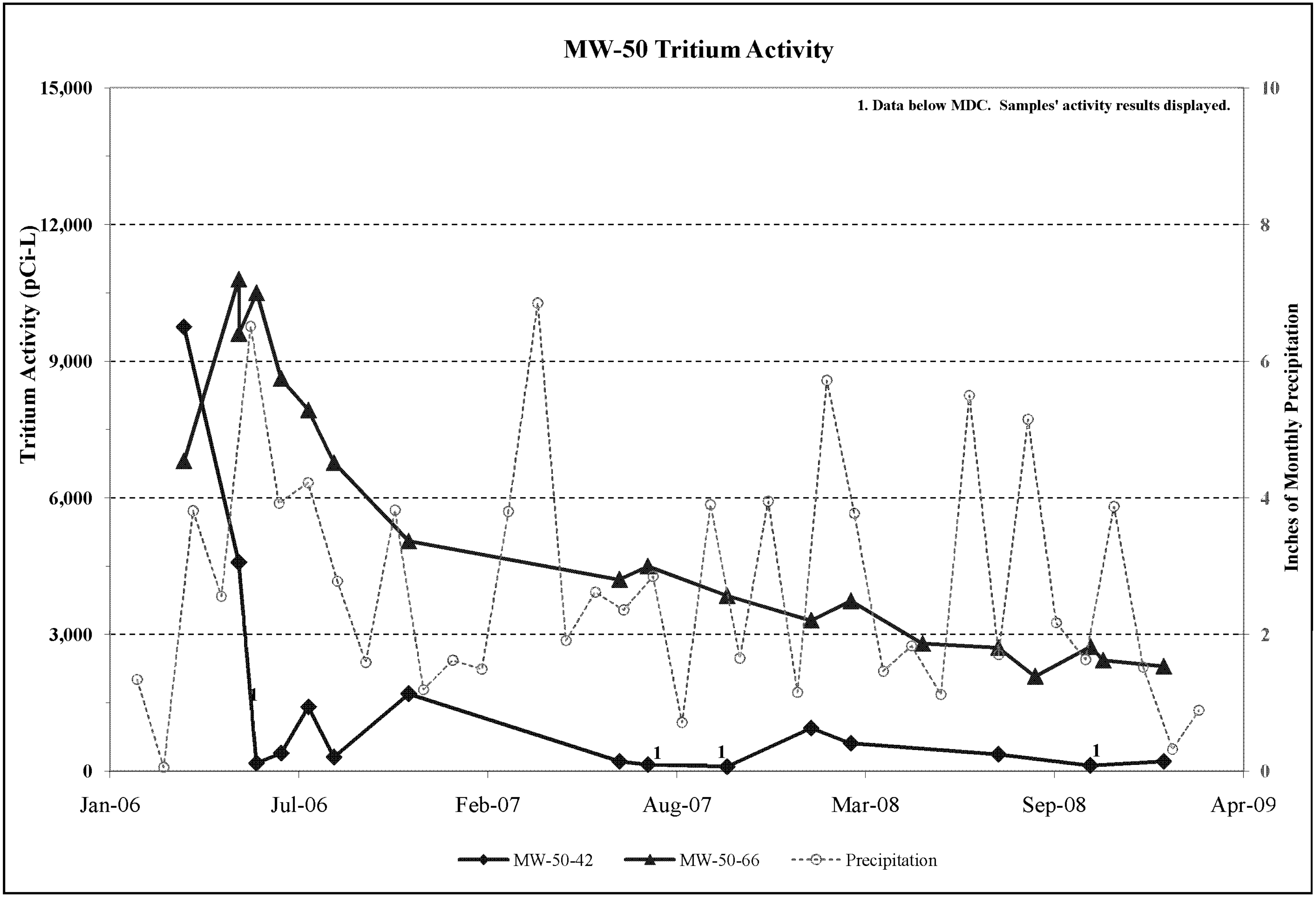

MW-42 Tritium Activity
MW-42-49: Tritium data on 3/16/09 equals 72,200 pCi/L
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
15,000
12,000
9,000
6,000
3,000
0
10
8
6
4
2
0
Jan-06
Jul-06
Feb-07
Aug-07
Mar-08
Sep-08
Apr-09
MW-42-49
MW-42-78
Precipitation

FIGURE G9



MW-49 Tritium Activity
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
20,000
16,000
12,000
8,000
4,000
0
10
8
6
4
2
0
Jan-06
Jul-06
Feb-07
Aug-07
Mar-08
Sep-08
Apr-09
MW-49-26
MW-49-42
MW-49-65
Precipitation

FIGURE G10



MW-50 Tritium Activity
1. Data below MDC. Samples' activity results displayed.
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
15,000
12,000
9,000
6,000
3,000
0
10
8
6
4
2
0
Jan-06
Jul-06
Feb-07
Aug-07
Mar-08
Sep-08
Apr-09
1
1
1
1
MW-50-42
MW-50-66
Precipitation

FIGURE G11

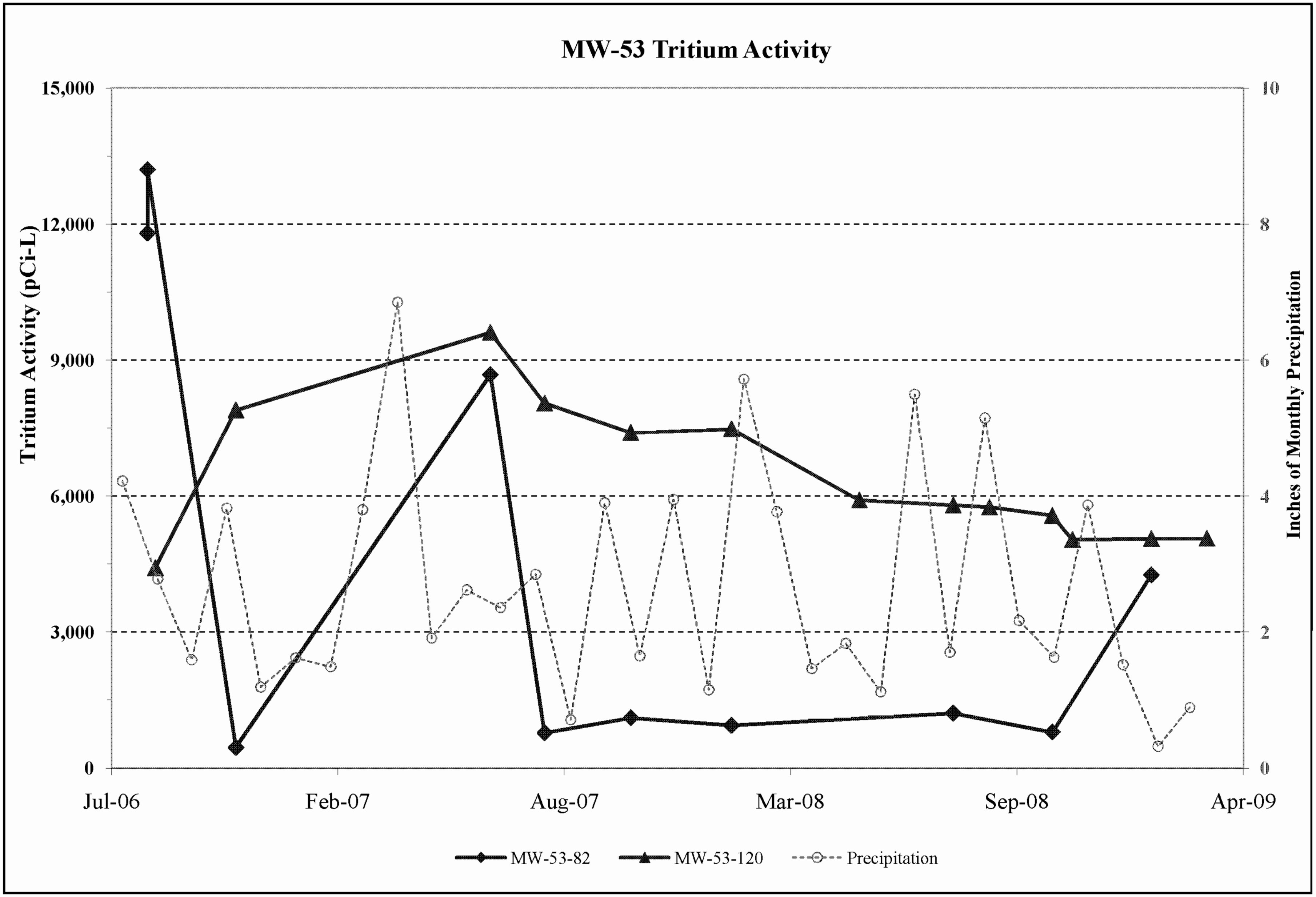

MW-53 Tritium Activity
Tritium Activity (pCi-L)
Inches of Monthly Precipitation
15,000
12,000
9,000
6,000
3,000
0
10
8
6
4
2
0
Jul-06
Feb-07
Aug-07
Mar-08
Sep-08
Apr-09
MW-53-82
MW-53-120
Precipitation

FIGURE G12

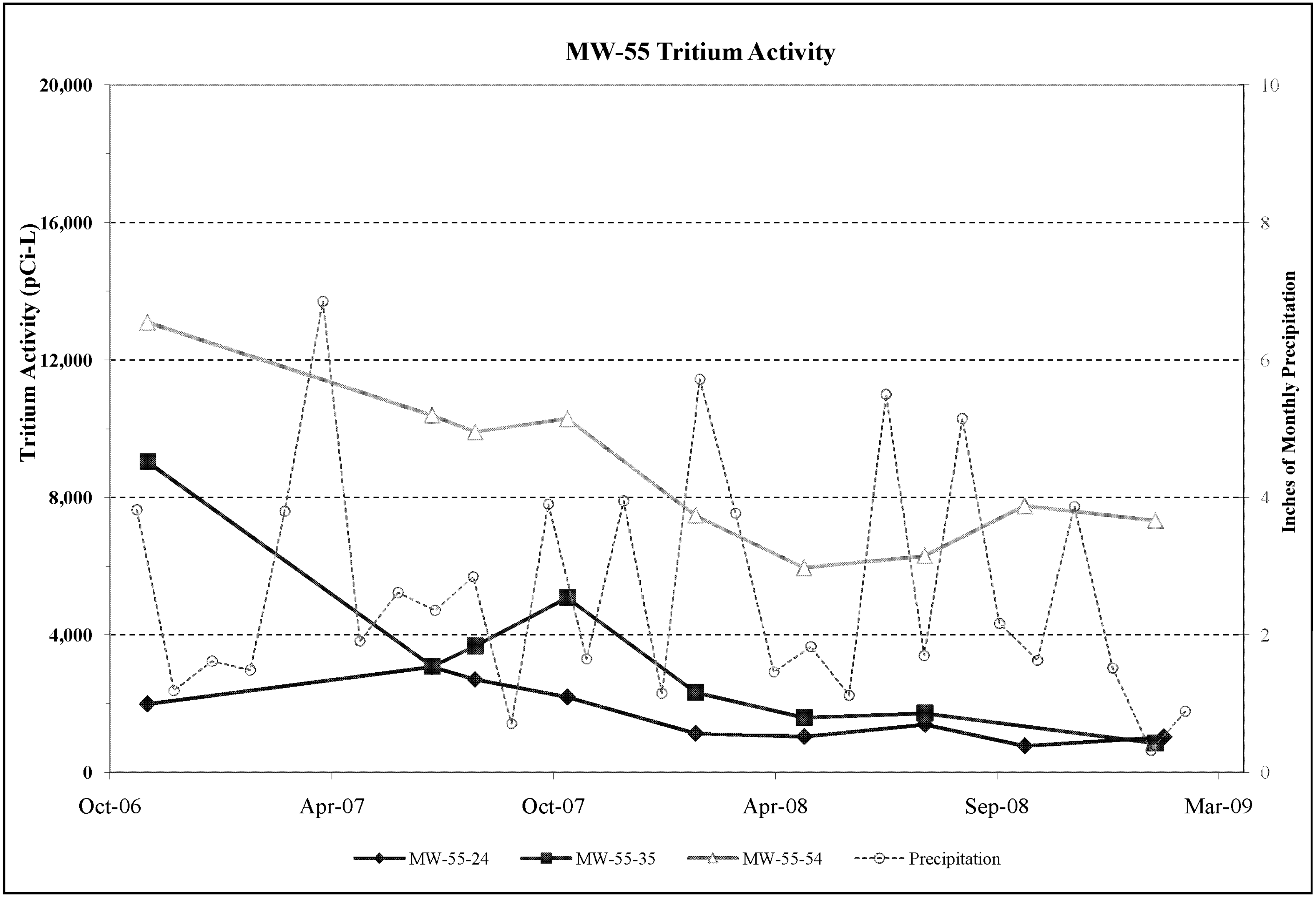

MW-55 Tritium Activity
Tritium Activity (pCi-L)
20,000
16,000
12,000
8,000
4,000
0
Inches of Monthly Precipitation
10
8
6
4
2
0
Oct-06
Apr-07
Oct-07
Apr-08
Sep-08
Mar-09
MW-55-24
MW-55-35
MW-55-54
Precipitation

