PATRICK
ENGINEERING

January 18, 2012

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Subject: Quarterly Groundwater Monitoring Results –Fourth Quarter 2011
Powerton Generating Station – Bypass Cleaning Basin
Water Pollution Control Permit No. 2010-EB-0664

Reference: Patrick Project No. 21153.018

To Whom It May Concern:

Patrick Engineering Inc. (Patrick) has prepared this letter report, on behalf of Midwest Generation, LLC, to provide groundwater monitoring results associated with the Powerton Generating Facility located at 13082 East Manito Road in Pekin, Illinois. Groundwater is monitored quarterly in the vicinity of the bypass cleaning basin at this facility in three monitoring wells in accordance with requirements of Illinois Environmental Protection Agency (Illinois EPA) Water Pollution Control Permit No. 2010-EB-0664.

MONITORING WELL INSTALLATION

In accordance with the permit referenced above, three monitoring wells (MW-9, MW-11, and MW-12) have been installed in the vicinity of the bypass cleaning basin. The locations of these wells were selected so that at least one of the monitoring wells (MW-09) was installed downgradient of the basin, based upon available data regarding the expected groundwater flow direction. Figure 1 shows the location of the three monitoring wells. Drilling logs and well completion reports have been included as Attachment A.

GROUNDWATER SAMPLING

Prior to collecting groundwater samples from the three wells noted above, a number of field measurements were collected from each well location, including groundwater elevation, temperature, conductivity, and pH. Groundwater elevation data is summarized in Table 1. Other field parameter data is provided in Table 2.

On December 12, 2011, groundwater samples were collected from each of the three on-site monitoring wells, by the direct use of a peristaltic pump. Each well was purged until at least three well volumes had been extracted, or until the groundwater was observed to be clear. Groundwater was pumped or bailed into a decontaminated, stainless steel container and thereafter transferred to sample containers via peristaltic pump. All groundwater samples were filtered in the field using a disposable, 0.45µm, in-line filter to allow for the analytical testing of

dissolved compounds. The samples were immediately placed on ice in a cooler and kept at a temperature no higher than 4° F. The samples were transported to PDC Laboratories, an Illinois-EPA accredited analytical laboratory, in accordance with chain-of-custody procedures to maintain sample integrity.

ANALYTICAL RESULTS

The groundwater samples were analyzed for all of the inorganic compounds listed in 35 Illinois Administrative Code (IAC) 620.410(a) and 620.410(d), including radium 226/228. Analytical results (both current and historical) are summarized in Table 3. Laboratory analytical reports provided by PDC Laboratories are provided as Attachment B.

In accordance with Water Pollution Control Permit No. 2010-EB-0664, these three wells will continue to be sampled and reported on a quarterly basis for at least one year to establish a statistically valid representation of existing background conditions.

If you have any questions, please contact me at 630-795-7464.

Sincerely,

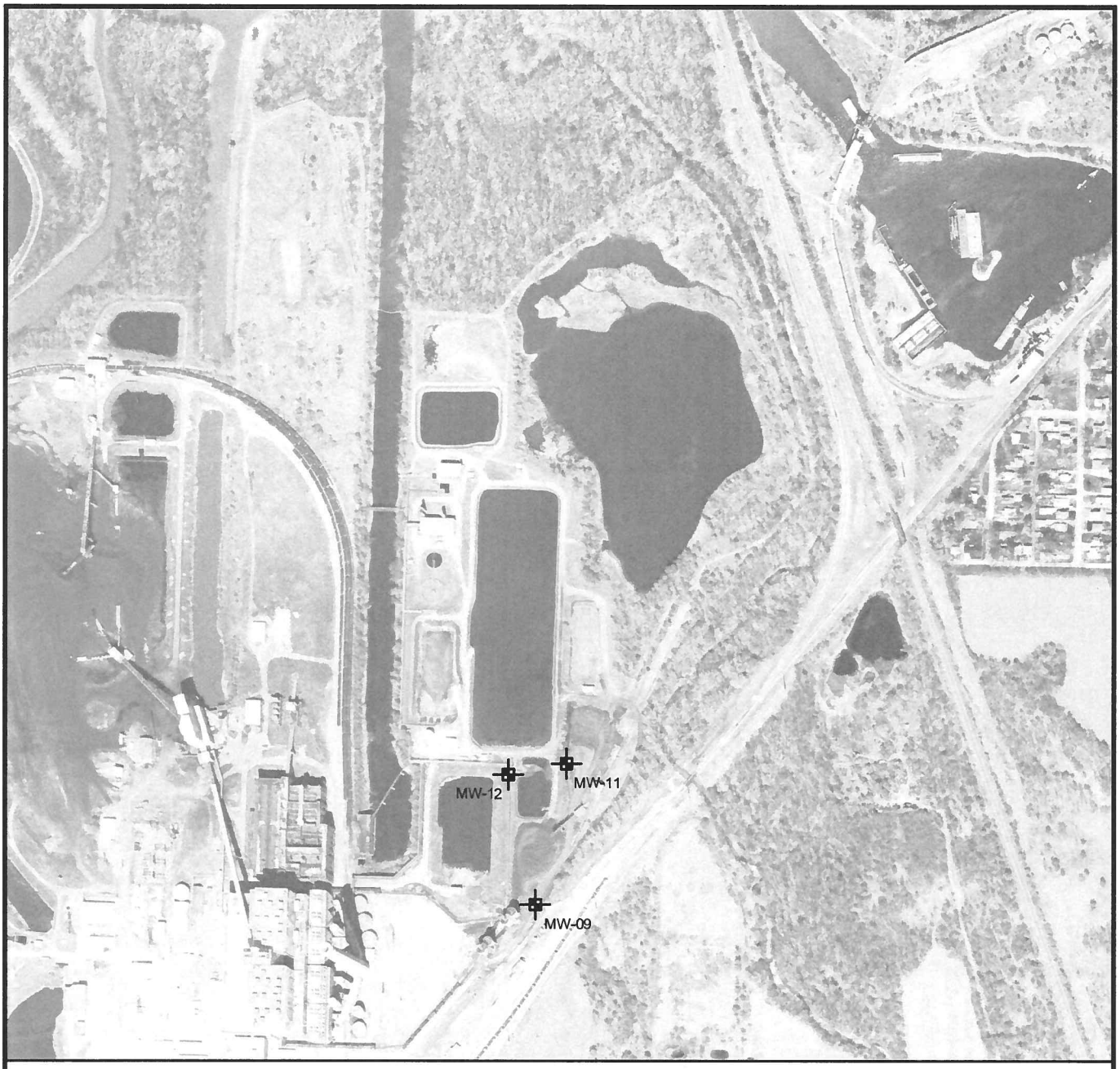
PATRICK ENGINEERING INC.

Richard M. Frendt, P.E
Senior Project Manager

RMF/DCM
Enclosures: Figure 1: Monitoring Well Location Map
Table 1: Groundwater Elevation Data
Table 2: Field Parameter Data
Table 3: Groundwater Analytical Results
Attachment A: Boring Logs/Well Completion Reports
Attachment B: Laboratory Analytical Results

FIGURE 1

MONITORING WELL LOCATION MAP



LEGEND

MW-01 Existing Monitoring Well Location

N

1" = 600'

AERIAL IMAGE SOURCE:
2005 ORTHOPHOTO TAKEN FROM THE ILLINOIS NATURAL RESOURCES CLEARINGHOUSE

Date: DEC. 2011	EXISTING MONITORING WELL LOCATION MAP Bypass Basin Map	PATRICK ENGINEERING INC.
Proj No.: 21153.018	POWERTON STATION PEKIN, ILLINOIS	4970 Varsity Drive Lisle, Illinois 60532-4101 TEL. (630) 795-7200 FAX (630) 724-1681 PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409
App. By: RMF		

MWG13-15_40048

TABLE 1

GROUNDWATER ELEVATION DATA

Table 1
BYPASS BASIN
GROUNDWATER ELEVATION DATA
Powerton Station, Pekin, Illinois
Midwest Generation
21153.018

PATRICK ENGINEERING	Groundwater Elevation Data							
Monitoring Well	**Date**	**Water Elevation (Feet)**	**Depth to Water Pre-Sampling (Feet bmp)**	**Depth to Water Post Sampling (Feet bmp)**	**Water Elevation Post Sampling (bmp)**	**Depth to Bottom of Well (Feet)**	**Ground Elevation (Feet)**	**Top of Riser Elevation (Feet)**
MW-09	2/15/2011	443.416	25.77	25.80	443.386	35.13	466.214	469.186
	6/16/2011	449.306	19.88	19.89	449.296	35.13	466.214	469.186
	9/19/2011	443.636	25.55	25.55	443.636	35.13	466.214	469.186
	12/12/2011	443.076	26.11	26.11	443.076	35.13	466.214	469.186
MW-11	2/15/2011	440.779	30.81	30.82	440.769	43.65	468.074	471.589
	6/16/2011	448.199	23.39	23.40	448.189	43.65	468.074	471.589
	9/19/2011	440.489	31.10	31.10	440.489	43.65	468.074	471.589
	12/12/2011	440.509	31.08	31.09	440.499	43.65	468.074	471.589
MW-12	2/15/2011	450.390	22.99	23.01	450.370	32.57	469.999	473.380
	6/16/2011	451.180	22.20	22.20	451.180	32.57	469.999	473.380
	9/19/2011	449.880	23.50	23.50	449.880	32.57	469.999	473.380
	12/12/2011	450.030	23.35	23.35	450.030	32.57	469.999	473.380

Notes: - Elevations are leveled from site control points per Drawing "Control Network, IL State Plane (West Zone) Powerton Station" revised 10/22/2010

-Elevations are shown in feet

bmp -below monitoring point

TABLE 2

FIELD PARAMETER DATA

Table 2
BYPASS BASIN
FIELD PARAMETER DATA
Powerton Station, Pekin, Illinois
Midwest Generation
21153.018

