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Facilities & Maintenance Services
Carrier Parkway
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Building TR-7
Syracuse, New York 13221

April 11, 2012

Dan Hayes
Environmental Engineer 1
New York State Department of
Environmental Conservation
Division of Water
Region 7
615 Erie Boulevard West
Syracuse, NY 13204-2400



RE: Response to NYSDEC Comments
2011 PCB Pollutant Minimization Plan (PMP) Annual Report
SPDES Permit No. NY0001163

Dear Mr. Hayes:

We have reviewed the Department's March 22, 2012, letter regarding Carrier's 2011 Annual PMP Report. Attached is our response to your comments on the PMP program. Carrier has been working with the Department for many years to address environmental concerns and much data has been collected. In addition, work plans are currently under review by the Department that will broaden our understanding of site conditions and support work performed under the PMP.

We look forward to working with you and please call if you have questions.

Sincerely,

David Francisco
Manager, Facilities and Maintenance Services
Carrier Corporation

Enclosure: Response to Comments document — April 13, 2012

cc: William E. Penn (UTC)

Response to NYSDEC Comments Made on March 22, 2012
RE: 2011 Annual PMP Report, February 1, 2012

NYSDEC Comment #1: *As discussed in Section 3 and shown in Table 3-5, Carrier analyzed for PCBs in outfall 001 and in various manhole locations in the outfall 001 drainage area using both EPA Method 608 and the Modified Green Bay method. However, several samples in the outfall 001 drainage area were only analyzed using EPA Method 608. This is a violation of the SPDES permit conditions for the PMP. The PMP requires that periodic monitoring designed to quantify, and, over time, track the reduction of PCBs, must be done using EPA Method 1668. The Department requests that the manholes where samples were analyzed using only Method 608 (manholes 5, 6, 7A, 310 and 312) be resampled by April 16, 2012, with the analysis run with a congener specific analysis method. Carrier may continue to use the Modified Green Bay method for PCB analysis in lieu of using EPA Method 1668. The sample analysis must be submitted to the Department as an addendum to the 2011 annual report.*

Response #1: Manholes 6, 310, and 312 were analyzed using both Method 608 and the Green Bay Method. The method column heading in Table 3-3 was partially cut-off, and did not have the Green Bay Method clearly labeled. A column heading has been added. Please discard page 12 of the report and replace it with the attached corrected page.

With regard to manholes MH-5 and MH-7A being analyzed for PCBs using only USEPA Method 608: as indicated in Section 3.1, Page 9 of the report, *"The samples that were not analyzed using the Green Bay Method were ones obtained in one of the initial wide-reaching efforts by Carrier to determine potential sources of occasional PCB detections in Outfall 001 discharges (MH-5, MH-6, MH-7A, MH-310, and MH-312). These samples were analyzed using USEPA Method 608. Of these sampled manholes, MH-6, MH-310, and MH-312 had PCB detections, and were sampled in the fourth quarter. Both USEPA Method 608 and the Green Bay Method were used for comparative analysis of these samples."* Carrier voluntarily collects samples onsite as part of its continuous efforts to better understand site conditions. Routine congener analysis of collected samples is not part of Carrier's analytical protocol. Because MH-5 and MH-7A were part of a voluntary sampling effort to determine where potential PCB sources might exist and were not part of Carrier's PMP program at the time of sampling, the samples were not analyzed using the Green Bay Method.

Later in Section 3.1, Carrier states, *"Additional samples at other locations may be obtained by Carrier to gather general site information on PCBs. Initially, PCB analysis using Method 608 only will be requested from the laboratory. If the sample location is ultimately included as part of Carrier's routine PMP monitoring schedule, subsequent samples will be analyzed using the Green Bay Method as well."*

For the foregoing reasons, Carrier does not believe that "a violation of the SPDES permit conditions for the PMP" has occurred, nor does Carrier believe that the permit requires Carrier to resample manholes 5, 6, 7A, 310 and 312 *"by April 16, 2012, with the analysis run with a congener specific analysis method."* Please confirm that the Department is in agreement with this position.