FIGURE G13

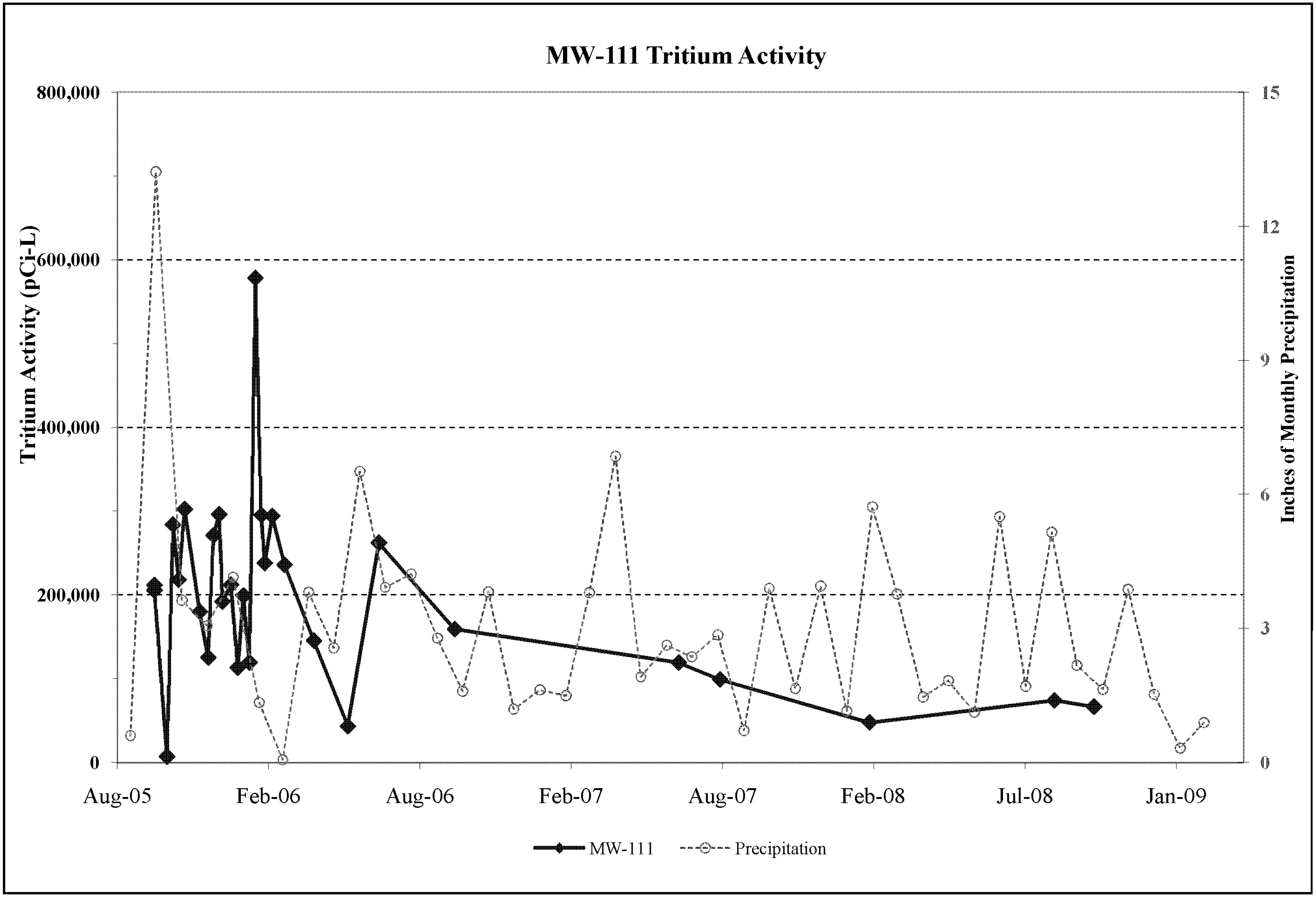
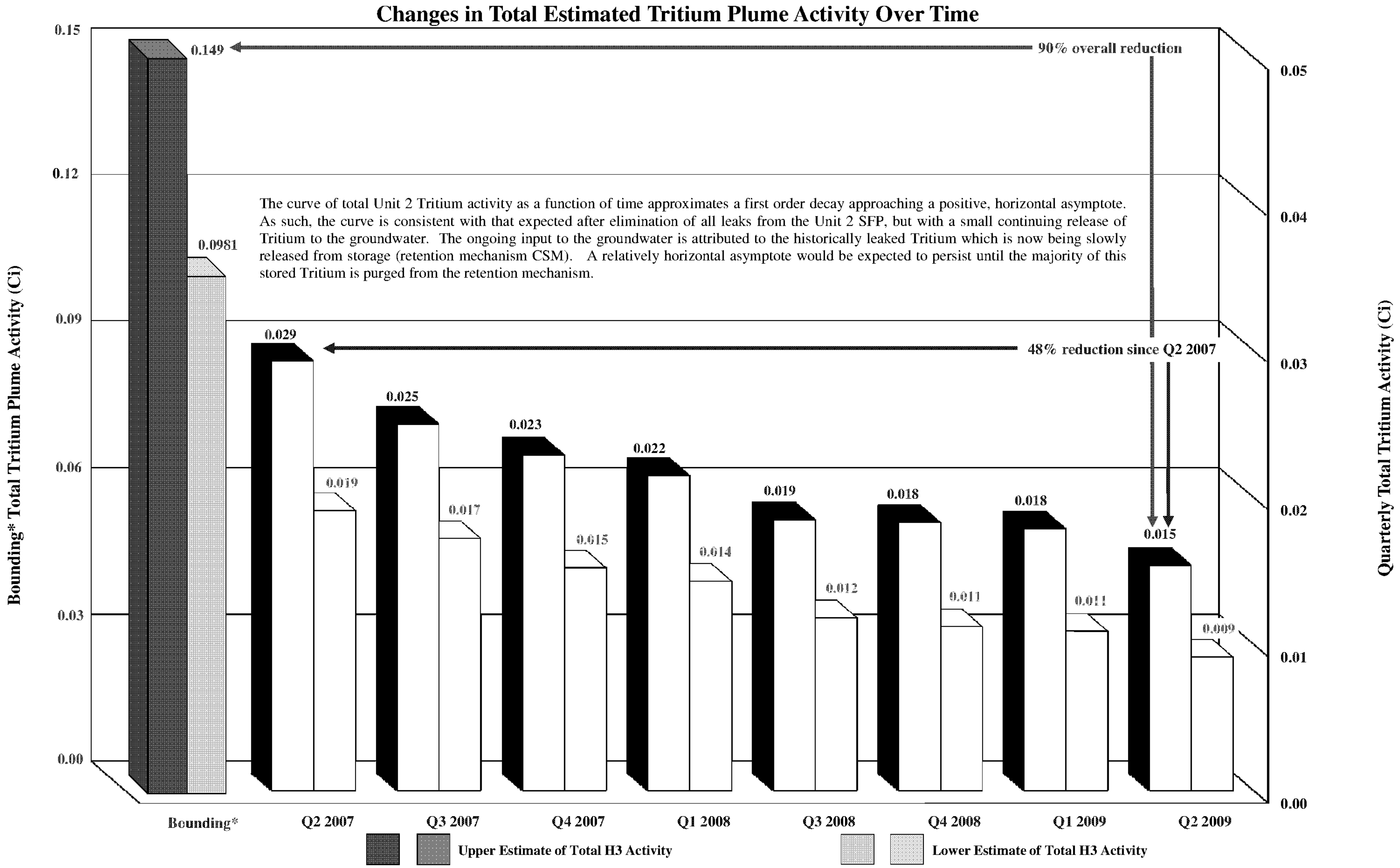

MW-111 Tritium Activity
Tritium Activity (pCi-L)
800,000
600,000
400,000
200,000
0
Inches of Monthly Precipitation
15
12
9
6
3
0
Aug-05
Feb-06
Aug-06
Feb-07
Aug-07
Feb-08
Jul-08
Jan-09
MW-111
Precipitation

FIGURE G14



Note: Lower estimate is based on a porosity of 0.0003 which was derived from a pumping test conducted in 2006. Upper estimate is based on a porosity of 0.003 derived from a tracer test conducted in 2007. The Q2 2007 to Q1 2009 Tritium plume activity estimates are each based on Tritium levels measured in the groundwater monitoring installations at individual, quarterly "snapshots" in time.

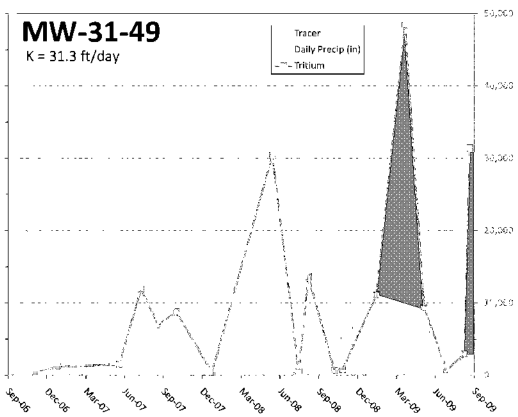
*The bounding activity estimate, however, encompasses a longer period of time, and is focused on the Tritium levels existing during the earliest portions of the groundwater investigation. During this period of time, before termination of all the identified SFP leaks, Tritium concentrations were at their highest levels, but the network of monitoring installations was still being installed. Therefore, measurements made at a multiple times were required to capture early data covering the full extent of the Tritium plume; primarily over the period from Nov 20005 through Nov 2006 (a smaller percentage of the Tritium levels required inclusion of measurements through Sept 07). For the bounding Tritium plume activity estimate, the highest value recorded for each monitoring location during this time period was used in the analysis. For further discussion see Sections 6.0, 7.0 and 8.0 of the Final Hydrogeologic Site Investigation Report, prepared by GZA and dated January 7, 2008.