PATRICK ENGINEERING	Groundwater Field Paramter Data - Powerton Station				
Monitoring Well	**Date**	**Time**	**Conductance (S/cm)***	**Temperature °C**	**pH**
MW-09	2/15/2011	11:20	0.782	12.71	7.62
		11:22	0.777	12.82	7.42
		11:24	0.774	13.04	7.43
		11:26	0.771	13.21	7.36
		11:28	0.774	13.29	7.29
		11:30	0.776	13.47	7.24
MW-09	6/16/2011	13:30	0.85	16.28	7.63
		13:32	0.85	14.96	7.34
		13:34	0.84	14.78	7.24
		13:36	0.84	14.73	7.16
		13:38	0.84	14.61	7.11
		13:40	0.84	14.51	7.10
MW-09	9/19/2011	13:30	0.66	14.46	7.41
		13:32	0.66	14.38	7.35
		13:34	0.66	14.23	7.34
		13:36	0.66	14.12	7.33
		13:38	0.66	14.11	7.32
		13:40	0.66	14.08	7.32
MW-09	12/12/2011	13:14	0.66	14.11	6.53
		13:16	0.66	14.35	6.39
		13:18	0.66	14.46	6.33
		13:20	0.66	14.52	6.32
		13:22	0.66	14.52	6.3
		13:24	0.66	14.56	6.31
MW-11	2/15/2011	9:42	1.14	13.66	7.13
MW-11	6/16/2011	14:32	1.46	17.97	7.32
		14:34	1.45	17.75	7.14
		14:36	1.45	17.67	7.08
		14:38	1.44	17.66	7.04
		14:40	1.44	17.48	7.03
		14:42	1.44	17.58	7.02
MW-11	9/19/2011	16:14	0.85	14.67	7.31
MW-11	12/12/2011	15:50	0.89	13.85	6.48
MW-12	2/15/2011	10:24	1.66	13.88	7.49
		10:26	1.66	16.33	7.51
		10:28	1.66	16.44	7.51
		10:30	1.67	16.70	7.51
		10:23	1.66	16.73	7.51
		10:34	1.66	16.77	7.51
MW-12	6/16/2011	15:14	1.65	19.33	7.41
		15:16	1.65	18.94	7.28
		15:18	1.63	18.70	7.04
		15:20	1.62	18.79	6.94
		15:22	1.63	18.66	6.95
		15:24	1.63	18.77	6.98
MW-12	9/19/2011	16:48	1.35	18.02	7.71
		16:50	1.34	17.87	7.67
		16:52	1.34	17.71	7.65
		16:54	1.34	17.73	7.65
		16:56	1.34	17.75	7.66
		16:58	1.34	17.75	7.66
MW-12	12/12/2011	16:20	1.37	17.04	7.50
		16:22	1.37	17.45	7.39
		16:24	1.37	17.59	7.37
		16:26	1.37	17.65	7.38
		16:28	1.37	17.71	7.38
		16:30	1.38	17.78	7.38

Notes:
* (S/cm) - specific conductivity measured in Siemens/Centimeters
°C - degrees Celcius

TABLE 3

GROUNDWATER ANALYTICAL RESULTS

Table 3
BYPASS BASIN
GROUNDWATER ANALYTICAL RESULTS
Powerton Station, Illinois
Midwest Generation
21153.018

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-9 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)	MW-11 (mg/L)
Chemical Name		**Class I***	**12/15/10**	**2/15/11**	**9/19/11**	**6/16/11**	**12/12/11**	**12/16/10**	**2/15/11**	**9/19/11**	**6/16/11**	**12/12/11**
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	ND	0.0017	0.0012	0.0021	0.0025	0.0016	0.0019	0.0019
Barium	Metals 6020	2.0	0.038	0.042	0.03	0.038	0.038	0.17	0.11	0.11	0.18	0.11
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND	0.0028	0.0041	ND	0.0024	ND
Copper	Metals 6020	0.65	ND	ND	ND	ND	ND	0.0032	0.0032	ND	0.0043	ND
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	0.19	ND	ND	ND	0.44	0.01	0.018	0.029	ND
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.19**	**0.43**	**0.14**	**0.48**	**0.28**	**3.2**	**3.6**	**2.2**	**2.9**	**2.5**
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.001	0.011	0.0065	0.0063	0.0088	0.019	0.016	0.011	0.013	0.013
Selenium	Metals 6020	0.05	0.005	ND	0.0043	0.0017	0.0041	0.0026	0.0015	0.004	0.0018	0.0031
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	0.0082	ND	ND	ND	ND	0.012	ND	ND	ND	ND
Boron	Metals 6020	2	**2.2**	1.9	**2.5**	1.9	2.7	1.6	1.8	1.5	1.6	1.8
Sulfate	Dissolved 9038	400	110	99	130	110	110	170	160	140	210	160
Chloride	Dissolved 9251	200	25	33	30	28	30	70	66	53	120	87
Nitrate as N	Nitrogen By calc	10	2.7	3.7	3.7	5.6	2.6	0.41	0.17	0.78	0.04	1.5
Total Dissolved Solids	Dissolved 2540C	1,200	510	470	500	540	520	740	710	620	930	730
Fluoride	Dissolved 4500 FC	4	ND	0.32	0.25	0.34	ND	0.53	0.56	0.58	0.67	0.44
Radium 226 (pCi/L)	EPA 903.1	20	0.673	0.728	0.117	0.955	0.621	0.445	0.174	0.332	0.929	0.733
Radium 228 (pCi/L)	EPA 904.0	20	0.941	0.983	0.553	0.974	0.966	0.915	0.967	0.355	0.914	1.03

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
mg/L- milligrams per Liter

Table 3
BYPASS BASIN
GROUNDWATER ANALYTICAL RESULTS
Powerton Station, Illinois
Midwest Generation
21153.018

PATRICK ENGINEERING	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)	MW-12 (mg/L)
Chemical Name		Class I*	12/15/10	2/15/11	6/16/11	9/19/11	12/12/11
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.0088	0.013	0.0064	0.0087	0.0089
Barium	Metals 6020	2.0	0.089	0.11	0.091	0.085	0.09
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	0.0056	0.0044	0.0071	0.0047
Cobalt	Metals 6020	1.0	ND	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	0.0032	0.0036	0.0031
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	**5.5**	**6.3**	**5.6**	4	3.1
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	**0.32**	**0.58**	**0.26**	**0.37**	**0.25**
Mercury	Mercury 7470A	0.002	**0.0096**	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.0026	0.01	0.0072	0.0075	0.0091
Selenium	Metals 6020	0.05	ND	0.0027	ND	0.0023	0.0034
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND	ND
Boron	Metals 6020	2	1.6	1.4	1.3	1.2	1.3
Sulfate	Dissolved 9038	400	290	270	350	360	300
Chloride	Dissolved 9251	200	170	180	180	190	210
Nitrate as N	Nitrogen By calc	10	ND	ND	0.14	ND	ND
Total Dissolved Solids	Dissolved 2540C	1,200	980	1,000	1,100	970	970
Fluoride	Dissolved 4500 FC	4	0.71	0.61	0.64	0.74	0.61
Radium 226 (pCi/L)	EPA 903.1	20	0.617	0.207	0.893	0.373	0.923
Radium 228 (pCi/L)	EPA 904.0	20	0.97	0.973	0.956	0.859	0.952

Notes:
*Class I Groundwater Standards from 35 IAC Part 620
Bold values show exceedences of 35 IAC Part 620
ND-non detect
mg/L- milligrams per Liter

ATTACHMENT A

BORING LOGS / WELL COMPLETION REPORTS

MWG13-15_40056

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-9-Po** SHEET **1** OF **2**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Powerton**

LOGGED BY **MPG**
GROUND ELEVATION **466.2**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □ ○ △ LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) ✳ (1 2 3 4 5)	NOTES & TEST RESULTS
466.2	0.0		Black cinders, fine gravel, crushed rock, dry FILL				
				SS-1 1.0-2.5			
							Bentonite seal 3.0'-20.0'. Stickup protective cover installed.
				SS-2 3.5-5.0			
				SS-3 6.0-7.5			
				SS-4 8.5-10.0			
456.2	10.0		Black cinders, coarse to fine sand, brick, fine gravel, dry FILL				
				SS-5 11.0-12.5 14"R	6 12 15		qu=NT
				SS-6 13.5-15.0 18"R	5 6 7		qu=NT
				SS-7 16.0-17.5 18"R	6 9 10		qu=NT
449.2	17.0		Moist Brown clayey silt, trace fine sand, moist CL				
447.2	19.0		Light brown fine to medium sand, loose, well graded	SS-8 18.5-20.0 18"R	3 6 11		qu=NT

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **9/28/10** ENDED **9/28/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ **23.5**
▽ **21.6**
▽

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-9-Po** SHEET **2** OF **2**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Powerton**

LOGGED BY **MPG**
GROUND ELEVATION **466.2**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL–LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) * (1 2 3 4 5)	NOTES & TEST RESULTS
446.2	20.0		SW				Sand pack 20.0'-32.0'
444.6	21.6	▽		SS-9 21.0-22.5 18"R	3 3 4		
442.7	23.5	▽	Saturated	SS-10 23.5-25.0 18"R	1 3 8		Set screen (slot 0.010") 22.0'-32.0'
				SS-11 26.0-27.5 18"R	0 2 2		
			Medium dense	SS-12 28.5-30.0 18"R	2 6 13		
			Trace fine gravel	SS-13 31.0-32.5 18"R	2 5 10		
433.7	32.5		End of Boring at 32.5'				

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **9/28/10** ENDED **9/28/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ **23.5**
▼ **21.6**
▼

MWG13-15_40058

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-11-Po** SHEET **1** OF **2**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Powerton**

LOGGED BY **MPG**
GROUND ELEVATION **468.1**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □---○---△ LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) ✳ (1 2 3 4 5)	NOTES & TEST RESULTS
468.1	0.0		Cinders, gravel, sand, silt FILL				
				SS-1 1.0-2.5			
							Bentonite seal 3.0'-28.0'. Stickup protective cover installed.
				SS-2 3.5-5.0			
				SS-3 6.0-7.5			
				SS-4 8.5-10.0			
458.1	10.0		Black and brown clay, fine gravel, cinders, bricks, silt, coarse sand, dry FILL				
				SS-5 11.0-12.5 16"R	8 10 10		qu=NT
				SS-6 13.5-15.0 17"R	2 2 3		qu=2.5**tsf
452.1	16.0		Brown and gray silty clay, trace fine gravel, trace fine sand, stiff, dry CL	SS-7 16.0-17.5 18"R	1 3 4		qu=1.5**tsf
449.6	18.5		Gray clayey silt, organics, very soft, moist ML	SS-8 18.5-20.0 18"R	WOH 2 2		qu=0.5**tsf

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **9/28/10** ENDED **9/29/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ **32.5** while drilling
▼ **26.5** after 12 hours
▼ **26.5** after 48 hours

MWG13-15_40059

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-11-Po** SHEET **2** OF **2**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Powerton**

LOGGED BY **MPG**
GROUND ELEVATION **468.1**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL–LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) * (1 2 3 4 5)	NOTES & TEST RESULTS
448.1	20.0						
				SS-9 21.0-22.5 0"R	1 2 3		qu=NT
				SS-10 23.5-25.0 18"R	WOH WOH 1		qu=0.5**tsf
442.1	26.0						
441.6	26.5		▼ Dark gray silty clay, some organics, medium stiff, dry CL	SS-11 26.0-27.5 18"R	1 3 4		qu=1.5**tsf
				SS-12 28.5-30.0 18"R	3 4 6		Sand pack 28.0'-40.0' qu=2.5**tsf
				SS-13 31.0-32.5 18"R	3 4 6		Set screen (slot 0.010") 30.0'-40.0' qu=2.5**tsf
~~435.6~~	~~32.5~~		▽				
			Brown and gray coarse to fine gravel, coarse to fine sand, loose, saturated GP	SS-14 33.5-35.0 18"R	1 2 1		qu=NT
431.6	36.5		Light brown fine sand, well graded, very loose, saturated SW	SS-15 36.0-37.5 18"R	1 0 0		qu=NT
				SS-16 38.5-40.0 18"R	2 3 4		qu=NT
428.1	40.0		End of Boring at 40.0'				