NYSDEC Comment #2: *The SPDES permit requires that quarterly analysis for PCBs be conducted in key locations in the collection system. During 2012, Table 3-1 states*

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that sampling in the 002 drainage area will be done at the influent to the PCB treatment system. Please identify other locations in the outfall 002 collection system where PCB analysis will be conducted. The Department notes that, at a minimum, the influent to the three ponds should be part of the quarterly monitoring program. Please amend Table 3-1 to reflect the additional monitoring locations, and resubmit it to the Department by April 16, 2012.

Response #2: Section 5.B.2 of Carrier's SPDES permit requires "semi-annual monitoring of potential PCB sources except during the first year which shall be quarterly." The influent sample locations to Ponds #1, #2, and #3 proposed by NYSDEC do not represent "potential PCB sources."

While a potential PCB source — namely the Transformer Yard area — still exists in Drainage Basin 002, Carrier has implemented a remedy to address PCBs in Outfall 002 storm water discharges as summarized below and in the PMP Annual Report:

During large storm events that produce overflows, Outfall 002 receives storm water runoff from Drainage Basin 002. It has an associated pump station (PS-2) that collects and transfers dry weather flow (infiltrating groundwater) and storm water to a PCB treatment system in the storm water treatment plant (SWTP) building northeast of Parking Lot R. Treated storm water from the PCB treatment system is routed to the VOC treatment system and ultimately discharges to Sanders Creek via Outfall 01A. Flow to PS-2 is regulated by a system of piping, storm water retention ponds, and flow control structures located on the south, middle, and northern portions of Drainage Basin 002. The storm water management system in Drainage Basin 002 is designed to capture and transfer to the PCB treatment system runoff from storms up to and including the 25-yr, 24-hr storm event.

Additionally, Carrier has submitted to the NYSDEC Division of Remediation, two work plans that will further investigate potential PCB source areas. The first is a work plan (revision 1) submitted in November 2011, to investigate the Transformer Yard Area storm line near MH-116A. The second is a work plan (revision 2) submitted on April 10, 2012, to determine the presence PCBs in bedding material at and near at select manhole areas in Basin 002. Both work plans are currently under review by NYSDEC. ← look for that

To summarize, Carrier has implemented a remedy that prevents PCB-containing storm water discharges above the SPDES permitted MDL of 0.065 µg/L and Carrier is continuing the investigation activities planned in Basin 002. Carrier respectfully requests that it be allowed to complete the investigation activities proposed in the two aforementioned work plans before including additional monitoring locations relative to Table 3-1. Carrier will reevaluate the Department's request once investigation activities described in the work plans are completed.

NYSDEC Comment #3: PCBs appear to be prevalent throughout the site. Therefore, as part of the PCB PMP, the Department requires that Carrier's PCB PMP be modified to include quarterly

PPCB sampling of the on-site groundwater monitoring wells. PCB analysis must be done using either EPA Method 1668 or the Modified Green Bay method. Please submit your proposed sampling schedule, including a map that shows the location of the monitoring wells, to this office by April 2, 2012.

Response #3: PCBs have been detected throughout the site, but their occurrence is generally limited to sediments storm water sewer piping, not site soils and groundwater. Analytical protocol on storm water samples collected as part of the PMP sampling program in 2010 and 2011 routinely filtered any sample that detected PCBs. In the majority of samples, PCBs were not detected in filtered samples. Although two filtered samples had PCB detections, it is not necessarily indicative of dissolved phase PCBs, and it is possible that PCBs are attached to the smaller particles that pass through the 0.45 micron filter.