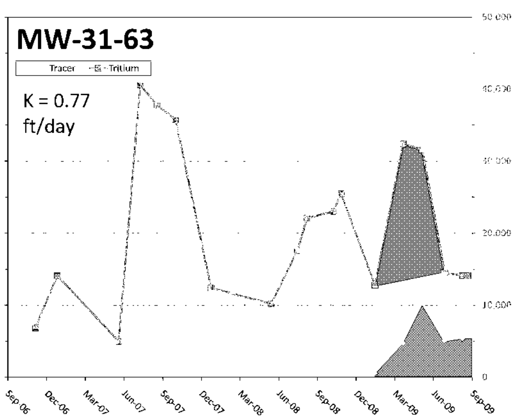
FIGURE G15

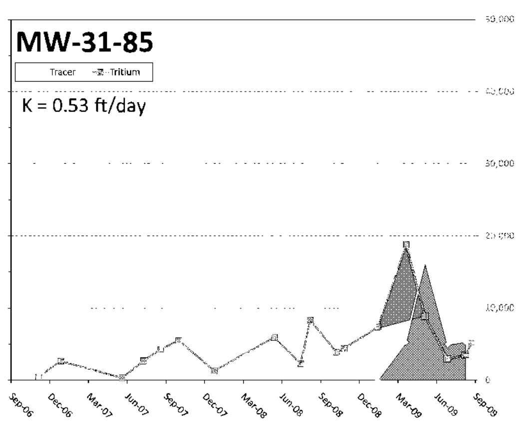
APPENDIX H: RECENT TRACER TESTING DATA

RECENT TRACER DATA

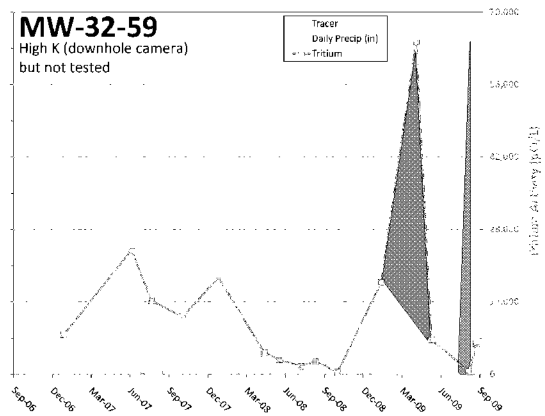
MW-31

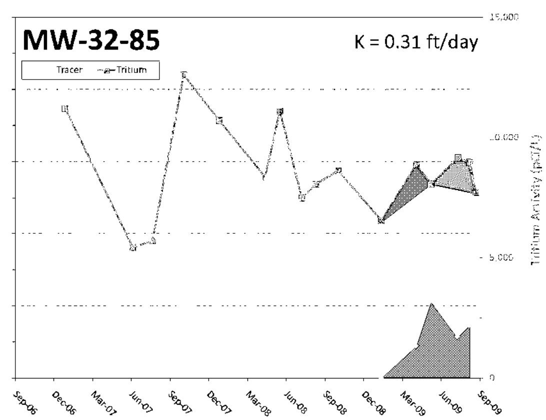


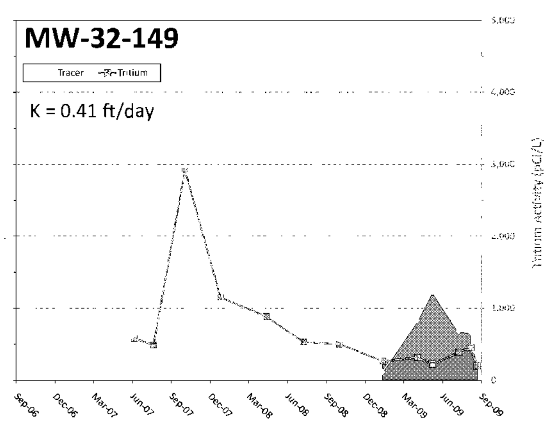


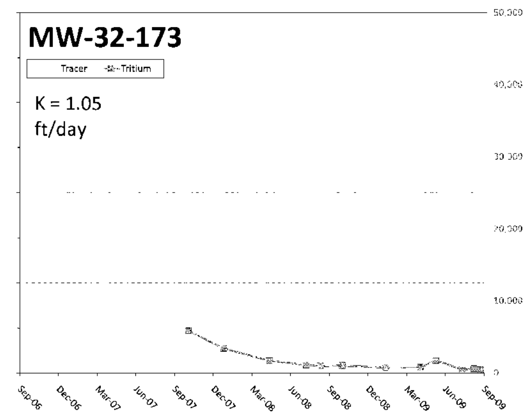


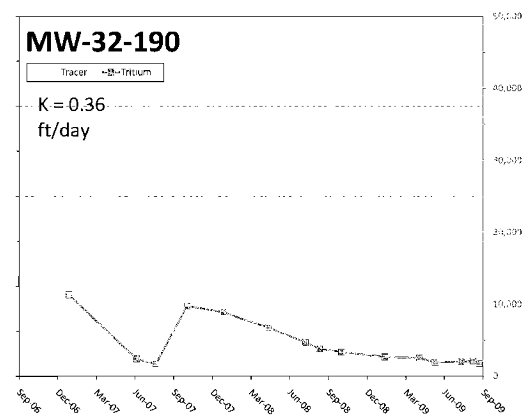
MW-32











GZA GeoEnvironmental, Inc.
Engineers and Scientists
ONE EDGEWATER DRIVE
NORWOOD, MASSACHUSETTS 02062
(781) 278-3700

INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

RECENT TRACER DATA

PROJ. MGR: MJB	DWG. DATE: 06-17-2010		FIGURE NO. H1
DESIGNED BY: MJB			
REVIEWED BY: MJB	JOB NO: 41.0017869.92		
DRAWN BY: GAS			

TABLE H1
FIRST QUARTER 2009
UNIT 2: TRACER AND TRITIUM RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

MW-31-49			
Date	**Tracer (ppb)**	**Date**	**Tritium (pCi/L)**
11/20/06	0	11/27/06	2.98E+02
11/27/06	0	1/18/07	1.20E+03
12/4/06	0	6/12/07	1.48E+03
1/18/07	0	8/2/07	1.19E+04
1/25/07	0	9/11/07	6.98E+03
2/1/07	0	10/24/07	8.77E+03
2/8/07	1,600	1/16/08	3.97E+02
2/9/07	746	6/6/08	3.04E+04
2/10/07	1,140	8/7/08	5.94E+02
2/11/07	682	2/6/09	1.11E+04
2/12/07	391	4/14/09	4.84E+04
2/13/07	275	5/29/09	9.34E+03
2/14/07	177		
2/15/07	149		
2/16/07	79.4		
2/17/07	82.5		
2/18/07	58		
2/19/07	50.5		
2/20/07	69.7		
2/21/07	29.1		
2/22/07	35.3		
2/23/07	24.6		
2/23/07	24.7		
2/26/07	24.5		
2/27/07	29.5		
2/28/07	29.9		
3/1/07	11.7		
3/2/07	14.4		
3/5/07	6.2		
3/6/07	1.9		
3/7/07	0.5		
3/8/07	0.2		
3/9/07	5.9		
3/12/07	2.4		
3/15/07	11.0		
3/16/07	15.1		
3/19/07	2.9		
3/19/07	2.8		
3/21/07	0.1		
3/23/07	0.1		
3/23/07	0.1		
3/26/07	0		
3/28/07	0.1		
3/29/07	0.2		
4/2/07	6.2		
4/4/07	0.6		
4/6/07	0.6		
4/9/07	0.4		
4/11/07	0.2		
4/18/07	2.2		
4/18/07	2.2		
4/23/07	1.7		
5/4/07	0.1		
5/4/07	0.1		
5/11/07	0.4		
6/12/07	0.4		
8/7/08	0.1		
2/6/09	0		
4/14/09	0		
5/29/09	0		
7/21/09	0		

MW-31-63			
Date	**Tracer (ppb)**	**Date**	**Tritium (pCi/L)**
11/20/06	0	11/27/06	6.89E+03
11/27/06	0	1/18/07	1.41E+04
12/4/06	0	6/12/07	5.00E+03
1/18/07	0	8/2/07	4.06E+04
1/25/07	0	9/11/07	3.77E+04
2/1/07	0	10/24/07	3.58E+04
2/8/07	0	1/16/08	1.24E+04
2/9/07	0	6/6/08	1.02E+04
2/10/07	0	8/7/08	1.76E+04
2/11/07	212	8/30/08	2.21E+04
2/12/07	1,030	10/30/08	2.30E+04
2/13/07	3,820	11/18/08	2.55E+04
2/14/07	5,830	2/6/09	1.28E+04
2/15/07	7,500	4/14/09	3.24E+04
2/16/07	8,300	5/29/09	3.16E+04
2/17/07	9,340		
2/18/07	9,310		
2/19/07	10,800		
2/20/07	12,400		
2/21/07	9,230		
2/22/07	9,760		
2/23/07	12,700		
2/26/07	11,700		
2/27/07	10,400		
2/28/07	11,800		
3/1/07	10,500		
3/2/07	10,200		
3/5/07	9,460		
3/6/07	9,590		
3/7/07	8,790		
3/8/07	8,370		
3/9/07	7,540		
3/12/07	6,460		
3/15/07	4,390		
3/16/07	3,470		
3/19/07	2,480		
3/21/07	1,470		
3/23/07	1,310		
3/26/07	767		
3/28/07	653		
3/29/07	549		
4/2/07	471		
4/4/07	487		
4/6/07	331		
4/9/07	421		
4/11/07	327		
4/18/07	230		
4/23/07	209		
5/4/07	206		
5/11/07	118		
6/12/07	82.7		
8/7/08	4.5		
2/6/09	0.1		
4/14/09	0.5		
5/29/09	1.0		
7/21/09	0.514		

Refer to Page 4 for table notes.

TABLE H1
FIRST QUARTER 2009
UNIT 2: TRACER AND TRITIUM RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

MW-31-85			
Date	Tracer (ppb)	Date	Tritium (pCi/L)
11/20/06	0	11/27/06	4.62E+02
11/27/06	0	1/18/07	2.66E+03
12/4/06	0	6/12/07	3.17E+02
1/18/07	0	8/2/07	2.69E+03
1/25/07	0	9/11/07	4.32E+03
2/1/07	0	10/24/07	5.51E+03
2/8/07	0	1/16/08	1.31E+03
2/9/07	0	6/6/08	5.95E+03
2/10/07	0	8/7/08	2.30E+03
2/11/07	0	8/30/08	8.34E+03
2/12/07	958	10/30/08	3.89E+03
2/13/07	1810	11/18/08	4.41E+03
2/14/07	1680	2/6/09	7.37E+03
2/15/07	1050	4/14/09	1.88E+04
2/16/07	715	5/29/09	8.85E+03
2/17/07	486		
2/18/07	367		
2/19/07	299		
2/20/07	222		
2/21/07	175		
2/22/07	148		
2/23/07	125		
2/26/07	99.7		
2/27/07	84.4		
2/28/07	77.3		
3/1/07	72		
3/2/07	62.6		
3/5/07	38.6		
3/5/07	38.7		
3/6/07	38.4		
3/7/07	21		
3/8/07	23.3		
3/9/07	25		
3/12/07	24.9		
3/15/07	30.7		
3/16/07	59.1		
3/19/07	68.4		
3/21/07	29.3		
3/23/07	14.4		
3/26/07	8.3		
3/28/07	8.2		
3/29/07	6.9		
4/2/07	8.3		
4/4/07	6.1		
4/6/07	4.9		
4/9/07	5		
4/11/07	4		
4/18/07	2.9		
4/23/07	2.5		
5/4/07	2.2		
5/11/07	2.5		
6/12/07	1.8		
8/7/08	0.4		
2/6/09	0		
4/14/09	0.1		
5/29/09	0.2		
7/21/09	0.05		

MW-32-59			
Date	Tracer (ppb)	Date	Tritium (pCi/L)
11/21/06	0	1/19/07	7.67E+03
11/28/06	0	6/28/07	2.40E+04
12/4/06	0	8/13/07	1.42E+04
1/18/07	0	10/26/07	1.11E+04
1/25/07	0	1/18/08	1.87E+04
2/7/07	0	5/5/08	4.15E+03
2/8/07	23,800	6/9/08	2.85E+03
2/9/07	49,000	7/31/08	1.54E+03
2/10/07	14,500	9/2/08	2.44E+03
2/11/07	7,770	10/24/08	4.13E+02
2/12/07	3,950	2/4/09	1.78E+04
2/13/07	2,030	4/27/09	6.43E+04
2/14/07	1,380		
2/15/07	939		
2/16/07	733		
2/17/07	628		
2/18/07	498		
2/19/07	474		
2/20/07	378		
2/21/07	240		
2/22/07	238		
2/23/07	181		
2/26/07	115		
2/27/07	96.4		
2/28/07	89.3		
2/28/07	87.9		
3/1/07	79		
3/2/07	123		
3/5/07	16.8		
3/6/07	1.6		
3/7/07	23		
3/8/07	30.2		
3/9/07	37.8		
3/12/07	48.7		
3/13/07	56.2		
3/14/07	81.9		
3/15/07	79.9		
3/16/07	85.9		
3/19/07	45		
3/21/07	34		
3/23/07	19.5		
3/26/07	8.9		
3/28/07	10.4		
3/29/07	11.4		
4/2/07	35.3		
4/4/07	40.5		
4/6/07	23.9		
4/9/07	16.5		
4/11/07	26.5		
4/18/07	15.1		
4/23/07	2.2		
4/23/07	2.2		
5/4/07	14.6		
5/11/07	14.2		
6/14/07	2.2		
7/13/07	1.9		
7/31/08	0.1		
2/4/09	0.0		
6/2/09	0.0		

Refer to Page 4 for table notes.