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **9/28/10** ENDED **9/29/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ **32.5** while drilling
▼ **26.5** after 12 hours
▼ **26.5** after 48 hours

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-12-Po** SHEET 1 OF 2
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Powerton**

LOGGED BY **MPG**
GROUND ELEVATION **470.0**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL □ LL / Unconfined Compressive Strength (TSF) ✳	NOTES & TEST RESULTS
470.0	0.0		Black cinders, fine gravel, silty clay, dry FILL				
				SS-1 1.0-2.5			
				SS-2 3.5-5.0			Bentonite seal 3.0'-18.0'. Stickup protective cover installed.
				SS-3 6.0-7.5			
				SS-4 8.5-10.0			
460.0	10.0		Black cinders FILL				
				SS-5 11.0-12.5 18"R	17 18 11		qu=NT
				SS-6 13.5-15.0 18"R	12 20 17		qu=NT
			Seam of l ight brown coarse sand	SS-7 16.0-17.5 18"R	6 7 6		qu=NT
451.5	18.5						Sand pack 18.0'-35.0'
450.5	19.5		▼ Gray silt, little to some coarse to fine sand, trace clay, very soft, saturated	SS-8 18.5-20.0 18"R	1 5 2		qu=NT Set screen (slot 0.010") 19.0'-29.0'

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **9/29/10** ENDED **9/29/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ **20.5**
▼ **19.5**
▼

MWG13-15_40061

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-12-Po** SHEET **2** OF **2**
CLIENT **Midwest Generation**
PROJECT & NO. **21053.070**
LOCATION **Powerton**

LOGGED BY **MPG**
GROUND ELEVATION **470.0**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL–LL (10 20 30 40 50) / Unconfined Compressive Strength (TSF) ✳ (1 2 3 4 5)	NOTES & TEST RESULTS
450.0	20.0						
449.5	20.5		▽ ML				
				SS-9 21.0-22.5 18"R	1 2 1		qu=0.25**tsf
				SS-10 23.5-25.0 18"R	WOH 2 1		qu=0.5**tsf
			Trace peat				
444.0	26.0						
			Gray mottled black clayey silt, with some organics, trace peat, very soft, medium stiff, moist OH	SS-11 26.0-27.5 18"R	WOH WOH 2		qu=0.5**tsf
				SS-12 28.5-30.0 18"R	1 3 4		qu=1.75**tsf
				SS-13 31.0-32.5 18"R	2 3 3		qu=2.0**tsf
437.5	32.5						
			Dark brown and gray silty clay, trace coarse sand, trace organics, stiff to very stiff, dry CL				
				SS-14 33.5-35.0 18"R	4 6 6		qu=2.5**tsf
435.0	35.0						
			End of Boring at 35.0'				

DRILLING CONTRACTOR **Groff Testing**
DRILLING METHOD **4.25" I.D. HSA**
DRILLING EQUIPMENT **CME 550 ATV**
DRILLING STARTED **9/29/10** ENDED **9/29/10**

REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
▽ **20.5**
▼ **19.5**
▼

MWG13-15_40062

State of Illinois
Department of Public Health

WATER WELL CONSTRUCTION REPORT

Complete within 30 days of well completion and send to the appropriate Health Department

Print Form

1. Type of Well

a. **Driven Well:** Casing Diameter (in.) _____ Depth (ft.) _____

b. **Bored Well:** Casing Diameter (in.) _____ Buried Slab? _____

c. **Drilled Well:** PVC Casing Formation Packer Set at Depth of (ft.) 32

d. **Drilled Well:** Steel Casing Mechanically Driven _____

e. Hole Diameter (in.) 8.5 to (ft.) 32 ; (in.) ___ to (ft.) ___ ; (in.) ___ to (ft.) ___

f.

Type of Grout	# of bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)
Bentonite	9		3	20	

g. Well Finished within Unconsolidated Materials

h.

Kind of Gravel/Sand Pack	Grain Size/Supplier #	From (ft.)	To (ft.)
Washed quartz sand	#5	20	32

2. Well Use: Monitoring Well Disinfected? No

3. Date Well Completed: Sep 28, 2010 Driller's Estimated Well Yield (gpm): _____

4. Date Permanent Pump Installed: _____ Set at Depth (ft.): _____

5. Pump Capacity (gpm): _____

6. Pitless Adapter Model and Manufacturer: _____ Attachment to Casing: _____

7. Well Cap Type & Manufacturer: _____

8. Pressure Tank Working Cycle (gals.): _____ Captive Air? _____ 9. Pump System Disinfected: _____

10. Name of Pump Company _____

11. Pump Installer: _____ License # _____

12. _____ Date _____

Licensed Pump Installation Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 West Jefferson Street
Springfield, IL 62761

IL 482-0126
Revised 6/09

IMPORTANCE NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act-0863. Disclosure of this information is Mandatory. This form has been approved by the Forms Management Center.

13. Property Owner: Midwest Generation LLC Well # PEI-MW-09

14. Driller: _____ License # _____

15. Name of Drilling Company: Groff Testing Corporation 16. Permit Number: _____

Date Issued: _____ 17. Date Drilling Started Sep 28, 2010

18. Well Site Address: 13082 E. Manito Road, Pekin, IL 61554

19. Township Name: Cincinnati Land I.D. # _____

20. Subdivision Name: _____ Lot # _____

21. Location: a. County Tazewell b. Site Elevation 470 ft. (above msl)

c. Township: 24N Range: 5W Section: 9

d. NE Quarter of the SE Quarter of the SW Quarter

e. GPS: Lat: Degrees 40 Minutes 32 Seconds 32.3 N

Lon: Degrees 89 Minutes 40 Seconds 34.4 W

Survey use only

22. Casing and Liner Information

Diameter (in.)	Material, Joint Type	From (ft.)	To (ft.)
2	PVC, threaded	0	22

23. Is the well screened? Yes If yes

Diameter (in.)	Length (ft.)	Slot Size (in.)	From (ft.)	To (ft.)
2	10	0.01	22	32

24. Water from sand at a depth of (ft.) 19 To (ft.) 32

a. Static water level (ft.) below top of casing 21.6 which is (in.) above ground 3

b. pumping level is (ft.) _____ pumping (gpm) _____ for (hours) _____

25.

Earth Materials Passed Through	From (ft.)	To (ft.)
gravel, crushed rock, cinders	0	10
cinders, sand, brick	10	17
clayey silt	17	19
sand	19	32

(Attach 2nd page, if necessary) (If DRY HOLE, fill out log & indicate how hole was sealed)

_____ License # _____

Licensed Water Well Contractor Signature

MWG13-15_40063

State of Illinois
Department of Public Health

WATER WELL CONSTRUCTION REPORT

Complete within 30 days of well completion and send to the appropriate Health Department

Print Form

1. Type of Well

a. **Driven Well:** Casing Diameter (in.) _____ Depth (ft.) _____

b. **Bored Well:** Casing Diameter (in.) _____ Buried Slab? _____

c. **Drilled Well:** PVC Casing Formation Packer Set at Depth of (ft.) 40

d. **Drilled Well:** Steel Casing Mechanically Driven _____

e. Hole Diameter (in.) 8.5 to (ft.) 40 ; (in.) ___ to (ft.) ___ ; (in.) ___ to (ft.) ___

f.

Type of Grout	# of bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)
Bentonite	12		3	28	

g. Well Finished within Unconsolidated Materials

h.

Kind of Gravel/Sand Pack	Grain Size/Supplier #	From (ft.)	To (ft.)
Washed quartz sand	#5	28	40

2. Well Use: Monitoring Well Disinfected? No

3. Date Well Completed: Sep 28, 2010 Driller's Estimated Well Yield (gpm): _____

4. Date Permanent Pump Installed: _____ Set at Depth (ft.): _____

5. Pump Capacity (gpm): _____

6. Pitless Adapter Model and Manufacturer: _____ Attachment to Casing: _____

7. Well Cap Type & Manufacturer: _____

8. Pressure Tank Working Cycle (gals.): _____ Captive Air? _____ 9. Pump System Disinfected: _____

10. Name of Pump Company _____

11. Pump Installer: _____ License # _____

12. _____ Date _____
Licensed Pump Installation Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 West Jefferson Street
Springfield, IL 62761

IL 482-0126
Revised 6/09

IMPORTANCE NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act-0863. Disclosure of this information is Mandatory. This form has been approved by the Forms Management Center.

13. Property Owner: Midwest Generation LLC Well # PEI-MW-11

14. Driller: _____ License # _____

15. Name of Drilling Company : Groff Testing Corporation 16. Permit Number: _____

Date Issued: _____ 17. Date Drilling Started Sep 28, 2010

18. Well Site Address: 13082 E. Manito Road, Pekin, IL 61554

19. Township Name: Cincinnati Land I.D. # _____

20. Subdivision Name: _____ Lot # _____

21. Location: a. County Tazewell b. Site Elevation 470 ft. (above msl)

c. Township: 24N Range: 5W Section: 9

d. SW Quarter of the NE Quarter of the SW Quarter

e. GPS: Lat: Degrees 40 Minutes 32 Seconds 35.2 N

Lon: Degrees 89 Minutes 40 Seconds 33.2 W

Survey use only

22. Casing and Liner Information

Diameter (in.)	Material, Joint Type	From (ft.)	To (ft.)
2	PVC, threaded	0	30

23. Is the well screened? Yes If yes

Diameter (in.)	Length (ft.)	Slot Size (in.)	From (ft.)	To (ft.)
2	10	0.01	30	40

24. Water from sand and gravel at a depth of (ft.) 32.5 To (ft.) 40

a. Static water level (ft.) below top of casing 26.5 which is (in.) above ground 3

b. pumping level is (ft.) _____ pumping (gpm) _____ for (hours) _____

25.