TABLE H1
FIRST QUARTER 2009
UNIT 2: TRACER AND TRITIUM RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

MW-32-85			
Date	**Tracer (ppb)**	**Date**	**Tritium (pCi/L)**
11/21/06	0	1/19/07	1.12E+04
11/28/06	0	6/28/07	5.42E+03
12/4/06	0	8/13/07	5.70E+03
1/18/07	0	10/26/07	1.26E+04
1/25/07	0	1/18/08	1.07E+04
2/7/07	0	5/5/08	8.36E+03
2/8/07	24,300	6/9/08	1.11E+04
2/9/07	4,730	7/31/08	7.48E+03
2/10/07	15,100	9/2/08	8.05E+03
2/11/07	7,810	10/24/08	8.62E+03
2/12/07	4,130	2/4/09	6.54E+03
2/13/07	2,100	4/27/09	8.87E+03
2/14/07	1,380	6/2/09	8.07E+03
2/15/07	951		
2/16/07	710		
2/17/07	643		
2/18/07	560		
2/19/07	472		
2/20/07	398		
2/21/07	340		
2/22/07	240		
2/23/07	182		
2/26/07	113		
2/27/07	95.7		
2/28/07	94.3		
3/1/07	83.8		
3/2/07	76.3		
3/5/07	70.8		
3/6/07	49.7		
3/7/07	19.9		
3/8/07	14.7		
3/9/07	19.4		
3/12/07	38.5		
3/13/07	71.1		
3/14/07	76.7		
3/15/07	85.7		
3/16/07	103		
3/19/07	141		
3/21/07	160		
3/23/07	195		
3/26/07	219		
3/28/07	235		
3/29/07	208		
4/2/07	234		
4/4/07	299		
4/6/07	340		
4/9/07	367		
4/11/07	407		
4/18/07	446		
4/23/07	461		
5/4/07	503		
5/11/07	442		
6/14/07	446		
7/13/07	275		
7/31/08	106		
2/4/09	0.1		
4/27/09	11.2		
6/2/09	26.9		
8/3/09	14.4		
8/31/09	18.4		

MW-32-149			
Date	**Tracer (ppb)**	**Date**	**Tritium (pCi/L)**
2/7/07	0	1/19/07	1.05E+04
2/8/07	0	6/28/07	5.81E+02
2/9/07	0	8/13/07	4.93E+02
2/10/07	36.9	10/26/07	2.92E+03
2/11/07	1,650	1/18/08	1.15E+03
2/12/07	3,850	5/5/08	8.83E+02
2/12/07	3,840	7/31/08	5.32E+02
2/13/07	4,160	10/24/08	5.03E+02
2/14/07	3,620	2/4/09	2.65E+02
2/14/07	3,620	4/27/09	3.21E+02
2/15/07	2,650	6/2/09	2.24E+02
2/16/07	1,970		
2/16/07	1,990		
2/17/07	1,590		
2/18/07	1,270		
2/19/07	1,120		
2/20/07	926		
2/21/07	682		
2/22/07	605		
2/23/07	489		
2/26/07	121		
2/27/07	97.7		
2/28/07	92.9		
3/1/07	87.8		
3/2/07	72.4		
3/5/07	98.2		
3/6/07	110		
3/7/07	102		
3/8/07	102		
3/9/07	97.3		
3/12/07	105		
3/13/07	102		
3/14/07	98.3		
3/15/07	95.1		
3/16/07	94.8		
3/19/07	84.8		
3/21/07	79.5		
3/23/07	88.2		
3/26/07	75.3		
3/28/07	67.8		
3/29/07	62.4		
4/2/07	52.5		
4/4/07	51.8		
4/6/07	53.7		
4/9/07	48.3		
4/11/07	45.2		
4/18/07	38.2		
4/23/07	33		
5/4/07	28.6		
5/11/07	25.2		
6/14/07	16.4		
7/13/07	11.7		
7/31/08	3.52		
2/4/09	0.117		
4/27/09	0.832		
6/2/09	1.23		

Refer to Page 4 for table notes.

TABLE H1
FIRST QUARTER 2009
UNIT 2: TRACER AND TRITIUM RESULTS
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

MW-32-173			
Date	**Tracer (ppb)**	**Date**	**Tritium (pCi/L)**
7/31/08	9.46	10/26/07	5.89E+03
6/2/09	3.73	1/18/08	3.40E+03
		5/5/08	1.69E+03
		7/31/08	1.08E+03
		9/2/08	9.72E+02
		10/24/08	1.03E+03
		2/4/09	7.56E+02
		4/27/09	7.86E+02
		6/2/09	1.72E+03

MW-32-190			
Date	**Tracer (ppb)**	**Date**	**Tritium (pCi/L)**
11/21/06	0	1/19/07	1.13E+04
11/28/06	0	6/28/07	2.41E+03
12/4/06	0	8/13/07	1.72E+03
1/18/07	0	10/26/07	9.76E+03
1/25/07	0	1/18/08	8.89E+03
1/25/07	0	5/5/08	6.73E+03
2/7/07	0	7/31/08	4.71E+03
2/8/07	0	9/2/08	3.81E+03
2/9/07	0	10/24/08	3.35E+03
2/10/07	0	2/4/09	2.69E+03
2/11/07	0	4/27/09	2.54E+03
2/12/07	0	6/2/09	1.95E+03
2/13/07	0		
2/14/07	1.4		
2/15/07	16		
2/16/07	75		
2/17/07	143		
2/18/07	247		
2/19/07	417		
2/20/07	385		
2/21/07	525		
2/22/07	581		
2/23/07	569		
2/26/07	621		
2/27/07	558		
2/28/07	543		
3/1/07	488		
3/2/07	380		
3/5/07	326		
3/6/07	297		
3/7/07	210		
3/8/07	168		
3/9/07	159		
3/12/07	160		
3/13/07	142		
3/14/07	145		
3/15/07	148		
3/16/07	140		
3/19/07	132		
3/21/07	135		
3/23/07	150		
3/26/07	147		
3/28/07	150		
3/29/07	131		
4/2/07	137		
4/4/07	141		
4/6/07	148		
4/9/07	156		
4/11/07	142		
4/18/07	129		
4/23/07	117		
5/4/07	109		
5/11/07	88		
6/14/07	56		
7/13/07	38.6		
7/31/08	10.7		
6/2/09	3.3		

Notes:
1. For Waterloo multi-level systems, the suffix of the sample identification indicates depth (rounded to nearest foot) from reference point on casing to top of sampling port.
2. Sampling depths within sampling intervals (location of pump intake) have been established at location of most transmissive zone to the extent possible.
3. Current well identifications are shown for each location. Minor name changes have been made based on altered transducer installations.
4. Tracer samples were analyzed by Ozark Underground Laboratory, Inc. (OUL) of Protem, Missouri for the presence of fluorescein, eosine and rhodamine WT (RWT) dyes. Eosine and RWT dyes were not detected. Therefore this table summarizes fluorescein dye concentrations.
5. Dye concentrations are reported in parts per billion (ppb).

GZA GeoEnvironmental, Inc.

Engineers and Scientists

MEMORANDUM

TO: Mr. Patrick Donahue – Entergy
Mr. Bob Evers – Enercon

FROM: Matthew Barvenik and Dave Rusczyk – GZA

DATE: June 14, 2010

RE: Memorandum - Additional Tracer Test Analyses

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As part of the hydrogeological investigation program performed at the Indian Point Energy Center (IPEC) site located in Buchanan, New York, GZA GeoEnvironmental, Inc. (GZA), on behalf of Entergy, previously conducted an extensive tracer study in the vicinity of the Unit 2 Spent Fuel Pool (IP2-SFP). The purpose of this technical Memorandum, prepared at your request, is to provide the results of additional tracer sampling and analyses subsequently conducted as part of the Quarter 3 2008 Long Term Monitoring Program[1].

BACKGROUND

The groundwater tracer testing was initiated on February 8, 2007 with the injection of fluorescein dye into the vadose zone at the top of the bedrock surface immediately adjacent to the IP2-SFP and monitoring well MW-30. Subsequent to the injection, routine groundwater sampling and analyses were conducted through approximately June 2007[2] with the results presented in the January 2008 Final Hydrogeologic Site Investigation Report (Final Report[3]).

As initially identified in the Final Report and more recently discussed in the Q1 2009 Long Term Monitoring Report, the Unit 2 Tritium plume has decreased in concentration relative to the samples taken just after identification of the 2005 shrinkage crack leak[4] and continues to show a general trend of decreasing concentrations over time. However, the plume still exhibits concentrations greater than we can explain if there were no further Tritium inputs <u>to the groundwater</u>; i.e., the plume would attenuate more quickly than observed[5]. This reduced rate of Tritium decrease over time can be explained by either: 1) an ongoing small (< 5L/day) leak in the IP2- SFP; 2) a "retention mechanism" in the saturated and unsaturated zones under the IP2-SFP that can retain

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[1] These tracer data were also provided in the IPEC Quarterly Long-Term Groundwater Monitoring Report, Quarters Two and Three, Report No. 3, February 6, 2009.

[2] Additional more limited sampling was conducted through approximately August 2007. However, the "current" sampling data presented in the Final Report (as Figure 7.3) was through June 2007 to take advantage of the increased number of sampling locations up to that time.

[3] Hydrogeologic Site Investigation Report, January 7, 2008, prepared by GZA GeoEnvironmental, Inc, on behalf of Enercon Services, Inc., for Entergy Nuclear Northeast, Indian Point Energy Center, 450 Broadway, Buchanan, NY 10511.

[4] For example, the earliest samples taken from directly below the SFP in MW-30 (open borehole and packer testing samples) yielded Tritium concentrations over 600,000 pCi/L. More currently, maximum concentrations detected have been below one-half of those initial concentrations.

[5] Rapid attenuation of the Tritium plume would be expected based on 1) Tritium's lack of partitioning to solid materials in the subsurface; 2) the crystalline nature and low storativity of the bedrock; and 3) the computed and observed groundwater transport rate.

substantial volumes of highly tritiated water (e.g., SFP leakage) for substantial amounts of time[6]; and/or 3) a combination of the above.

While Tritium concentrations in the groundwater plume could be impacted by both an ongoing leak and the retention mechanisms cited above, tracer concentrations in the groundwater cannot be replenished by SFP leakage. Given the elapsed time of approximately one and a half years from the initial tracer injection, we calculate that in the absence of groundwater storage mechanisms, significant concentrations of the tracer would now have been flushed from the groundwater flow system. As shown in Figure 1 and discussed below, significant tracer still remains.

RESULTS

To provide further data with which to continue testing the validity of the Conceptual Site Model (CSM), additional groundwater samples were collected and analyzed for fluorescein concentrations during the Third Quarter of the 2008 (Q3 2008) Long Term Groundwater sampling round. A summary of the results of the fluorescein analyses is presented in Table 1. These data, as discussed below, continue to support the existence of storage/retention mechanisms, which explain the currently observed decreased rate of Tritium reduction in the groundwater over time[7].

Figure 1 is patterned after Figure 7.3 from the Final Investigation Report. For Figure 1, the "current tracer concentration isopleths" reflect an August 2008 sampling date rather than the then current June 2007 date cited in Figure 7.3; over one year later. As compared to that shown on Figure 7.3, the current tracer plume shows reduced concentrations proximate to the IP2-SFP, but also shows that the plume length has extended along the Tritium plume alignment all the way to the river. Additionally, we note that:

- To the extent defined by this more limited data set, the general plume shape has remained approximately the same, with additional elongation towards the river;
- Although reduced in magnitude, the current concentrations generally match the relative trends exhibited previously; i.e., pursuant to variation between proximate locations and over depth at individual locations. For example, the middle sampling zone in MW-31 still shows the highest concentration for this location, followed by the lowest zone and then the uppermost zone[8]; and
- Water was found in the vadose zone above the top packer in RW-1. This "trapped water" was sampled and yielded a very high tracer concentration (39,000 ppb as compared to the highest concentration detected in the groundwater over the entire test duration; i.e., 49,000 ppb in MW-32 near the very beginning of the testing. We believe these data demonstrate that "dead end fractures" have the capacity to store substantial contaminant concentrations over relatively long periods of time.

[6] This hypothesized "retention mechanism" is supported by our understanding of the construction methods used for the IP2-SFP and adjacent structures, evaluations of contaminant concentration variability trends over short timeframes and precipitation events, as well as the original tracer test results, as further described in Sections 7.0 and 8.0 of the Final Report.
[7] Decreased rate as compared to the case where there are no continuing additions of Tritium to the groundwater flow regime from the vadose zone.
[8] As provided in the figure legend, the tracer concentrations for the "June 2007 current plume" are provided to the left of the bar graphs for each sampling depth.

CONCLUSIONS

Overall, these findings from the most recent tracer sample analyses are consistent with the previous tracer data, and the associated conclusions presented in the Final Report. As such, the current demonstration that the tracer persists in the groundwater flow regime over even much longer time frames now provides even stronger support for the existence of "retention mechanisms," as posited by existing the CSM for the IPEC site. In fact, a direct analog for "contaminant storage in dead-end bedrock fractures" is provided by the high tracer concentrations found above the upper packer in the vadose zone in RW-1. Therefore, given that tritiated water behaves much as the tracer does, it should be expected that once highly tritiated water has been released from the SFP, it becomes "trapped" (held in storage) and is slowly released to the groundwater flow regime over substantial periods of time. These retention mechanisms therefore act as a continuing source to the groundwater and thus can explain the observed slow rate of Tritium concentration reduction in the Unit 2 plume. Therefore, the persistence of the Unit 2 Tritium plume does not, in and of itself, demonstrate that the Unit 2 SFP must still be leaking. In fact, the currently observed behavior was predicted in the Final Report based on the then available data.

We appreciate the opportunity to be of service to you. Should you have any questions or comments, please feel free to contact Matt or Dave at (781) 278-3805 or (860) 858-3110.

Very truly yours,
GZA GEOENVIRONMENTAL, INC.

Matthew J. Barvenik, LSP
Senior Principal

Date:June 14, 2010

David Rusczyk, PE
Senior Project Manager

Date:June 14, 2010

Michael Powers, PE
Consultant/Reviewer

Date:June 14, 2010

Attachments: Table 1: 2008 3rd Quarter Groundwater Analytical Results for Tracer Dye (Fluorescein)

Figure 1: Current Tracer (Fluorescein) Concentration Isopleths in Groundwater

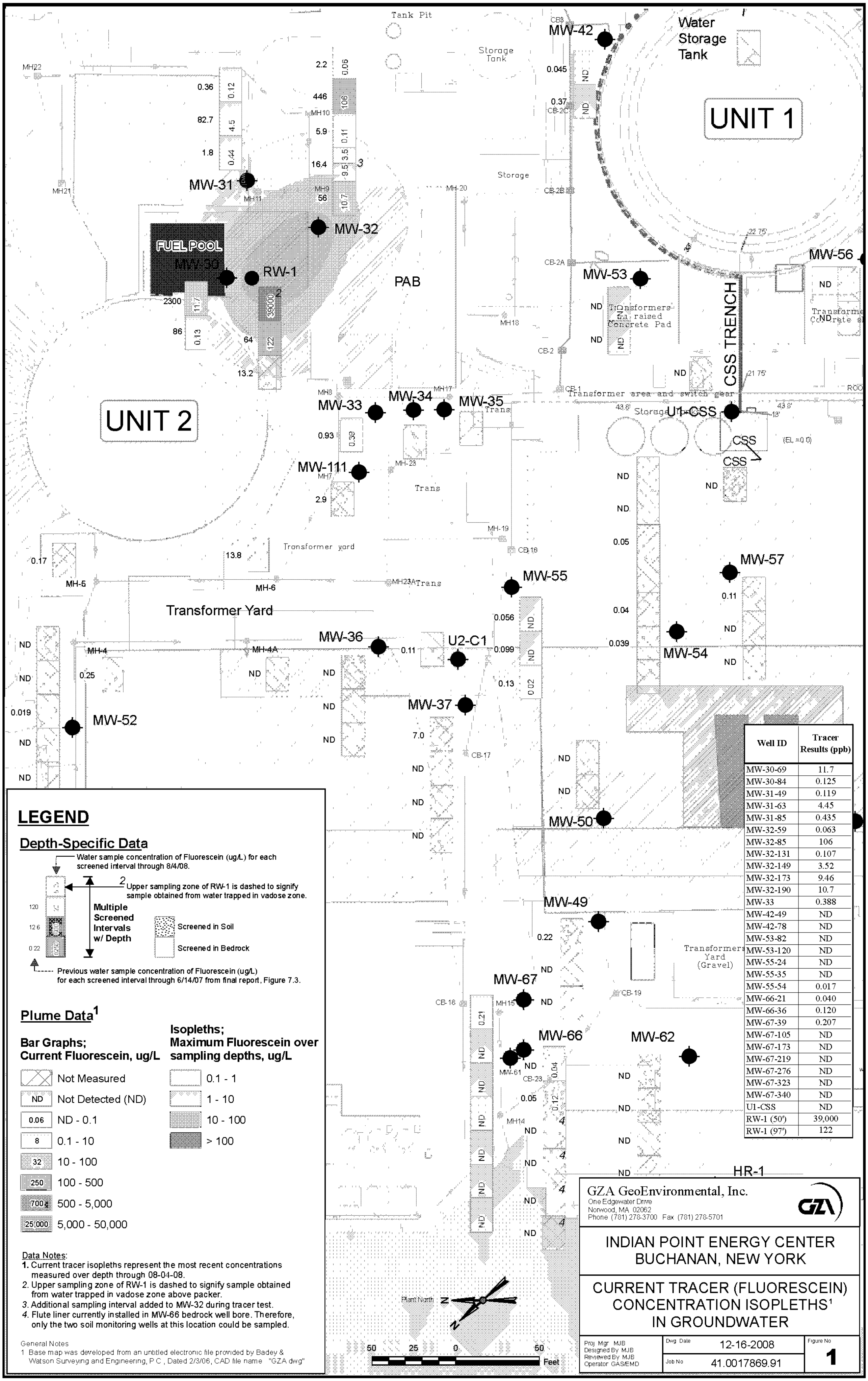
TABLE 1
2008 3rd QUARTER
GROUNDWATER ANALYTICAL RESULTS
for TRACER DYE (FLUORESCEIN)
INDIAN POINT ENERGY CENTER
BUCHANAN, NY

Well ID[1]	Sample Collection		Results	
	Date	Time	Peak (nm)[2]	Concentration (ppb)[2]
MW-30-69	8/5/08	10:24	515.1 [3]	11.7
MW-30-84	8/5/08	10:30	513.4 [3]	0.125
MW-31-49	8/7/08	11:34	514.1 [3]	0.119
MW-31-63	8/7/08	9:17	512.7 [3]	4.45
MW-31-85	8/7/08	9:13	513.9 [3]	0.435
MW-32-59	7/31/08	11:57	512.8 [3]	0.063
MW-32-85	7/31/08	13:30	509.2	106
MW-32-131	7/31/08	11:29	508.6	0.107
MW-32-149	7/31/08	9:54	508.8	3.52
MW-32-173	7/31/08	9:52	508.5	9.46
MW-32-190	7/31/08	9:50	508.7	10.7
MW-33	8/1/08	12:45	508.5	0.388
MW-42-49	8/4/08	13:52	ND [4]	ND
MW-42-78	8/4/08	12:08	ND	ND
MW-53-82	8/4/08	10:02	ND	ND
MW-53-120	8/4/08	9:40	ND	ND
MW-55-24	8/1/08	10:10	ND	ND
MW-55-35	8/1/08	9:44	ND	ND
MW-55-54	8/1/08	9:26	508.6 [3]	0.017
MW-66-21	7/29/08	10:20	508.2 [5]	0.040
MW-66-36	7/29/08	10:25	509.0	0.120
MW-67-39	7/28/08	12:42	508.7	0.207
MW-67-105	7/28/08	12:40	ND	ND
MW-67-173	7/28/08	12:35	ND	ND
MW-67-219	7/28/08	9:33	ND	ND
MW-67-276	7/28/08	9:35	ND	ND
MW-67-323	7/28/08	9:40	ND	ND
MW-67-340	7/28/08	9:26	ND	ND
U1-CSS	8/1/08	13:50	ND	ND
RW-1 (50')	8/5/08	11:25	508.7	39,000
RW-1 (97')	8/5/08	11:45	508.5	122

Notes:

* Dye concentrations are based upon standards used at the Ozark Underground Laboratory. The standard concentrations are based upon the as-sold weight of the dye that the OUL uses. The is a mixture of 75% dye and 25% diluent.

1. For nested multi-level monitoring wells, suffix of well ID indicates depth (rounded to nearest foot) from reference point on casing to bottom of well screen. For Waterloo multi-level systems, suffix indicates depth (rounded to nearest foot) from reference point on casing to top of sampling port. Well IDs without a suffix are open bedrock wellbores.
2. Peak wavelengths are reported in nanometers (nm); dye concentrations are reported in parts per billion (ppb).
3. A fluorescence peak is present that does not meet all the criteria for this dye. However, it has been calculated as though it were the tracer dye.
4. ND indicates that tracer (fluorescein) was not detected.
5. A fluorescence peak is present that does not meet all the criteria for a positive dye result. However, it has been calculated as though it were the tracer dye.



Well ID	Tracer Results (ppb)
MW-30-69	11.7
MW-30-84	0.125
MW-31-49	0.119
MW-31-63	4.45
MW-31-85	0.435
MW-32-59	0.063
MW-32-85	106
MW-32-131	0.107
MW-32-149	3.52
MW-32-173	9.46
MW-32-190	10.7
MW-33	0.388
MW-42-49	ND
MW-42-78	ND
MW-53-82	ND
MW-53-120	ND
MW-55-24	ND
MW-55-35	ND
MW-55-54	0.017
MW-66-21	0.040
MW-66-36	0.120
MW-67-39	0.207
MW-67-105	ND
MW-67-173	ND
MW-67-219	ND
MW-67-276	ND
MW-67-323	ND
MW-67-340	ND
U1-CSS	ND
RW-1 (50')	39,000
RW-1 (97')	122

LEGEND

Depth-Specific Data

Water sample concentration of Fluorescein (ug/L) for each screened interval through 8/4/08.

2 Upper sampling zone of RW-1 is dashed to signify sample obtained from water trapped in vadose zone.

Multiple Screened Intervals w/ Depth

Screened in Soil

Screened in Bedrock

Previous water sample concentration of Fluorescein (ug/L) for each screened interval through 6/14/07 from final report, Figure 7.3.

Plume Data[1]

Bar Graphs; Current Fluorescein, ug/L

- Not Measured
- ND Not Detected (ND)
- 0.06 ND - 0.1
- 8 0.1 - 10
- 32 10 - 100
- 250 100 - 500
- 700 500 - 5,000
- 25,000 5,000 - 50,000

Isopleths; Maximum Fluorescein over sampling depths, ug/L

- 0.1 - 1
- 1 - 10
- 10 - 100
- > 100

Data Notes:

1. Current tracer isopleths represent the most recent concentrations measured over depth through 08-04-08.
2. Upper sampling zone of RW-1 is dashed to signify sample obtained from water trapped in vadose zone above packer.
3. Additional sampling interval added to MW-32 during tracer test.
4. Flute liner currently installed in MW-66 bedrock well bore. Therefore, only the two soil monitoring wells at this location could be sampled.