Earth Materials Passed Through	From (ft.)	To (ft.)
gravel, sand, cinders	0	10
clay and gravel	10	16
silt and clay	16	20
organic silt	20	26
silty clay	26	32.5
sand and gravel	32.5	40

(Attach 2nd page, if necessary) (If DRY HOLE, fill out log & indicate how hole was sealed)

_____ License # _____
Licensed Water Well Contractor Signature

MWG13-15_40064

State of Illinois
Department of Public Health

WATER WELL CONSTRUCTION REPORT

Complete within 30 days of well completion and send to the appropriate Health Department

Print Form

1. Type of Well

a. Driven Well: Casing Diameter (in.) _____ Depth (ft.) _____

b. Bored Well: Casing Diameter (in.) _____ Buried Slab? _____

c. Drilled Well: PVC Casing Formation Packer Set at Depth of (ft.) 29

d. Drilled Well: Steel Casing Mechanically Driven _____

e. Hole Diameter (in.) 8.5 to (ft.) 29 ; (in.) ___ to (ft.) ___ ; (in.) ___ to (ft.) ___

f.

Type of Grout	# of bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)
Bentonite	6		3	18	

g. Well Finished within Unconsolidated Materials

h.

Kind of Gravel/Sand Pack	Grain Size/Supplier #	From (ft.)	To (ft.)
Washed quartz sand	#5	18	29

2. Well Use: Monitoring Well Disinfected? No

3. Date Well Completed: Sep 29, 2010 Driller's Estimated Well Yield (gpm): _____

4. Date Permanent Pump Installed: _____ Set at Depth (ft.): _____

5. Pump Capacity (gpm): _____

6. Pitless Adapter Model and Manufacturer: _____ Attachment to Casing: _____

7. Well Cap Type & Manufacturer: _____

8. Pressure Tank Working Cycle (gals.): _____ Captive Air? _____ 9. Pump System Disinfected: _____

10. Name of Pump Company _____

11. Pump Installer: _____ License # _____

12. _____ Date _____
Licensed Pump Installation Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 West Jefferson Street
Springfield, IL 62761

IL 482-0126
Revised 6/09

IMPORTANCE NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act-0863. Disclosure of this information is Mandatory. This form has been approved by the Forms Management Center.

13. Property Owner: Midwest Generation LLC Well # PEI-MW-12

14. Driller: _____ License # _____

15. Name of Drilling Company: Groff Testing Corporation 16. Permit Number: _____

Date Issued: _____ 17. Date Drilling Started Sep 29, 2010

18. Well Site Address: 13082 E. Manito Road, Pekin, IL 61554

19. Township Name: Cincinnati Land I.D. # _____

20. Subdivision Name: _____ Lot # _____

21. Location: a. County Tazewell b. Site Elevation 470 ft. (above msl)

c. Township: 24N Range: 5W Section: 9

d. SE Quarter of the NE Quarter of the SW Quarter

e. GPS: Lat: Degrees 40 Minutes 32 Seconds 34.2 N

Lon: Degrees 89 Minutes 40 Seconds 35.7 W

Survey use only

22. Casing and Liner Information

Diameter (in.)	Material, Joint Type	From (ft.)	To (ft.)
2	PVC, threaded	0	19

23. Is the well screened? Yes If yes

Diameter (in.)	Length (ft.)	Slot Size (in.)	From (ft.)	To (ft.)
2	10	0.01	19	29

24. Water from silt and sand at a depth of (ft.) 20 To (ft.) 26

a. Static water level (ft.) below top of casing 19.5 which is (in.) above ground 3

b. pumping level is (ft.) ___ pumping (gpm) _____ for (hours) _____

25.

Earth Materials Passed Through	From (ft.)	To (ft.)
cinders, gravel, clay	0	10
cinders	10	18.5
silt and sand	18.5	26
clayey silt	26	29

(Attach 2nd page, if necessary) (If DRY HOLE, fill out log & indicate how hole was sealed)

_____ License # _____
Licensed Water Well Contractor Signature

MWG13-15_40065

ATTACHMENT B

LABORATORY ANALYTICAL RESULTS

PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 12/13/11 8:00
Report Date: 01/17/12
Customer #: 233203
PO#: 4500073039

Laboratory Results

Sample No: **1121476-08**
Sample Description: **MW-8**

Collect Date: **12/12/11 17:15**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Soluble Metals - PIA					
Copper	10 ug/L		01/04/12 19:17	JMW	SW 6020
Iron	0.94 mg/L		12/19/11 12:04	KJP	SW 6010B
Lead	< 1.0 ug/L		01/04/12 19:17	JMW	SW 6020
Manganese	200 ug/L		01/05/12 14:04	JMW	SW 6020
Mercury	< 0.20 ug/L		01/04/12 19:17	JMW	SW 6020
Nickel	9.0 ug/L		01/04/12 19:17	JMW	SW 6020
Selenium	3.6 ug/L		01/05/12 14:04	JMW	SW 6020
Silver	< 5.0 ug/L		01/05/12 14:04	JMW	SW 6020
Thallium	< 1.0 ug/L		01/04/12 19:17	JMW	SW 6020
Zinc	< 6.0 ug/L		01/04/12 19:17	JMW	SW 6020

Sample No: **1121476-09**
Sample Description: **MW-9**

Collect Date: **12/12/11 15:25**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		12/15/11 13:45	lgtth	335.4
Solids - total dissolved solids (TDS)	520 mg/L		12/16/11 11:47	BNS	SM 2540C 18Ed
Soluble Anions - PIA					
Chloride	30 mg/L		12/13/11 16:20	JFA	EPA 300.0 R2.1
Fluoride	< 0.25 mg/L		12/13/11 15:38	JFA	EPA 300.0 R2.1
Nitrate-N	2.6 mg/L		12/13/11 16:20	JFA	EPA 300.0 R2.1
Sulfate	110 mg/L		12/13/11 16:20	JFA	EPA 300.0 R2.1
Soluble Metals - PIA					
Antimony	< 3.0 ug/L		01/04/12 19:23	JMW	SW 6020
Arsenic	1.2 ug/L		01/04/12 19:23	JMW	SW 6020
Barium	38 ug/L		01/05/12 11:04	JMW	SW 6020
Beryllium	< 1.0 ug/L		01/06/12 11:18	JMW	SW 6020
Boron	2700 ug/L		01/06/12 11:18	JMW	SW 6020
Cadmium	< 1.0 ug/L		01/05/12 14:09	JMW	SW 6020
Chromium	< 4.0 ug/L		01/04/12 19:23	JMW	SW 6020
Cobalt	< 2.0 ug/L		01/04/12 19:23	JMW	SW 6020
Copper	< 3.0 ug/L		01/04/12 19:23	JMW	SW 6020
Iron	< 0.010 mg/L		12/19/11 12:07	KJP	SW 6010B

1121476

PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 12/13/11 8:00
Report Date: 01/17/12
Customer #: 233203
PO#: 4500073039

Laboratory Results

Sample No: **1121476-09**
Sample Description: **MW-9**

Collect Date: **12/12/11 15:25**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Soluble Metals - PIA					
Lead	< 1.0 ug/L		01/04/12 19:23	JMW	SW 6020
Manganese	280 ug/L		01/05/12 14:09	JMW	SW 6020
Mercury	< 0.20 ug/L		01/04/12 19:23	JMW	SW 6020
Nickel	8.8 ug/L		01/04/12 19:23	JMW	SW 6020
Selenium	4.1 ug/L		01/05/12 14:09	JMW	SW 6020
Silver	< 5.0 ug/L		01/05/12 14:09	JMW	SW 6020
Thallium	< 1.0 ug/L		01/04/12 19:23	JMW	SW 6020
Zinc	< 6.0 ug/L		01/04/12 19:23	JMW	SW 6020

Sample No: **1121476-10**
Sample Description: **MW-10**

Collect Date: **12/12/11 14:45**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		12/15/11 13:46	lgtth	335.4
Solids - total dissolved solids (TDS)	540 mg/L		12/16/11 11:47	BNS	SM 2540C 18Ed
Soluble Anions - PIA					
Chloride	42 mg/L		12/13/11 16:49	JFA	EPA 300.0 R2.1
Fluoride	< 0.25 mg/L		12/13/11 16:35	JFA	EPA 300.0 R2.1
Nitrate-N	4.9 mg/L		12/13/11 16:49	JFA	EPA 300.0 R2.1
Sulfate	72 mg/L		12/13/11 16:49	JFA	EPA 300.0 R2.1
Soluble Metals - PIA					
Antimony	< 3.0 ug/L		01/04/12 19:29	JMW	SW 6020
Arsenic	< 1.0 ug/L		01/04/12 19:29	JMW	SW 6020
Barium	260 ug/L		01/05/12 11:07	JMW	SW 6020
Beryllium	< 1.0 ug/L		01/06/12 11:21	JMW	SW 6020
Boron	570 ug/L		01/06/12 11:21	JMW	SW 6020
Cadmium	< 1.0 ug/L		01/05/12 14:14	JMW	SW 6020
Chromium	< 4.0 ug/L		01/04/12 19:29	JMW	SW 6020
Cobalt	2.6 ug/L		01/04/12 19:29	JMW	SW 6020
Copper	4.1 ug/L		01/04/12 19:29	JMW	SW 6020
Iron	< 0.010 mg/L		12/19/11 12:10	KJP	SW 6010B
Lead	< 1.0 ug/L		01/04/12 19:29	JMW	SW 6020
Manganese	2300 ug/L		01/05/12 14:14	JMW	SW 6020

1121476

PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 12/13/11 8:00
Report Date: 01/17/12
Customer #: 233203
PO#: 4500073039

Laboratory Results

Sample No: **1121476-10**
Sample Description: **MW-10**

Collect Date: **12/12/11 14:45**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Soluble Metals - PIA					
Mercury	< 0.20 ug/L		01/04/12 19:29	JMW	SW 6020
Nickel	13 ug/L		01/04/12 19:29	JMW	SW 6020
Selenium	6.5 ug/L		01/05/12 14:14	JMW	SW 6020
Silver	< 5.0 ug/L		01/05/12 14:14	JMW	SW 6020
Thallium	< 1.0 ug/L		01/04/12 19:29	JMW	SW 6020
Zinc	< 6.0 ug/L		01/04/12 19:29	JMW	SW 6020

Sample No: **1121476-11**
Sample Description: **MW-11**

Collect Date: **12/12/11 15:50**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		12/15/11 13:47	lgtth	335.4
Solids - total dissolved solids (TDS)	730 mg/L		12/16/11 11:47	BNS	SM 2540C 18Ed
Soluble Anions - PIA					
Chloride	87 mg/L		12/13/11 17:45	JFA	EPA 300.0 R2.1
Fluoride	0.44 mg/L		12/13/11 17:03	JFA	EPA 300.0 R2.1
Nitrate-N	1.5 mg/L		12/13/11 17:03	JFA	EPA 300.0 R2.1
Sulfate	160 mg/L		12/13/11 17:45	JFA	EPA 300.0 R2.1
Soluble Metals - PIA					
Antimony	< 3.0 ug/L		01/04/12 19:35	JMW	SW 6020
Arsenic	1.9 ug/L		01/04/12 19:35	JMW	SW 6020
Barium	110 ug/L		01/05/12 11:10	JMW	SW 6020
Beryllium	< 1.0 ug/L		01/06/12 11:23	JMW	SW 6020
Boron	1800 ug/L		01/06/12 11:23	JMW	SW 6020
Cadmium	< 1.0 ug/L		01/05/12 14:19	JMW	SW 6020
Chromium	< 4.0 ug/L		01/04/12 19:35	JMW	SW 6020
Cobalt	< 2.0 ug/L		01/04/12 19:35	JMW	SW 6020
Copper	< 3.0 ug/L		01/04/12 19:35	JMW	SW 6020
Iron	< 0.010 mg/L		12/19/11 12:12	KJP	SW 6010B
Lead	< 1.0 ug/L		01/04/12 19:35	JMW	SW 6020
Manganese	2500 ug/L		01/05/12 14:19	JMW	SW 6020
Mercury	< 0.20 ug/L		01/04/12 19:35	JMW	SW 6020
Nickel	13 ug/L		01/04/12 19:35	JMW	SW 6020