General Notes

1 Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, P C , Dated 2/3/06, CAD file name "GZA dwg"

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INDIAN POINT ENERGY CENTER
BUCHANAN, NEW YORK

CURRENT TRACER (FLUORESCEIN) CONCENTRATION ISOPLETHS[1] IN GROUNDWATER

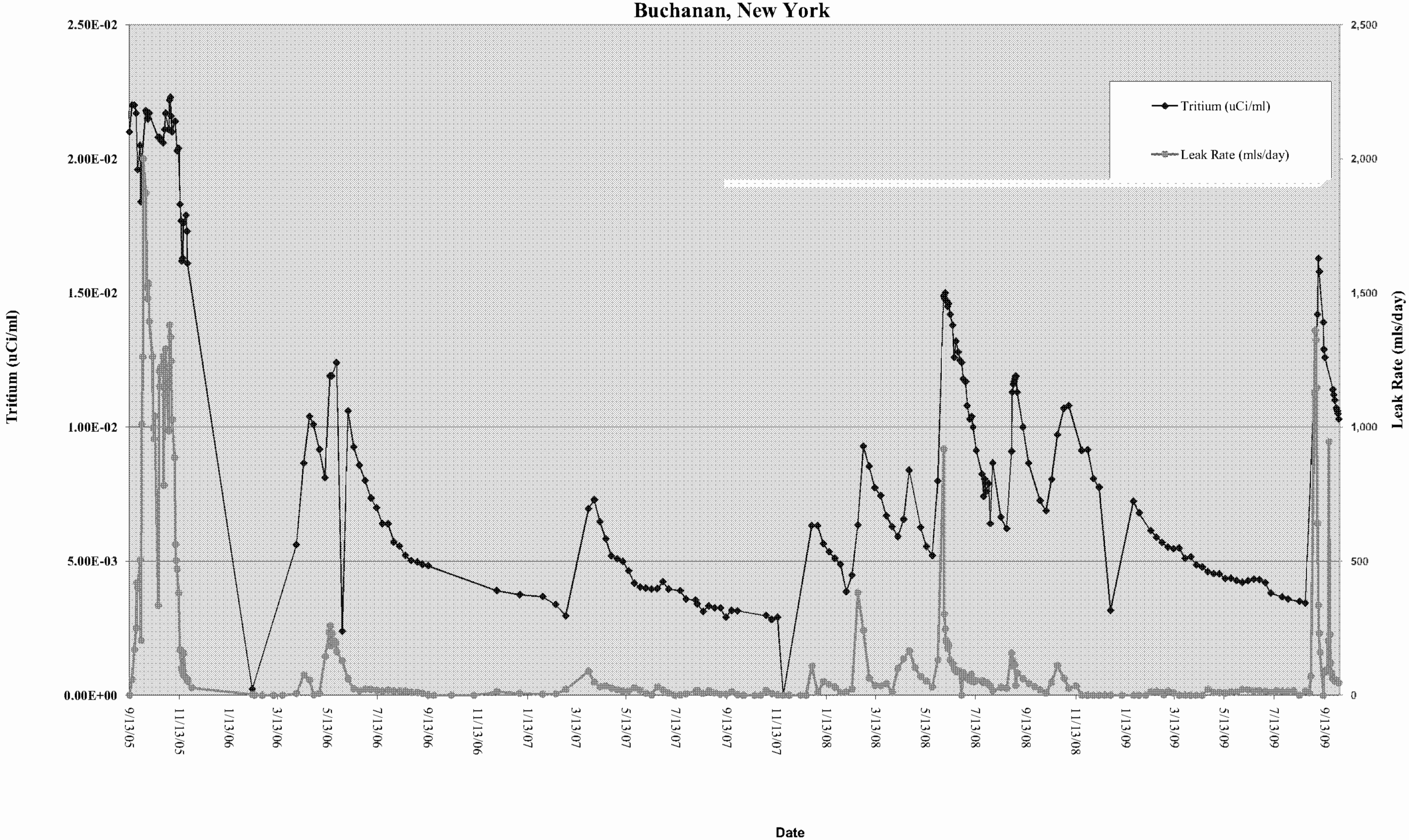
Proj Mgr MJB
Designed By MJB
Reviewed By MJB
Operator GAS/EMD

Dwg Date 12-16-2008
Job No 41.0017869.91
Figure No 1

J:\17,000-18,999\17869\17869-91 MG\Figures\GIS\MXD Documents\17869-91_F01_Current Tracer Concentration Map mxd

APPENDIX I: LEAK COLLECTION BOX DATA

Figure I-1
Collection Box Data
Indian Point Energy Center
Buchanan, New York



W:\17,000-18,999\17869\17869-91.MG\Unit 2 Collection Box\Updated 09-8-6 SFP LCD (2).xls

November 19, 2009

APPENDIX J: LAFARGE WELL LAF-002 REFURBISHMENT

GZA GeoEnvironmental, Inc.

Engineers and Scientists

MEMORANDUM

TO: Mr. Patrick Donahue – Entergy
Mr. Bob Evers – Enercon

FROM: Matthew Barvenik and Dave Rusczyk – GZA

DATE: June 14, 2010

RE: Memorandum - LaFarge Well Refurbishment Summary

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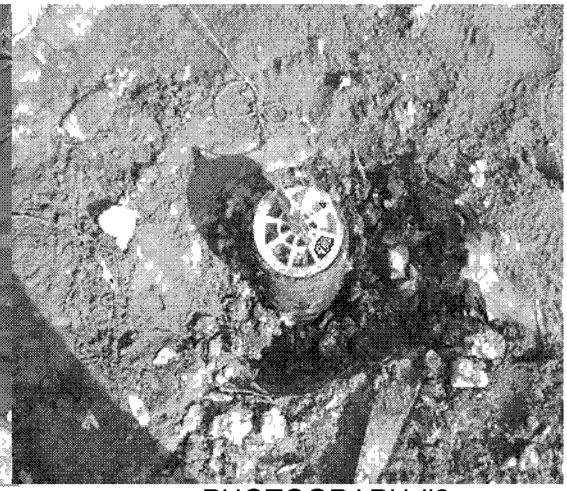
At the request of Entergy Nuclear Northeast, Inc. (Entergy) and under subcontract to Enercon Services, Inc., GZA GeoEnvironmental of New York (GZA) refurbished existing bedrock monitoring well LAF-002 (also previously referred to as MW-2) located at the LaFarge Gypsum property to the south of the Indian Point Energy Center (IPEC). Well LAF-002 is being refurbished for use in IPEC's Long Term Groundwater Monitoring Program (LTMP). The following is a summary of the condition of well LAF-002 prior to refurbishment and the refurbishment activities performed in November 2008 by GZA.

- According to installation logs included in a letter report dated February 12, 2001 by Earth Data Incorporated, LAF-002 was constructed with 26.5 feet of six-inch interior diameter steel casing set into the bedrock surface (approximately 10 feet below grade [fbg]). The well originally consisted of an open borehole from 26.5 to 50 fbg; however the well was later extended to 140 fbg in an attempt to increase well yeild. Potential fractures were observed at 42 fbg, 48 fbg, 80-90 fbg, 110-115 fbg, and 135 fbg. After deepening, the well yield was estimated to have doubled, but still less than ¼ gallons per minute (gpm).

- LAF-002 is located adjacent to large gypsum piles and the steel casing for the well is cut-off flush with the ground surface (See Photographs #1, #2 and #3 below). It is also noted that the gypsum pile has, in the recent past, extended over the well, which was, at that time, extended above the pile with PVC casing (See Photograph #4). The well is equipped with an expandable cap; however given the condition of the well and the proximity of the gypsum pile, groundwater quality within the well may potentially be influenced by surface water infiltration. Since this well has been incorporated into the IPEC LTMP, the well was redeveloped and the top of the well refurbished to mitigate potential surface water infiltration.


PHOTOGRAPH #1


PHOTOGRAPH #2


PHOTOGRAPH #3


PHOTOGRAPH #4

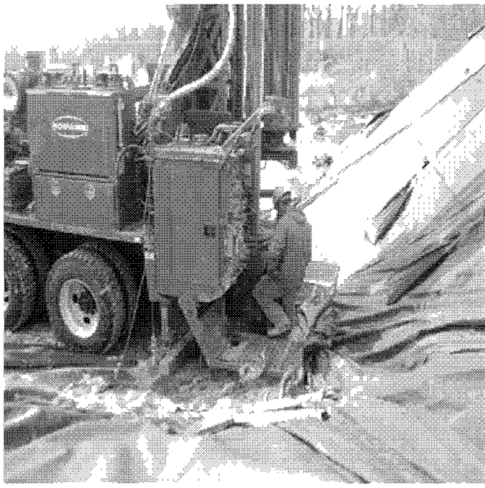
- Between November 24th and 25th, 2008, SGS Drilling Services (SGS) of West Creek, NJ, under contract to and supervision by GZA, mobilized to the Site to redevelop and refurbish the well head of monitoring well LAF-002. Prior to re-development, GZA temporarily removed the dedicated bladder pump and tubing from the well and measured a total well depth of 148.5 fbg feet[1].

- SGS advanced a roller bit to the bottom of the well to break up the settled materials present at the bottom of the well[2] (See Photographs #5 and #6 below). During this process, water was flushed through the drilling rods to the bottom of the well and subsequently up to the ground surface. The flushed material was slightly turbid and included PVC cuttings, other plastic debris, metal shavings, sand, gravel, and black rock.

---

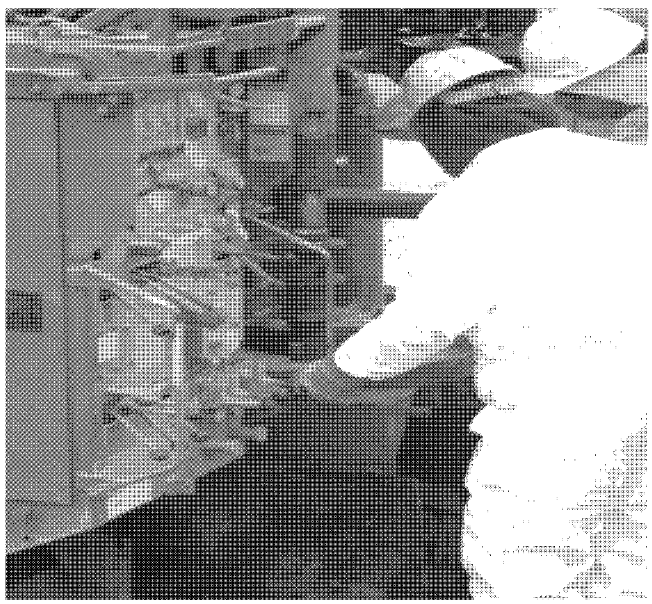
1 The measured depth to bottom of the well is different from that noted on the boring log (140') in the Earth Data Incorporated letter report, dated February 12, 2001. Given the presence of the adjacent gypsum pile, it is likely the grade in the vicinity of the well has changed.

2 While lowering the drilling rods, it became apparent that the borehole was not vertical, nor linear, given the drill rod binding observed. GZA believes that the well was installed at a slight angle and that the borehole curves slightly to the south with depth.



PHOTOGRAPH #5 PHOTOGRAPH #6

- SGS subsequently utilized a customized surge block to surge the length of the well three times (See Photograph #7 below). Additional surging was also performed in the three zones within the borehole containing the most productive fractures (as based on the original drilling logs) and twenty-feet above the static water table. Water was added to the well casing so that the interval above the static water column could be surged.

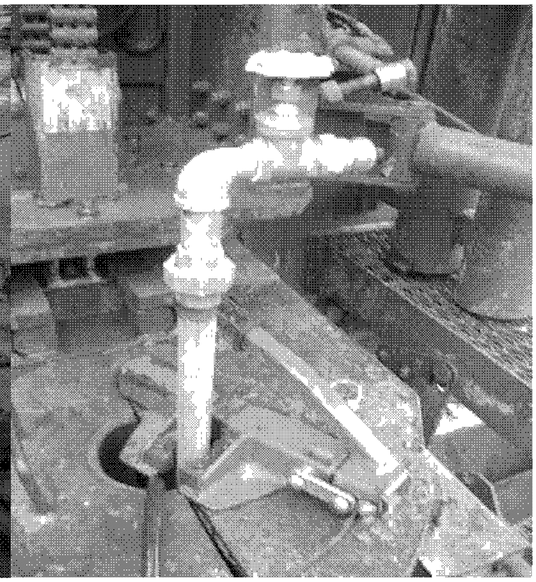


PHOTOGRAPH #7

- Following surging, SGS used air lifting techniques to remove both coarse and fine materials from the well. This technique involved injecting air into the bottom of the well at relatively high pressures resulting in a rapid evacuation of the contents of the well and the creation of a differential pressure between the static groundwater surrounding the borehole and the bottom of the well. This differential pressure forced groundwater to flow into the well from the productive fractures and further flush sediment out of the bedrock fractures. During this process, GZA observed additional debris (PVC cuttings, plastic, and metal shavings) and sediment (sand, silt, gravel, and rock) among the evacuated materials.

- The following day, SGS purged the well at approximately five gpm using a submersible pump (See Photographs #8 and 9 below). This process was continued until the well purged dry. It should be noted that the purge water ran clear within a few minutes of purge commencement.


PHOTOGRAPH #8


PHOTOGRAPH #9

- SGS repaired the wellhead to protect it from runoff, intrusion of debris and foreign materials, and damage by moving vehicles and equipment. SGS welded a length of 6-inch steel casing onto the top of the existing casing so that it extended approximately three feet above the surrounding ground surface. SGS also installed a concrete pad around the base of the well casing and four 5-foot concrete filled bollards a few feet from each corner of the pad. The well casing and bollards were painted yellow and a lockable cap with lock was installed on the well head. (See Photograph #10 below).


PHOTOGRAPH #10

We appreciate the opportunity to be of service to you. Should you have any questions or comments, please feel free to contact Matt or Dave at (781) 278-3805 or (860) 858-3110.

Very truly yours,
GZA GEOENVIRONMENTAL, INC.

Matthew J. Barvenik, LSP
Senior Principal

Date:June 14, 2010

David Rusczyk, PE
Senior Project Manager

Date:June 14, 2010

Michael Powers, PE
Consultant/Reviewer

Date:June 14, 2010

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APPENDIX K: GROUNDWATER LEVEL TRANSDUCER REDEPLOYMENT

GZA GeoEnvironmental, Inc.

Engineers and Scientists

MEMORANDUM

TO: Mr. Patrick Donahue – Entergy
Mr. Bob Evers – Enercon

FROM: Matthew Barvenik and Dave Rusczyk – GZA

REVIEWED BY: Michael Powers – GZA

DATE: June 14, 2010

RE: Memorandum on Proposed Redeployment of Groundwater Level Transducers for the Long Term Monitoring Program

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At the request of Entergy Nuclear Northeast, Inc. (Entergy) and under subcontract to Enercon Services, Inc., GZA GeoEnvironmental of New York (GZA) has evaluated the continued use of the existing groundwater level transducers as part of the Long Term Monitoring Program. The following memo provides the basis for our recommendation that a limited number of these transducers be maintained in long-term operation.

BACKGROUND

As a part of the Hydrologic Site investigation for the Indian Point Energy Center (IPEC), electronic pressure transducers were placed in a large number of monitoring wells[1] at the site to routinely record groundwater levels over time. These data were converted into groundwater elevations, both water table elevations and piezometric elevations at multiple depths in the formation up to 350 feet below ground surface. The groundwater elevations were then used to develop groundwater contours and thus horizontal and vertical gradients across the site. These gradients, along with the hydraulic conductivities (measured using other investigation methods), were employed to compute groundwater flow rates through the site. These data, in part, formed the basis for the formulation, and refinement over time, of the Conceptual Site Model (CSM). The large amount of multi-level transducer data collected during the investigations (and initial Long Term Monitoring Program) allowed the conclusion to be reached (and further verified) that the behavior of the fractured bedrock could be characterized as a blocky porous medium, a major finding which significantly simplifies site analysis. Further summaries of this work are provided in the Final Hydrologic Site Investigation Report[2].

One specific objective of the work referenced above was to develop a method for routinely computing the estimated total yearly activity of radionuclides flowing to the Hudson River via the groundwater pathway (both directly to the river and also through the Discharge Canal). This total yearly activity is computed as the product of the groundwater flow rate and its radionuclide activity ("concentration"), as measured by analyses of groundwater samples collected from the monitoring installations, over time. The yearly total activity is then used to compute the radionuclide dose to the river.

[1] As used in this memo, "monitoring well" includes a number of different types of groundwater monitoring instrumentation including: 2" standard single monitoring well casings/screens, small diameter (1") multi-level nested well casings/screens, multi-level Waterloo installations, and stilling wells.

[2] Hydrogeologic Site Investigation Report, January 7, 2008, prepared by GZA GeoEnvironmental, Inc, on behalf of Enercon Services, Inc., for Entergy Nuclear Northeast, Indian Point Energy Center, 450 Broadway, Buchanan, NY 10511.

To routinely estimate groundwater flow (i.e., groundwater mass flux) through the Site, an analytical groundwater flow computation was formulated based on a Precipitation Mass Balance Model. This model is based on the precept that, on a long term average, the groundwater flowing through and discharging from the aquifer is equal to the watershed infiltration recharge. This mass balance approach recognizes that the only substantial source of recharge to the aquifer is areal recharge derived from precipitation.

The Precipitation Mass Balance Model was calibrated[3] to groundwater fluxes computed using a Darcy's Law Model[4] based on site-specific groundwater elevation gradients and hydraulic conductivities. As summarized above, the groundwater pressure transducers provided an integral part of the data used to develop the overall CSM, as well as the Darcy's Law Model with respect to the groundwater flux distribution, both laterally and with depth throughout the site. The calibration compared the total groundwater flux values for each of six flow zones[5] computed independently[6] using the Precipitation Mass Balance Model and the Darcy's Law Model. This calibration not only verified the reasonableness of the overall groundwater flow rates predicted by the Precipitation Mass Balance Model, but also allowed further discretization of the groundwater flow into upper and lower flow zones as well as flow volumes upgradient and downgradient of the Discharge Canal, as described more fully in the Hydrogeologic Site Investigation Report.

The initial calibration was performed using gradients derived from contours of groundwater elevation measured on June, 1 2007. As part of the initial portions of the Long Term Monitoring Program, this calibration has been evaluated quarterly to verify that seasonal changes in groundwater elevations do not materially impact the validity of the calibration. To date, quarterly groundwater elevations measured with the transducers at representative low river tides[7] have been used to verify the Precipitation Mass Balance Model for the 2nd, 3rd, and 4th quarters of 2007[8], the 1st, 2nd, 3rd and 4th quarters of 2008 and the 1st and 2nd quarters of 2009[9]. As further described in these quarterly reports[10], the Precipitation Mass Balance Model has continued to provide suitably accurate approximations of the groundwater flow values computed using the Darcy's Law Model. Therefore, given the small variability of flow over the seasons monitored to date, as well as the overall recognition that the computed doses to the river are a small fraction of the permitted amounts, GZA believes that further calibration of the Precipitation Mass Balance Model is

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[3] The process of achieving the desired degree of correspondence between the model results and observations of the physical hydrogeologic system.

[4] Both analytic modeling techniques as well as a 3-dimensional numerical model (Modflow), all based on Darcy's law for porous media, were used for the calibration of the Precipitation Mass Balance Model.

[5] See Hydrogeologic Site Investigation Report.

[6] The two models use different sets of input parameters which are not dependent or related to each other. The groundwater flow computed using the Precipitation Mass Balance Model is based on yearly precipitation amounts and the proportion of this precipitation that results in infiltration recharge to the groundwater. The Darcy's Law Model, on the other hand, is based on the measured groundwater flow gradients (as computed from groundwater elevation contours constructed from the transducer readings) and estimates of the formation hydraulic conductivity.

[7] Previous evaluations (provided in the Hydrogeologic Site Investigation Report) have shown that the shape of the groundwater contours is relatively unchanged at different times of the tidal cycle. However, the use of low tide contours provides the greatest transient gradients (larger than the average gradient) and therefore result in a computed groundwater flux from the Site that is biased high. Computation of radionuclide release rates to the river based on these data will therefore also have a high bias (i.e., they will be conservative).

[8] There was no formal 1st quarter monitoring event in 2007 given that the Long Term Monitoring Program had not yet been initiated.

[9] Transducer level data has also been collected and analyzed for Quarter 2 of 2009. While Quarter 2 technically post-dates the timeframe covered by this report, these data were included given their availability at the time of the writing of the report and also because Q2 is the last quarter for which full rounds of transducer data is to be collected.

[10] See Quarterly Reports prepared by GZA including: Final 2007 Quarterly Report dated May 1, 2008; Quarter 1 2008 Quarterly Report dated May 15, 2008; Quarter 2 and 3 2008 Quarterly Report dated February 6, 2009; and Quarter 4 2008 Quarterly Report dated September 1, 2009.

no longer warranted beyond Quarter 2, 2009. While transducer operation for further calibrations of the Precipitation Mass Balance Model are no longer recommended, a limited number of transducers should be maintained to continue to verify that the basic assumptions inherent in the model continue to remain valid. The locations and rational for these specific transducers are summarized below.

TRANSDUCER REDEPLOYMENT RECOMMENDATIONS

The primary objective of maintaining a limited number of transducers as part of the Long Term Monitoring Program is to provide ongoing confirmatory data that demonstrate substantial changes to the on-site groundwater flow field have not taken place[11], which thus supports the continuing validity of the Precipitation Mass Balance Model calibration. The most straightforward approach to demonstrate stasis would be to maintain the full complement of existing transducers, thus allowing the continued production of groundwater contours for the site. However, this level of detail is costly and is no longer considered necessary given the relatively small variability of seasonal and annual groundwater flow and the overall recognition that the computed dose to the river is only a small fraction of the permitted levels. More specifically, from a radionuclide groundwater contamination perspective, it is noted that:

- The only receptor for radionuclide releases to the groundwater is currently the Hudson River located immediately West of the power block area.
- The majority of this groundwater release to the river is concentrated within a small portion of the site just downgradient of the Unit 1 and 2 SFPs.
- The total yearly groundwater radionuclide release to the river is less than 1/100th of the allowable level.
- The primary radionuclide associated with the two operating units (Unit 2 and Unit 3) is Tritium, which is responsible for less than 1/1000th of the total current dose computed for the river. Therefore, the current Tritium release rate to the river results in approximately 1/100,000th of the allowable release level. As such, very substantial increases to the existing Tritium plume levels would have to occur to even begin to approach allowable annual release levels for tritium.
- Strontium is responsible for the majority of the current total computed dose to the river. The primary source of Strontium was leakage from Unit 1. As of the fall of 2008, the residual Unit 1 fuel has been removed and the fuel pools drained and cleaned. Therefore, the source term has been terminated and the associated total Strontium activity in the formation can only decrease with time. As such, it is hard to envision future conditions which would result in substantial increases to the Strontium levels in the groundwater plume.

[11] It is possible that material changes to the groundwater flow field could occur due to variations in the seasonal precipitation, or perhaps on a longer term basis, changes to the level of the Hudson River associated with global warming. For example, a prolonged drought could substantially reduce the groundwater mound existing to the South of the power block which prevents power block groundwater from migrating to the South towards the quarry. In addition to natural variability, changes to on-site and/or off-site operations could also impact groundwater flow fields. These anthropogenic impacts could include those from construction at or near the facility, changes to foundation drain pumping, changes to storm drains and/or site grading, infiltration of clean water from operations, installation of off-site pumping facilities, etc.

From a groundwater flow perspective, a doubling of the dose to the river (still <2% allowable) would require the groundwater flow rate to double[12]. Given that the hydraulic conductivity of the bedrock and overburden formations below the site are fixed, a generalized, big picture analysis[13] shows that a doubling of the groundwater flow rate would require the gradient to double. Assuming the river elevation remains relatively constant[14], the upgradient groundwater elevations would therefore generally have to also double[15] (to double the gradient and thus flow rate to the river). However, this condition is not plausible because such a doubling of groundwater elevations would require the groundwater to extend above the respective ground surface elevations[16]. Therefore, even a relatively insignificant doubling of the radiological dose to the river due to an increase in groundwater flux is not plausible given the required increase in groundwater elevations as well as the increased rainfall.

Given the above summarized analysis, a strong case could be made that no further transducer monitoring is required. However, it is recommended that a limited number of transducers be maintained as part of the Long Term Monitoring Program to demonstrate that substantial changes to the on-site groundwater flow field have not taken place, and thus further substantiate the continued validity of the Precipitation Mass Balance Model calibration, as well as the overall CSM[17]. Therefore, the following subsections, organized into general functional groups, provide recommendations for transducer redeployment on a long term basis. The recommended locations for long term transducer redeployment are summarized on Figure 1.

Upgradient Southern, Eastern and Northern Boundaries

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[12] This assumes that the activity levels remained constant in the groundwater after the flow rate doubled. This is unlikely to occur over any sustained length of time because it would require additional leakage from the SSCs to maintain a doubling of the source term.

[13] While the intrinsic permeability of the formation materials is essentially fixed, it is recognized that as the groundwater elevation increases, portions of the unsaturated zone become saturated and thus will then also contribute to groundwater flow. If the hydraulic conductivity of these upper portions of the bedrock/overburden is substantially higher than that of the current saturated zone, then the overall effective formation hydraulic conductivity would in fact increase. However, the borehole geophysics data does not show a substantial increase in fracturing in the vadose zone as compared to the upper portion of the saturated zone. In addition, while the overburden can be substantially more pervious than the bedrock, in the area of the Tritium and Strontium plumes, current ground surface/foundation elevations are generally consistent with or below the original bedrock elevations. Therefore, overburden thicknesses are anticipated to generally be relatively shallow or non-existent. An exception to this generalization is where backfilling around structures was completed with soil (primarily Unit 2) rather than concrete (primarily Unit 1). However, the recharge to these higher conductivity preferential flow paths is still generally limited by the bedrock groundwater flow rates. In addition, a number of these soil backfilled areas are drained by foundation drains which are independently monitored (e.g., the U1-NCD). Finally, it is further noted that even if the effective formation hydraulic conductivity were to increase substantially with an increase in groundwater elevations, to double the groundwater flow through the site on a yearly average basis would require a doubling of the rate of rainfall infiltration. Even if the annual rainfall were to double, a highly improbable event (the on-site met. station measured a maximum variation in annual rainfall of only approximately 30% over the last thirteen years), the infiltration would likely not double given the increased surface water runoff that would be expected with such a large increase in rainfall (i.e., the infiltration rate would likely not increase linearly with rainfall increases as a higher percentage would become surface runoff).