1121476

PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 12/13/11 8:00
Report Date: 01/17/12
Customer #: 233203
PO#: 4500073039

Laboratory Results

Sample No: **1121476-11**
Sample Description: **MW-11**

Collect Date: **12/12/11 15:50**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Soluble Metals - PIA					
Selenium	3.1 ug/L		01/05/12 14:19	JMW	SW 6020
Silver	< 5.0 ug/L		01/05/12 14:19	JMW	SW 6020
Thallium	< 1.0 ug/L		01/04/12 19:35	JMW	SW 6020
Zinc	< 6.0 ug/L		01/04/12 19:35	JMW	SW 6020

Sample No: **1121476-12**
Sample Description: **MW-12**

Collect Date: **12/12/11 16:30**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		12/15/11 13:48	lgtth	335.4
Solids - total dissolved solids (TDS)	970 mg/L		12/16/11 11:47	BNS	SM 2540C 18Ed
Soluble Anions - PIA					
Chloride	210 mg/L		12/13/11 18:13	JFA	EPA 300.0 R2.1
Fluoride	0.61 mg/L		12/13/11 17:59	JFA	EPA 300.0 R2.1
Nitrate-N	< 0.02 mg/L		12/13/11 17:59	JFA	EPA 300.0 R2.1
Sulfate	300 mg/L		12/13/11 18:13	JFA	EPA 300.0 R2.1
Soluble Metals - PIA					
Antimony	< 3.0 ug/L		01/04/12 19:41	JMW	SW 6020
Arsenic	8.9 ug/L		01/04/12 19:41	JMW	SW 6020
Barium	90 ug/L		01/05/12 11:13	JMW	SW 6020
Beryllium	< 1.0 ug/L		01/06/12 11:26	JMW	SW 6020
Boron	1300 ug/L		01/06/12 11:26	JMW	SW 6020
Cadmium	< 1.0 ug/L		01/05/12 14:24	JMW	SW 6020
Chromium	4.7 ug/L		01/04/12 19:41	JMW	SW 6020
Cobalt	< 2.0 ug/L		01/04/12 19:41	JMW	SW 6020
Copper	3.1 ug/L		01/04/12 19:41	JMW	SW 6020
Iron	3.1 mg/L		12/19/11 12:14	KJP	SW 6010B
Lead	< 1.0 ug/L		01/04/12 19:41	JMW	SW 6020
Manganese	250 ug/L		01/05/12 14:24	JMW	SW 6020
Mercury	< 0.20 ug/L		01/04/12 19:41	JMW	SW 6020
Nickel	9.1 ug/L		01/04/12 19:41	JMW	SW 6020
Selenium	3.4 ug/L		01/05/12 14:24	JMW	SW 6020
Silver	< 5.0 ug/L		01/05/12 14:24	JMW	SW 6020

1121476

PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 12/13/11 8:00
Report Date: 01/17/12
Customer #: 233203
PO#: 4500073039

Laboratory Results

Sample No: **1121476-12**
Sample Description: **MW-12**

Collect Date: **12/12/11 16:30**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
Soluble Metals - PIA					
Thallium	< 1.0 ug/L		01/04/12 19:41	JMW	SW 6020
Zinc	< 6.0 ug/L		01/04/12 19:41	JMW	SW 6020

Sample No: **1121476-13**
Sample Description: **MW-13**

Collect Date: **12/12/11 19:35**
Matrix: **Ground Water Grab**

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		12/15/11 13:48	lgtth	335.4
Solids - total dissolved solids (TDS)	2100 mg/L		12/16/11 11:47	BNS	SM 2540C 18Ed
Soluble Anions - PIA					
Chloride	180 mg/L		12/13/11 19:09	JFA	EPA 300.0 R2.1
Fluoride	< 0.25 mg/L		12/13/11 18:27	JFA	EPA 300.0 R2.1
Nitrate-N	0.07 mg/L		12/13/11 18:27	JFA	EPA 300.0 R2.1
Sulfate	1100 mg/L		12/15/11 07:38	JFA	EPA 300.0 R2.1
Soluble Metals - PIA					
Antimony	< 3.0 ug/L		01/04/12 19:47	JMW	SW 6020
Arsenic	23 ug/L		01/04/12 19:47	JMW	SW 6020
Barium	210 ug/L		01/05/12 11:16	JMW	SW 6020
Beryllium	< 1.0 ug/L		01/06/12 11:29	JMW	SW 6020
Boron	4100 ug/L		01/06/12 11:29	JMW	SW 6020
Cadmium	< 1.0 ug/L		01/05/12 14:29	JMW	SW 6020
Chromium	5.5 ug/L		01/04/12 19:47	JMW	SW 6020
Cobalt	< 2.0 ug/L		01/04/12 19:47	JMW	SW 6020
Copper	6.6 ug/L		01/04/12 19:47	JMW	SW 6020
Iron	0.11 mg/L		12/19/11 12:16	KJP	SW 6010B
Lead	< 1.0 ug/L		01/04/12 19:47	JMW	SW 6020
Manganese	3500 ug/L		01/05/12 14:29	JMW	SW 6020
Mercury	< 0.20 ug/L		01/04/12 19:47	JMW	SW 6020
Nickel	22 ug/L		01/04/12 19:47	JMW	SW 6020
Selenium	3.6 ug/L		01/05/12 14:29	JMW	SW 6020
Silver	< 5.0 ug/L		01/05/12 14:29	JMW	SW 6020
Thallium	< 1.0 ug/L		01/04/12 19:47	JMW	SW 6020
Zinc	< 6.0 ug/L		01/04/12 19:47	JMW	SW 6020

1121476

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ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 12/13/11 8:00
Report Date: 01/17/12
Customer #: 233203
PO#: 4500073039

Laboratory Results

Notes

PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by Federal or State Governments or their agencies is not implied.

PIA PDC Laboratories - Peoria, IL
NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
UST Certification; Iowa (240)
SPM PDC Laboratories - Springfield, MO
EPA DMR-QA Program
STL PDC Laboratories - St. Louis, MO
NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS EPA Lab No. E-10389

Subcontract report attached for Rad 226/228

Janet L. Clutters

Certified by: Janet L. Clutters, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
2231 WEST ALTORFER DRIVE
PEORIA, IL 61615

PHONE # 800-752-6651
FAX # 309-692-9689

State where samples collected IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

1 CLIENT: Patrick Engineering
ADDRESS: 4985 Varsity Dr.
CITY STATE ZIP: Lisle, IL 60532
CONTACT PERSON: Dave McCoy
PROJECT NUMBER | P.O. NUMBER | MEANS SHIPPED
PHONE NUMBER | FAX NUMBER | DATE SHIPPED
SAMPLER (PLEASE PRINT): Justin Jessoane
SAMPLER'S SIGNATURE: Justin Jessoane

MATRIX TYPES:
WW-WASTEWATER
DW-DRINKING WATER
GW-GROUND WATER
WWSL-SLUDGE
NAS-SOLID
LCHT-LEACHATE
OTHER:

3 ANALYSIS REQUESTED

4 (FOR LAB USE ONLY)
LOGIN # 1121476-15
LOGGED BY: BSL
LAB PROJ. #
TEMPLATE
PROJ MGR.

2 SAMPLE DESCRIPTION AS YOU WANT ON REPORT	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	BOTTLE COUNT	Dissolved Metals	Cyanide	Cl, F, NO3, SO4 Diss	Total Diss. Solids	Radium 226/228	REMARKS
MW-1	12/12/11	1355			GW	4	X	X	X	X		
MW-2		0945										
MW-3		1020										
MW-4		1100										
MW-5		1140										
MW-6		1315										
MW-7		1235										
MW-8		1715										
MW-9		1525				5				X		
MW-10		1445				4						
MW-11		1550				5					X	
MW-12		1630				5					X	

5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
DATE RESULTS NEEDED
RUSH RESULTS VIA (PLEASE CIRCLE) FAX PHONE E-MAIL
FAX # PHONE # EMAIL ADDRESS

6 *The sample temperature will be measured upon receipt at the lab. By initialing this area you request that the lab notify you, before proceeding with analysis, if the sample temperature is outside of the range of 0.1-6.0°C. By not initialing this area you allow the lab to proceed with analytical testing regardless of the sample temperature.*

7
RELINQUISHED BY: (SIGNATURE) — DATE 12/13/11 TIME 0830
RECEIVED BY: (SIGNATURE) — DATE 12/13/11 TIME 0830
RELINQUISHED BY: (SIGNATURE) — DATE TIME
RECEIVED BY: (SIGNATURE) — DATE TIME
RELINQUISHED BY: (SIGNATURE) — DATE TIME
RECEIVED AT LAB BY: (SIGNATURE) — DATE 12/13/11 TIME 0800

8 COMMENTS: (FOR LAB USE ONLY)
SAMPLE TEMPERATURE UPON RECEIPT 4 °C
CHILL PROCESS STARTED PRIOR TO RECEIPT (Y) OR N
SAMPLE(S) RECEIVED ON ICE (Y) OR N
PROPER BOTTLES RECEIVED IN GOOD CONDITION (Y) OR N
BOTTLES F LLED WITH ADEQUATE VOLUME (Y) OR N
SAMPLES RECEIVED WITHIN HOLD TIME(S) (Y) OR N
(EXCLUDES TYPICAL FIELD PARAMETERS)
DATE AND TIME TAKEN FROM SAMPLE BOTTLE

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.