[14] It is noted that any long term changes to river level will likely be gradual and the river elevation is already very nearly equal to Mean Sea Level. Therefore, river elevations can't decrease significantly so as to reduce the required increase in upgradient groundwater elevations. In fact, in the long term, river elevations are predicted to increase based on global warming impacts.

[15] In actuality, the difference between the upgradient groundwater elevations and the river elevation would have to double, to double the gradient. However, given that the river elevation is numerically sufficiently close to zero, for all intents and purposes, a doubling of the numerical value of the upgradient elevations is sufficient.

[16] The groundwater elevations upgradient of the power block area range from approximately el. 45' to el. 55' (wells I-2, MW-65, MW-51 and MW-40). The ground surface elevations in these areas range from approximately el. 70' to el. 80'. Therefore, a doubling of the groundwater elevations would substantially exceed the ground surface elevations. This is not plausible because once the groundwater reached the ground surface, it would dissipate as surface water runoff to the storm drains, and thus be unable to increase further in elevation.

[17] As part of the further validation of the overall CSM, long term transducer data will aid in detecting anthropogenic changes such as potential impacts if off-site groundwater pumping were to be initiated proximate to the site, the quarry were drained or filled, etc.

As presented in the Hydrogeologic Site Investigation Report, groundwater flow in both the upper and lower flow zones is toward the power block area from the North, East and South, with subsequent discharge to the Hudson River to the West. A corollary to this conclusion is that there is no groundwater flow, and thus no off-Site radionuclide migration from the power block area to the North, East or South. Groundwater flow associated with infiltration from the watershed may be as deep as 350 feet, but still ultimately discharges to the river.

Groundwater elevations rise to the South from the power block area, as is consistent with the increase in topographic elevations. Farther to the South, ground surface and groundwater elevations decrease, most specifically at the quarry where groundwater elevations of approximately 15' have been recorded in LaFarge MW-2 (also refered to as LAF-002). As such, it is important to continue to demonstrate that the groundwater mound which separates the power block groundwater from the LaFarge area groundwater remains elevated. As such, transducers should remain in both **MW-40** and **MW-51**. In each of these two installations, both the shallowest and deepest transducers are required to: 1) delineate the range of vertical piezometric elevations with depth and 2) provide a level of redundancy at each location in case one transducer fails. In addition, transducers should be maintained in **MW-43** and **MW-46**. These wells are located in the Unit 3 power block just downgriadient of MW-40 and MW-51 and provide a reference to demonstrate that the gradient is toward the power block area (i.e., to the north).

Groundwater elevations also rise from the power block area to the East. **MW-65** provides an appropriate location to monitor groundwater flow from the East just prior to migration into the power block area. Again both elevations in this monitoring installation should continue to be monitored, primarily to provide a level of redundancy.

Monitoring well **I-2** located to the North of the power block area provides a suitable location to monitor the upgradient groundwater elevations in this direction. Given that a single well screen exists at this location, two transducers should be installed to provide redundancy.

Downgradient Western Boundary

From the upgradient boundaries to the South, East and North, groundwater flows into the power block area and then ultimately exits at the river to the West. Given that the river is the ultimate sink for groundwater flow, and thus the radionuclides within the groundwater, it is important to verify its elevation over time. Stilling well **HR-1** was previously installed for this purpose. It is therefore proposed that this well be maintained as part of the Long Term Monitoring Program. Once again, a second transducer should be installed in this well to provide redundancy.

While the river is the ultimate sink for groundwater flow, the Discharge Canal forms an intermediate groundwater sink on the site. Stilling well **U3-C1** was installed to monitor the Discharge Canal surface water elevation. This well should continue to be monitored and should have an additional transducer installed to provide redundancy.

Groundwater Tritium and Strontium Plumes

The two primary sources of radionuclide release to the groundwater have been the Unit 1 (Strontium) and Unit 2 (Tritium) SFPs. While Unit 3 covers a large portion of the IPEC site, the groundwater data has not shown any significant releases from this unit. Therefore, it is recommended that transducer monitoring internal to the site (i.e., between the above summarized upgradient and downgradient boundaries) be primarily focused on the area of the Unit1/2 plumes.

The historic source area of each plume would be monitored using **MW-30** (Unit 2) and **MW-53**[18] (Unit 1). Both the upper and lower monitoring elevations in these installations should be monitored to: 1) provide vertical gradient information, and 2) provide a level of transducer redundancy.

It is recommended that a location just upgradient of the Discharge Canal also be monitored for each plume. **MW-55** satisfies this criterion for both plumes given that the two plumes converge at this location as a likely result of a preferential flow path (increased bedrock fracturing) in this area. Again, it is recommended that both the upper most and lowest monitoring elevations in this installation be monitored.

Finally, the toe of each plume should also be monitored just prior to where they discharge into the river. Again, this recommendation can be satisfied by one location given the convergence of the two plumes. In this case, the upper and lower levels of **MW-67** are recommended for bedrock monitoring and the upper level of the proximate **MW-66** is recommended to monitor the overburden groundwater levels in this area.

We appreciate the opportunity to be of service to you. Should you have any questions or comments, please feel free to contact Matt or Dave at (781) 278-3805 or (860) 858-3110.

Very truly yours,
GZA GEOENVIRONMENTAL, INC.

Matthew J. Barvenik, LSP
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Date:June 14, 2010

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Date:June 14, 2010

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Consultant/Reviewer

Date:June 14, 2010

Attachments: Figure 1: Long-Term Transducer Monitoring Evaluation Map

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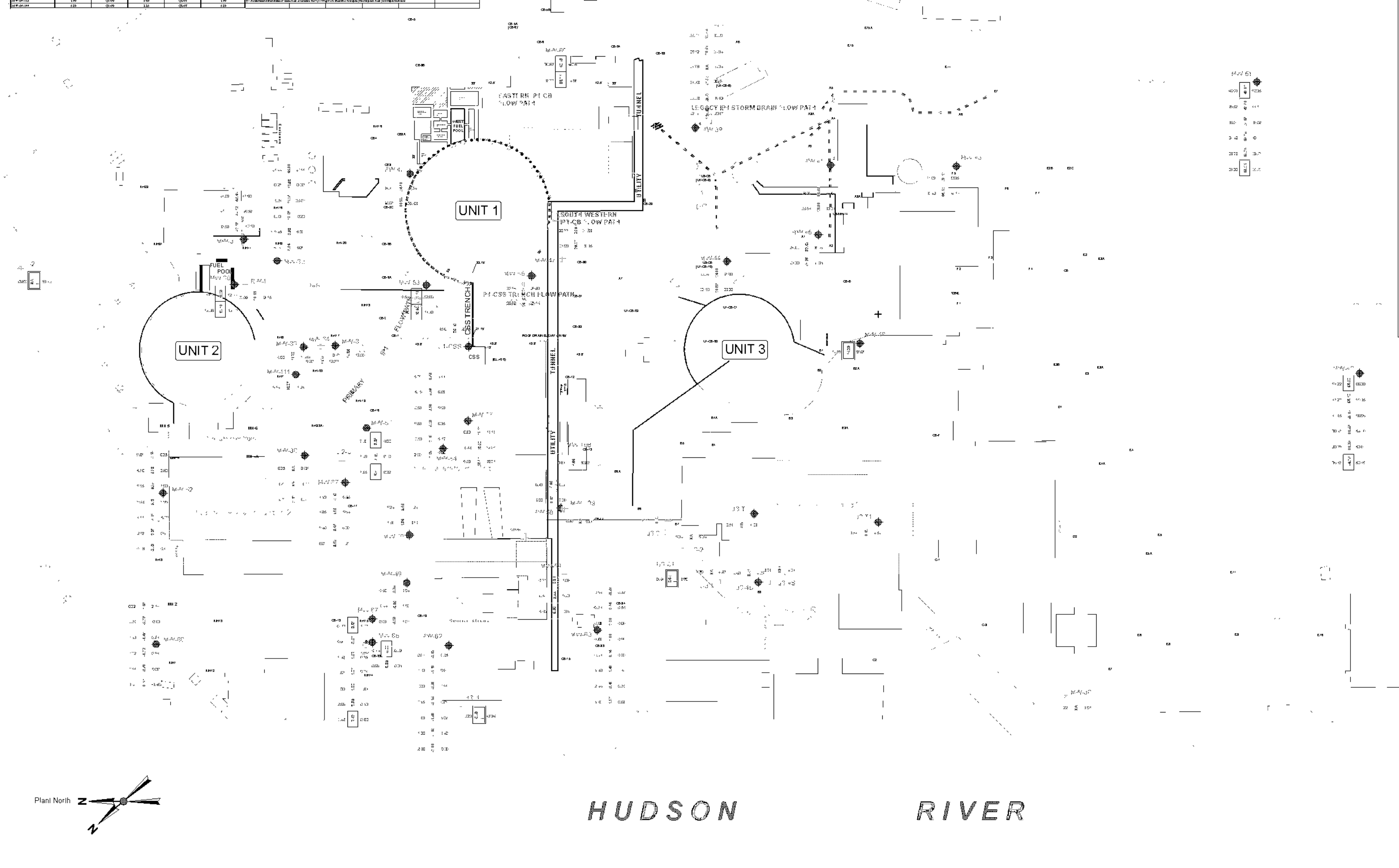
[18] MW-42 was considered as the historic source area monitoring location for Unit 1 given its closer proximity to the SFPs than MW-53. However, MW-42 is also very close to the NCD, which likely controls the groundwater elevations in MW-42 to a large extent. As such, it is judged that MW-53 would likely be more responsive to groundwater elevation variations indicative of changes at the site than would be MW-42.

LONGTERM TRANSDUCER MONITORING EVALUATION MAP



LEGEND

Monitoring Installations

- Boring / Monitoring Installation Designation
- Longterm **Radionuclide** Monitoring Installation
- Standby **Radionuclide** Monitoring Installation

Multiple Screened Intervals w/ Depth

- **Transducer** Monitored Interval
- Interval no longer monitored with **Transducer**
- Single level monitoring location with duplicate **Transducers** for redundancy*
- Maximum quarterly groundwater elevation at time of low river tide measured between Q2 2007 and Q1 2009, inclusive
- Minimum quarterly groundwater elevation at time of low river tide measured between Q2 2007 and Q1 2009, inclusive

Transducer Notes

* - For locations with multi level depth monitoring, redundancy provided by monitoring more than one depth at same location

† - Redundant transducer data not available for Q1 09 given that the transducer redeployment plan not yet implemented

Potential Future Source Locations

Probable Legacy Release SSCs

- Unit 2 Fuel Pool (All identified leaks repaired as of December 2007)
- Unit 1 West Fuel Pool (All U1-SFPs drained and inactive as of October 2008)
- Terminated Connection To Storm Drain
- Drain Exfiltration
- Inter-Structure Joint / Mud Mat
- Containment Spray Sump Pipe Trench

Activity Data

Isopleth

Bounding Activity H3[1]

Bounding Activity SR90[1]

Data Notes

1. Illustration of contaminant plume is a schematic representation only. In reality, the geologic bedrock formation is over 99% solid, crystalline rock, with the contaminated water contained only in the remaining (less than 1%) interstitial space (i.e. fractures).

General Notes

1. Base map was developed from an untitled electronic file provided by Badey & Watson Surveying and Engineering, P.C., Dated 2/3/06. CAD file name "GZA.dwg"

50 25 0 50 100 150 Feet

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LONGTERM TRANSDUCER
MONITORING EVALUATION MAP

Proj. Mgr. MJB Designed By MJB Reviewed By MJB Operator GAS	Dwg. Date	06-16-2010	Figure No. 1
	Job No.	01.001/869.92	