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Greensburg, PA 15601
(724)850-5600

January 17, 2012

Ms. Janet Clutters
PDC Laboratories
2231 W. Altorfer Drive
Peoria, IL 61615

RE: Project: 1121476
Pace Project No.: 3059493

Dear Ms. Clutters:
Enclosed are the analytical results for sample(s) received by the laboratory on December 16, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins for
Carin Ferris
carin.ferris@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: 1121476
Pace Project No.: 3059493

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Virginia VELAP (Cert # 460198)
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE SUMMARY

Project: 1121476
Pace Project No.: 3059493

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3059493001	**1121476-09**	Water	12/12/11 15:25	12/16/11 10:00
3059493002	**1121476-11**	Water	12/12/11 15:50	12/16/11 10:00
3059493003	**1121476-12**	Water	12/12/11 16:30	12/16/11 10:00
3059493004	**1121476-13**	Water	12/12/11 19:35	12/16/11 10:00
3059493005	**1121476-14**	Water	12/12/11 18:40	12/16/11 10:00
3059493006	**1121476-15**	Water	12/12/11 17:55	12/16/11 10:00

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SAMPLE ANALYTE COUNT

Project: 1121476
Pace Project No.: 3059493

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3059493001	**1121476-09**	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3059493002	**1121476-11**	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3059493003	**1121476-12**	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3059493004	**1121476-13**	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3059493005	**1121476-14**	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3059493006	**1121476-15**	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA

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PROJECT NARRATIVE

Project: 1121476
Pace Project No.: 3059493

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: PDC Laboratories, Inc.
Date: January 17, 2012

General Information:
6 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 1121476
Pace Project No.: 3059493

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: PDC Laboratories, Inc.
Date: January 17, 2012

General Information:
6 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 1121476
Pace Project No.: 3059493

Sample: 1121476-09 **Lab ID: 3059493001** Collected: 12/12/11 15:25 Received: 12/16/11 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.422 ± 0.445 (0.621)**	pCi/L	01/10/12 13:28	13982-63-3	
Radium-228	EPA 904.0	**0.889 ± 0.528 (0.966)**	pCi/L	01/05/12 11:59	15262-20-1	

Sample: 1121476-11 **Lab ID: 3059493002** Collected: 12/12/11 15:50 Received: 12/16/11 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.309 (0.733)**	pCi/L	01/10/12 13:57	13982-63-3	
Radium-228	EPA 904.0	**1.09 ± 0.597 (1.03)**	pCi/L	01/09/12 17:41	15262-20-1	

Sample: 1121476-12 **Lab ID: 3059493003** Collected: 12/12/11 16:30 Received: 12/16/11 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.857 ± 0.691 (0.923)**	pCi/L	01/10/12 13:57	13982-63-3	
Radium-228	EPA 904.0	**1.08 ± 0.556 (0.952)**	pCi/L	01/09/12 17:26	15262-20-1	

Sample: 1121476-13 **Lab ID: 3059493004** Collected: 12/12/11 19:35 Received: 12/16/11 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.059 ± 0.454 (0.955)**	pCi/L	01/10/12 13:57	13982-63-3	
Radium-228	EPA 904.0	**0.968 ± 0.565 (1.01)**	pCi/L	01/05/12 12:14	15262-20-1	

Sample: 1121476-14 **Lab ID: 3059493005** Collected: 12/12/11 18:40 Received: 12/16/11 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.365 ± 0.550 (0.857)**	pCi/L	01/10/12 14:27	13982-63-3	
Radium-228	EPA 904.0	**1.80 ± 0.672 (0.985)**	pCi/L	01/09/12 17:26	15262-20-1	

Sample: 1121476-15 **Lab ID: 3059493006** Collected: 12/12/11 17:55 Received: 12/16/11 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.452 (0.979)**	pCi/L	01/10/12 14:13	13982-63-3	
Radium-228	EPA 904.0	**0.378 ± 0.445 (0.937)**	pCi/L	01/05/12 12:01	15262-20-1	

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: 1121476
Pace Project No.: 3059493

QC Batch: RADC/10566 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3059493001, 3059493002, 3059493003, 3059493004, 3059493005, 3059493006

METHOD BLANK: 382088 Matrix: Water
Associated Lab Samples: 3059493001, 3059493002, 3059493003, 3059493004, 3059493005, 3059493006

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	0.0269 ± 0.463 (0.831)	pCi/L	01/10/12 11:50	

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Greensburg, PA 15601
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QUALITY CONTROL DATA

Project: 1121476
Pace Project No.: 3059493

QC Batch: RADC/10567 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3059493001, 3059493002, 3059493003, 3059493004, 3059493005, 3059493006

METHOD BLANK: 382089 Matrix: Water
Associated Lab Samples: 3059493001, 3059493002, 3059493003, 3059493004, 3059493005, 3059493006

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.951 ± 0.546 (0.979)	pCi/L	01/05/12 12:00	

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Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 1121476
Pace Project No.: 3059493

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

SUBCONTRACT ORDER

PDC Laboratories, Inc.

1121476

12/14/2011

PDC Laboratories, Inc.
2231 W. Altorfer Drive
Peoria, IL 61615
Project Manager: Janet L. Clutters
jclutters@pdclab.com Phone: 309-683-1743

3059493

PACE Analytical - Greensburg
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
Phone :(724) 850-5600

Sample Origin (State) IL

PO# L38872

Analysis	Due	Expires	Comments
Sample ID: 1121476-09	**Ground Water**		**Sampled: 12/12/11 15:25** 001
Rad 226 228	12/23/11 16:00	06/09/12 15:25	
Sample ID: 1121476-11	**Ground Water**		**Sampled: 12/12/11 15:50** 002
Rad 226 228	12/23/11 16:00	06/09/12 15:50	
Sample ID: 1121476-12	**Ground Water**		**Sampled: 12/12/11 16:30** 003
Rad 226 228	12/23/11 16:00	06/09/12 16:30	
Sample ID: 1121476-13	**Ground Water**		**Sampled: 12/12/11 19:35** 004
Rad 226 228	12/23/11 16:00	06/09/12 19:35	
Sample ID: 1121476-14	**Ground Water**		**Sampled: 12/12/11 18:40** 005
Rad 226 228	12/23/11 16:00	06/09/12 18:40	
Sample ID: 1121476-15	**Ground Water**		**Sampled: 12/12/11 17:55** 006
Rad 226 228	12/23/11 16:00	06/09/12 17:55	

Relinquished By	Date/Time	Received By	Date/Time
Alex R. Clutters	12-14-11 15:35	K Hill	12-16-11 1000
Relinquished By	Date/Time	Received By	Date/Time

Sample Temperature Upon Receipt 4.7 C
Sample(s) Received on Ice Y or (N)
Proper Bottles Received in Good Condition (Y) or N
Bottles Filled with Adequate Volume (Y) or N
Samples Received Within Hold Time (Y) or N
Date/Time Taken From Sample Bottle (Y) or N

YH

Sample Condition Upon Receipt

Pace Analytical

Client Name: PDC lab

Project # 30594493

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 231794215004 93

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used 3 (5) 6 Type of Ice: Wet Blue (None) ☐ Samples on ice, cooling process has begun

Cooler Temperature 8.7 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: YH 12-16-11

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☒No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☐Yes ☒No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	13. 9ml added to all bottles 1100 12-16-11 ph < 2
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☒No ☐N/A	Initial when completed YH Lot # of added preservative CF-11-017-10
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Carrie Ferris **Date:** 12/19/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003-4 23Feb2010

PDC Laboratories, Inc.
P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689

ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
Powerton Station
13082 E Manito Rd
Pekin, IL 61554-8587

Attn: Mark Kelly

Date Received: 15-Feb-11
Date Reported: 01-Apr-11

Sample No: 11022668-1 Collect Date: 15-Feb-11 11:35
Client Id: JANUARY 2011 Site: MW-9 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Chloride, Dissolved		33	mg/l	17-Feb-11 2:34	lgjfa
Fluoride, Dissolved		0.32	mg/l	17-Feb-11 2:17	lgjfa
Nitrate as N, Diss.		3.7	mg/l	17-Feb-11 2:34	lgjfa
Sulfate, Dissolved		99	mg/l	17-Feb-11 2:34	lgjfa
SM (18) 2540C					
Solids, Total Dissolved		470	mg/l	21-Feb-11 12:23	asb
SM 4500 CN C/SW9012A					
Cyanide, Total	<	0.005	mg/l	23-Feb-11 11:18	lgtth
SW-846 6010B R2.0					
Iron, Dissolved		190	ug/l	24-Feb-11 15:00	JMW
SW-846 6020					
Antimony, Dissolved	<	3	ug/l	22-Feb-11 9:17	JMW
Arsenic, Dissolved	<	1	ug/l	21-Feb-11 16:15	JMW
Barium, Dissolved		42	ug/l	21-Feb-11 16:15	JMW
Beryllium, Dissolved	<	1	ug/l	22-Feb-11 9:17	JMW
Boron, Dissolved		1900	ug/l	21-Feb-11 16:15	JMW
Cadmium, Dissolved	<	1	ug/l	21-Feb-11 16:15	JMW
Chromium, Dissolved	<	4	ug/l	21-Feb-11 16:15	JMW
Cobalt, Dissolved	<	2	ug/l	22-Feb-11 9:17	JMW
Copper, Dissolved	<	3	ug/l	22-Feb-11 9:17	JMW
Lead, Dissolved	<	1	ug/l	21-Feb-11 16:15	JMW
Manganese, Dissolved		430	ug/l	21-Feb-11 16:15	JMW
Mercury, Dissolved	<	0.2	ug/l	21-Feb-11 16:15	JMW
Nickel, Dissolved		11	ug/l	21-Feb-11 16:15	JMW
Selenium, Dissolved	<	1	ug/l	21-Feb-11 16:15	JMW
Silver, Dissolved	<	5	ug/l	22-Feb-11 9:17	JMW
Thallium, Dissolved	<	1	ug/l	22-Feb-11 9:17	JMW
Zinc, Dissolved	<	6	ug/l	21-Feb-11 16:15	JMW

Sample No: 11022668-2 Collect Date: 15-Feb-11 9:45
Client Id: JANUARY 2011 Site: MW-11 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Chloride, Dissolved		66	mg/l	17-Feb-11 3:10	lgjfa
Fluoride, Dissolved		0.56	mg/l	17-Feb-11 2:52	lgjfa
Nitrate as N, Diss.		0.17	mg/l	17-Feb-11 2:52	lgjfa

Radium 226/228 subcontracted - Report attached

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ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
Powerton Station
13082 E Manito Rd
Pekin, IL 61554-8587
Attn: Mark Kelly

Date Received: 15-Feb-11
Date Reported: 01-Apr-11

Sample No: 11022668-2 Collect Date: 15-Feb-11 9:45
Client Id: JANUARY 2011 Site: MW-11 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Sulfate, Dissolved		160	mg/l	17-Feb-11 3:10	lgjfa
SM (18) 2540C					
Solids, Total Dissolved		710	mg/l	21-Feb-11 12:24	asb
SM 4500 CN C/SW9012A					
Cyanide, Total	<	0.005	mg/l	25-Feb-11 10:33	lgtth
SW-846 6010B R2.0					
Iron, Dissolved		10	ug/l	24-Feb-11 15:00	JMW
SW-846 6020					
Antimony, Dissolved	<	3	ug/l	22-Feb-11 9:22	JMW
Arsenic, Dissolved		2.5	ug/l	21-Feb-11 16:20	JMW
Barium, Dissolved		110	ug/l	21-Feb-11 16:20	JMW
Beryllium, Dissolved	<	1	ug/l	22-Feb-11 9:22	JMW
Boron, Dissolved		1800	ug/l	21-Feb-11 16:20	JMW
Cadmium, Dissolved	<	1	ug/l	21-Feb-11 16:20	JMW
Chromium, Dissolved	<	4	ug/l	21-Feb-11 16:20	JMW
Cobalt, Dissolved		4.1	ug/l	22-Feb-11 9:22	JMW
Copper, Dissolved		3.2	ug/l	22-Feb-11 9:22	JMW
Lead, Dissolved	<	1	ug/l	21-Feb-11 16:20	JMW
Manganese, Dissolved		3600	ug/l	21-Feb-11 16:20	JMW
Mercury, Dissolved	<	0.2	ug/l	21-Feb-11 16:20	JMW
Nickel, Dissolved		16	ug/l	21-Feb-11 16:20	JMW
Selenium, Dissolved		1.5	ug/l	21-Feb-11 16:20	JMW
Silver, Dissolved	<	5	ug/l	22-Feb-11 9:22	JMW
Thallium, Dissolved	<	1	ug/l	22-Feb-11 9:22	JMW
Zinc, Dissolved	<	6	ug/l	21-Feb-11 16:20	JMW

Sample No: 11022668-3 Collect Date: 15-Feb-11 10:40
Client Id: JANUARY 2011 Site: MW-12 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Chloride, Dissolved		180	mg/l	17-Feb-11 3:45	lgjfa
Fluoride, Dissolved		0.61	mg/l	17-Feb-11 3:27	lgjfa
Nitrate as N, Diss.	<	0.02	mg/l	17-Feb-11 3:27	lgjfa
Sulfate, Dissolved		270	mg/l	02-Mar-11 5:29	lgjfa
SM (18) 2540C					
Solids, Total Dissolved		1000	mg/l	21-Feb-11 12:24	asb

Radium 226/228 subcontracted - Report attached

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Midwest Generation - Powerton Facility
Powerton Station
13082 E Manito Rd
Pekin, IL 61554-8587

Attn: Mark Kelly

Date Received: 15-Feb-11
Date Reported: 01-Apr-11

Sample No: 11022668-3 Collect Date: 15-Feb-11 10:40
Client Id: JANUARY 2011 Site: MW-12 Locator: GRAB

		Result	Units	Date / Time	Analyst
SM 4500 CN C/SW9012A					
Cyanide, Total	<	0.005	mg/l	23-Feb-11 11:20	lgtth
SW-846 6010B R2.0					
Iron, Dissolved		6300	ug/l	24-Feb-11 15:00	JMW
SW-846 6020					
Antimony, Dissolved	<	3	ug/l	22-Feb-11 9:28	JMW
Arsenic, Dissolved		13	ug/l	21-Feb-11 16:25	JMW
Barium, Dissolved		110	ug/l	21-Feb-11 16:25	JMW
Beryllium, Dissolved	<	1	ug/l	22-Feb-11 9:28	JMW
Boron, Dissolved		1400	ug/l	21-Feb-11 16:25	JMW
Cadmium, Dissolved	<	1	ug/l	21-Feb-11 16:25	JMW
Chromium, Dissolved		5.6	ug/l	21-Feb-11 16:25	JMW
Cobalt, Dissolved	<	2	ug/l	22-Feb-11 9:28	JMW
Copper, Dissolved	<	3	ug/l	22-Feb-11 9:28	JMW
Lead, Dissolved	<	1	ug/l	21-Feb-11 16:25	JMW
Manganese, Dissolved		580	ug/l	21-Feb-11 16:25	JMW
Mercury, Dissolved	<	0.2	ug/l	21-Feb-11 16:25	JMW
Nickel, Dissolved		10	ug/l	21-Feb-11 16:25	JMW
Selenium, Dissolved		2.7	ug/l	21-Feb-11 16:25	JMW
Silver, Dissolved	<	5	ug/l	22-Feb-11 9:28	JMW
Thallium, Dissolved	<	1	ug/l	22-Feb-11 9:28	JMW
Zinc, Dissolved	<	6	ug/l	21-Feb-11 16:25	JMW

Sample No: 11022668-4 Collect Date: 15-Feb-11 12:15
Client Id: JANUARY 2011 Site: MW-13 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Chloride, Dissolved		120	mg/l	16-Feb-11 17:33	lgjfa
Fluoride, Dissolved		0.29	mg/l	16-Feb-11 17:14	lgjfa
Nitrate as N, Diss.		1.3	mg/l	16-Feb-11 17:14	lgjfa
Sulfate, Dissolved		770	mg/l	02-Mar-11 5:49	lgjfa
SM (18) 2540C					
Solids, Total Dissolved		1600	mg/l	21-Feb-11 12:24	asb
SM 4500 CN C/SW9012A					
Cyanide, Total	<	0.005	mg/l	23-Feb-11 12:35	lgtth
SW-846 6010B R2.0					
Iron, Dissolved		52	ug/l	24-Feb-11 15:00	JMW

Radium 226/228 subcontracted - Report attached

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Midwest Generation - Powerton Facility
Powerton Station
13082 E Manito Rd
Pekin, IL 61554-8587
Attn: Mark Kelly

Date Received: 15-Feb-11
Date Reported: 01-Apr-11

Sample No: 11022668-4 Collect Date: 15-Feb-11 12:15
Client Id: JANUARY 2011 Site: MW-13 Locator: GRAB

		Result	Units	Date / Time	Analyst
SW-846 6020					
Antimony, Dissolved	<	3	ug/l	22-Feb-11 9:50	JMW
Arsenic, Dissolved		6.9	ug/l	21-Feb-11 16:30	JMW
Barium, Dissolved		52	ug/l	21-Feb-11 16:30	JMW
Beryllium, Dissolved	<	1	ug/l	22-Feb-11 9:50	JMW
Boron, Dissolved		3100	ug/l	21-Feb-11 16:30	JMW
Cadmium, Dissolved	<	1	ug/l	21-Feb-11 16:30	JMW
Chromium, Dissolved		4.2	ug/l	21-Feb-11 16:30	JMW
Cobalt, Dissolved		2.6	ug/l	22-Feb-11 9:50	JMW
Copper, Dissolved		3.7	ug/l	22-Feb-11 9:50	JMW
Lead, Dissolved	<	1	ug/l	21-Feb-11 16:30	JMW
Manganese, Dissolved		3800	ug/l	21-Feb-11 16:30	JMW
Mercury, Dissolved	<	0.2	ug/l	21-Feb-11 16:30	JMW
Nickel, Dissolved		23	ug/l	21-Feb-11 16:30	JMW
Selenium, Dissolved		4.6	ug/l	21-Feb-11 16:30	JMW
Silver, Dissolved	<	5	ug/l	22-Feb-11 9:50	JMW
Thallium, Dissolved	<	1	ug/l	22-Feb-11 9:50	JMW
Zinc, Dissolved	<	6	ug/l	21-Feb-11 16:30	JMW

Sample No: 11022668-5 Collect Date: 15-Feb-11 13:20
Client Id: JANUARY 2011 Site: MW-14 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Chloride, Dissolved		160	mg/l	16-Feb-11 18:51	lgjfa
Fluoride, Dissolved		1.6	mg/l	16-Feb-11 18:31	lgjfa
Nitrate as N, Diss.	<	0.02	mg/l	16-Feb-11 18:31	lgjfa
Sulfate, Dissolved		820	mg/l	02-Mar-11 6:08	lgjfa
SM (18) 2540C					
Solids, Total Dissolved		1700	mg/l	21-Feb-11 12:24	asb
SM 4500 CN C/SW9012A					
Cyanide, Total	<	0.005	mg/l	23-Feb-11 11:25	lgtth
SW-846 6010B R2.0					
Iron, Dissolved		940	ug/l	24-Feb-11 15:00	JMW
SW-846 6020					
Antimony, Dissolved	<	3	ug/l	22-Feb-11 10:11	JMW
Arsenic, Dissolved		19	ug/l	21-Feb-11 17:11	JMW
Barium, Dissolved		34	ug/l	21-Feb-11 17:11	JMW

Radium 226/228 subcontracted - Report attached

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ACCREDITED IN ACCORDANCE WITH nelac

Midwest Generation - Powerton Facility
Powerton Station
13082 E Manito Rd
Pekin, IL 61554-8587
Attn: Mark Kelly

Date Received: 15-Feb-11
Date Reported: 01-Apr-11

Sample No: 11022668-5 Collect Date: 15-Feb-11 13:20
Client Id: JANUARY 2011 Site: MW-14 Locator: GRAB

		Result	Units	Date / Time	Analyst
SW-846 6020					
Beryllium, Dissolved	<	1	ug/l	22-Feb-11 10:11	JMW
Boron, Dissolved		1900	ug/l	21-Feb-11 17:11	JMW
Cadmium, Dissolved	<	1	ug/l	21-Feb-11 17:11	JMW
Chromium, Dissolved		4.6	ug/l	21-Feb-11 17:11	JMW
Cobalt, Dissolved	<	2	ug/l	22-Feb-11 10:11	JMW
Copper, Dissolved		3.5	ug/l	22-Feb-11 10:11	JMW
Lead, Dissolved	<	1	ug/l	21-Feb-11 17:11	JMW
Manganese, Dissolved		810	ug/l	21-Feb-11 17:11	JMW
Mercury, Dissolved	<	0.2	ug/l	21-Feb-11 17:11	JMW
Nickel, Dissolved		15	ug/l	21-Feb-11 17:11	JMW
Selenium, Dissolved		1.5	ug/l	21-Feb-11 17:11	JMW
Silver, Dissolved	<	5	ug/l	22-Feb-11 10:11	JMW
Thallium, Dissolved		1.8	ug/l	22-Feb-11 10:11	JMW
Zinc, Dissolved	<	6	ug/l	21-Feb-11 17:11	JMW

Sample No: 11022668-6 Collect Date: 15-Feb-11 13:05
Client Id: JANUARY 2011 Site: MW-15 Locator: GRAB

		Result	Units	Date / Time	Analyst
EPA 300.0 R2.1					
Chloride, Dissolved		190	mg/l	16-Feb-11 19:10	lgjfa
Fluoride, Dissolved		0.75	mg/l	16-Feb-11 19:10	lgjfa
Nitrate as N, Diss.		0.086	mg/l	16-Feb-11 19:10	lgjfa
Sulfate, Dissolved		220	mg/l	02-Mar-11 6:28	lgjfa
SM (18) 2540C					
Solids, Total Dissolved		1000	mg/l	21-Feb-11 12:25	asb
SM 4500 CN C/SW9012A					
Cyanide, Total	<	0.005	mg/l	23-Feb-11 11:26	lgtth
SW-846 6010B R2.0					
Iron, Dissolved		2400	ug/l	24-Feb-11 15:00	JMW
SW-846 6020					
Antimony, Dissolved	<	3	ug/l	22-Feb-11 10:16	JMW
Arsenic, Dissolved		9.2	ug/l	21-Feb-11 17:16	JMW
Barium, Dissolved		52	ug/l	21-Feb-11 17:16	JMW
Beryllium, Dissolved	<	1	ug/l	22-Feb-11 10:16	JMW
Boron, Dissolved		1400	ug/l	21-Feb-11 17:16	JMW
Cadmium, Dissolved	<	1	ug/l	21-Feb-11 17:16	JMW

Radium 226/228 subcontracted - Report attached

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Midwest Generation - Powerton Facility
Powerton Station
13082 E Manito Rd
Pekin, IL 61554-8587
Attn: Mark Kelly

Date Received: 15-Feb-11
Date Reported: 01-Apr-11

Sample No: 11022668-6 Collect Date: 15-Feb-11 13:05
Client Id: JANUARY 2011 Site: MW-15 Locator: GRAB

		Result	Units	Date / Time	Analyst
SW-846 6020					
Chromium, Dissolved		6.1	ug/l	21-Feb-11 17:16	JMW
Cobalt, Dissolved	<	2	ug/l	22-Feb-11 10:16	JMW
Copper, Dissolved	<	3	ug/l	22-Feb-11 10:16	JMW
Lead, Dissolved	<	1	ug/l	21-Feb-11 17:16	JMW
Manganese, Dissolved		420	ug/l	21-Feb-11 17:16	JMW
Mercury, Dissolved	<	0.2	ug/l	21-Feb-11 17:16	JMW
Nickel, Dissolved		11	ug/l	21-Feb-11 17:16	JMW
Selenium, Dissolved		7.9	ug/l	21-Feb-11 17:16	JMW
Silver, Dissolved	<	5	ug/l	22-Feb-11 10:16	JMW
Thallium, Dissolved	<	1	ug/l	22-Feb-11 10:16	JMW
Zinc, Dissolved	<	6	ug/l	21-Feb-11 17:16	JMW

PDC Laboratories participates in the following laboratory accreditation/certification and proficiency programs. Endorsement by the Federal or State Government or their agencies is not implied.

NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
State of Illinois Bacteriological Analysis in Drinking Water Certified Lab Registry No. 17533
Drinking Water Certifications: Indiana (C-IL-04); Kansas (E-10338); Missouri (00870); Wisconsin (998294430)
Wastewater Certifications: Arkansas; Iowa (240); Kansas (E-10338); Wisconsin (998294430)
Hazardous/Solid Waste Certifications: Arkansas; Kansas (E-10338); Wisconsin (998294430)
UST Certification: Iowa (240)

Certified by: Elaine Kaufmann
Elaine Kaufmann, Project Manager

Radium 226/228 subcontracted - Report attached

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

March 09, 2011

Ms. Elaine Kaufmann
PDC Laboratories
2231 W. Altorfer Drive
Peoria, IL 61615

RE: Project: 11022668
Pace Project No.: 3041909

Dear Ms. Kaufmann:
Enclosed are the analytical results for sample(s) received by the laboratory on February 21, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carin A. Ferris

Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures

cc: Erin Lane, PDC Laboratories, Inc.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 11022668
Pace Project No.: 3041909

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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SAMPLE SUMMARY

Project: 11022668
Pace Project No.: 3041909

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3041909001	**11022668-1**	Water	02/15/11 11:35	02/21/11 09:00
3041909002	**11022668-2**	Water	02/15/11 09:45	02/21/11 09:00
3041909003	**11022668-3**	Water	02/15/11 10:40	02/21/11 09:00
3041909004	**11022668-4**	Water	02/15/11 12:15	02/21/11 09:00
3041909005	**11022668-5**	Water	02/15/11 13:20	02/21/11 09:00
3041909006	**11022668-6**	Water	02/15/11 13:05	02/21/11 09:00

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 11022668
Pace Project No.: 3041909

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3041909001	**11022668-1**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA
3041909002	**11022668-2**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA
3041909003	**11022668-3**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA
3041909004	**11022668-4**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA
3041909005	**11022668-5**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA
3041909006	**11022668-6**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA

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PROJECT NARRATIVE

Project: 11022668
Pace Project No.: 3041909

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: PDC Laboratories, Inc.
Date: March 09, 2011

General Information:
6 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: 11022668
Pace Project No.: 3041909

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: PDC Laboratories, Inc.
Date: March 09, 2011

General Information:
6 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 11022668
Pace Project No.: 3041909

Sample: 11022668-1 **Lab ID: 3041909001** Collected: 02/15/11 11:35 Received: 02/21/11 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.303 ± 0.432 (0.728)**	pCi/L	03/08/11 13:31	13982-63-3	
Radium-228	EPA 904.0	**0.187 ± 0.427 (0.983)**	pCi/L	03/08/11 12:05	15262-20-1	

Sample: 11022668-2 **Lab ID: 3041909002** Collected: 02/15/11 09:45 Received: 02/21/11 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.515 ± 0.369 (0.174)**	pCi/L	03/08/11 13:31	13982-63-3	
Radium-228	EPA 904.0	**0.561 ± 0.477 (0.967)**	pCi/L	03/08/11 12:04	15262-20-1	

Sample: 11022668-3 **Lab ID: 3041909003** Collected: 02/15/11 10:40 Received: 02/21/11 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.229 ± 0.262 (0.207)**	pCi/L	03/08/11 13:44	13982-63-3	
Radium-228	EPA 904.0	**1.28 ± 0.608 (0.973)**	pCi/L	03/08/11 14:30	15262-20-1	

Sample: 11022668-4 **Lab ID: 3041909004** Collected: 02/15/11 12:15 Received: 02/21/11 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0608 ± 0.120 (0.165)**	pCi/L	03/08/11 13:44	13982-63-3	
Radium-228	EPA 904.0	**0.385 ± 0.451 (0.966)**	pCi/L	03/08/11 14:31	15262-20-1	

Sample: 11022668-5 **Lab ID: 3041909005** Collected: 02/15/11 13:20 Received: 02/21/11 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.422 ± 0.322 (0.163)**	pCi/L	03/08/11 13:44	13982-63-3	
Radium-228	EPA 904.0	**0.119 ± 0.410 (0.960)**	pCi/L	03/08/11 14:27	15262-20-1	

Sample: 11022668-6 **Lab ID: 3041909006** Collected: 02/15/11 13:05 Received: 02/21/11 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.321 ± 0.288 (0.174)**	pCi/L	03/08/11 13:58	13982-63-3	
Radium-228	EPA 904.0	**0.783 ± 0.511 (0.968)**	pCi/L	03/08/11 14:29	15262-20-1	

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QUALITY CONTROL DATA

Project: 11022668
Pace Project No.: 3041909

QC Batch: RADC/7580 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3041909001, 3041909002, 3041909003, 3041909004, 3041909005, 3041909006

METHOD BLANK: 270430 Matrix: Water
Associated Lab Samples: 3041909001, 3041909002, 3041909003, 3041909004, 3041909005, 3041909006

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	0.205 ± 0.302 (0.503)	pCi/L	03/08/11 12:43	

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QUALITY CONTROL DATA

Project: 11022668
Pace Project No.: 3041909

QC Batch: RADC/7587 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3041909001, 3041909002

METHOD BLANK: 270447 Matrix: Water
Associated Lab Samples: 3041909001, 3041909002

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.340 ± 0.445 (0.972)	pCi/L	03/08/11 12:03	

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QUALITY CONTROL DATA

Project: 11022668
Pace Project No.: 3041909

QC Batch: RADC/7588 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3041909003, 3041909004, 3041909005, 3041909006

METHOD BLANK: 270449 Matrix: Water
Associated Lab Samples: 3041909003, 3041909004, 3041909005, 3041909006

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.467 ± 0.460 (0.958)	pCi/L	03/08/11 14:30	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 11022668
Pace Project No.: 3041909

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

PDC Laboratories
2231 W. Altorfer Drive
Peoria, IL 61615
Phone: 309-692-9688
Fax: 309-692-9689

~~304/909~~

Sub-Contracted Chain of Custody Record

304/909

Means Shipped: Fed Ex

Date Shipped: 02/17/11

Contact: Elaine Kaufmann

PO #: L38433

Sample #		Collect Date	Matrix	# Container	RADIUM 226/228
11022668-1	001	FEB-15-11 11:35	GW	1	1
11022668-2	002	FEB-15-11 09:45	GW	1	1
11022668-3	003	FEB-15-11 10:40	GW	1	1
11022668-4	004	FEB-15-11 12:15	GW	1	1
11022668-5	005	FEB-15-11 13:20	GW	1	1
11022668-6	006	FEB-15-11 13:05	GW	1	1

Turn-Around Time Requested (circle): (NORMAL) RUSH Date Results Need: _____

Relinquished By (Signature)	Date-Time	Received by (Signature)	Date-Time
Allen R. Hogan	02-17-11 09:23	Katie Whalen	2/21/11 0900
Relinquished By (Signature)	Date-Time	Received by (Signature)	Date-Time

MWG13-15_40103

MK

Sample Condition Upon Receipt

Pace Analytical

Client Name: PDC

Project # 3041909 ~~3041907~~ MK

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 961242323794 2 1S000303

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other Styro Pranks

Thermometer Used 3 5 Type of Ice: Wet Blue (None) ☐ Samples on ice, cooling process has begun

Cooler Temperature N/A Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: MK 2/21/11

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	☒Yes	☐No	☐N/A
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A
Sampler Name & Signature on COC:	☐Yes	☒No	☐N/A
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A
Sufficient Volume:	☒Yes	☐No	☐N/A
Correct Containers Used:	☒Yes	☐No	☐N/A
-Pace Containers Used:	☐Yes	☒No	☐N/A
Containers Intact:	☒Yes	☐No	☐N/A
Filtered volume received for Dissolved tests	☐Yes	☐No	☒N/A
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: NW	☒Yes	☐No	☐N/A
All containers needing preservation have been checked.	☒Yes	☐No	☐N/A
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes	☐No	☐N/A
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes	☒No	
Samples checked for dechlorination:	☐Yes	☐No	☒N/A
Headspace in VOA Vials (>6mm):	☐Yes	☐No	☒N/A
Trip Blank Present:	☐Yes	☐No	☒N/A
Trip Blank Custody Seals Present	☐Yes	☐No	☒N/A
Pace Trip Blank Lot # (if purchased):			

13. pH<2 all samples

Initial when completed MK | Lot # of added preservative

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Chris Ferris **Date:** 2/22/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)