The attached table summarizes the historic PCB analysis of groundwater samples obtained from site groundwater monitoring wells (Figure 1 – Monitoring Well Network). A summary of sampling findings is listed below:

- In 1985, five groundwater monitoring wells (MW-1, MW-2, MW-3S, MW-3D, and MW-4) were sampled — PCBs were not detected in any sample.
- From 1994 to 2001, five groundwater monitoring wells (MW-1, MW-3S, MW-3D, MW-5, and MW-6 [MW-2 and MW-4 were abandoned earlier]) were sampled semi-annually — PCBs were not detected in any sample.
- In 2010, five groundwater monitoring wells (MW-5, MW-12, MW-14, MW-17, and MW-18) were sampled — PCBs were not detected in any sample. Note that MW-17 and MW-18 are installed in the bedding material of Outfalls 002 and 001, respectively.
- PCBs were detected in three of eight groundwater samples obtained from temporary wells installed as part of the Building TR-1 Sub-Slab Investigation of 2011. PCBs were not detected in temporary wells downgradient of these detections and therefore the areal extent has been defined to be a limited area. Additionally, analytical protocol required any sample with a PCB detection to be filtered and reanalyzed. PCBs were not detected in any of the filtered samples, indicating that PCB migration is through particle transport, not through dissolved phase transport.

While PCBs may be present in storm sewer piping (the storm water of which is treated at the PCB WTP), there is no indication that they are migrating into groundwater. As mentioned above, Carrier has submitted to NYSDEC, two work plans that will further investigate potential PCB source areas.

The proposed investigation activities outlined in the work plans will provide useful groundwater information that can be used to determine if routine groundwater sampling would be beneficial in making future decisions with regard to PCB mitigation onsite. We respectfully request that Carrier be allowed to complete the investigation activities proposed in the two work plans discussed in this

document before changing the sampling schedule.

NYSDEC General Comment: *The goal of a PCB PMP is to reduce PCB effluent levels in pursuit of the water quality based effluent limit of 0.01 ng/l for total PCBs. The Department believes that the above items bring Carrier closer to this goal.*

Response to General Comment: Through its continued treatment of Basin 002 storm water and planned site investigations, Carrier is taking actions that will bring it closer to the WQBEL goal of 0.01 ng/L for Total PCBs.

Table 3-3 PMP Quarterly Monitoring Data Summary 2011 – Permitted Outfalls (all results in ug/l)										
Carrier Corporation, Syracuse, New York										
Sample Period:	Jan-Feb-Mar 2011 1 st Quarter			Apr-May-Jun 2011 2 nd Quarter			Jul-Aug-Sep 2011 3 rd Quarter			Oct-Nov-Dec 2011 4 th Quarter
Method:	Green Bay Method	USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)		Green Bay Method	USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)		Green Bay Method	USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)		Green Bay Method
Analysis:		Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered
Outfall 002	1.44	1.3	0.54	0.976	0.76	<0.065	0.932	NS	NS	NS
Outfall 001	0.0445	0.0714	<0.065	0.0967	0.18	0.259	0.382	0.0319	<0.065	<0.065
Outfall 01A	0.0188	<0.065	<0.065	0.233	0.125	<0.065	0.259	0.0281	<0.065	<0.065

Notes:
 NS – not analyzed
 NA – not analyzed
 NA – not analyzed due to contamination interference (i.e., power outages, safety concerns, access issues)
 Current Permit – Outfall 01A – 0.3 ug/l, no permit limits at 001 and 002
 Outfalls are not analyzed quarterly

Table 3-4 PMP Semi-Annual Monitoring Data Summary 2011 – Potential PCB Sources in Drainage Basin 002 (all results in ug/l)									
Carrier Corporation, Syracuse, New York									
Jan - Jun 2011									
Sample Period:		USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)			USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)			Green Bay Method	
Method:	Green Bay Method	Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered	Discolored
HH-704	NS	NS	NS	NS	NS	NS	NS	NS	NS
HH-116	NS	NS	NS	NS	NS	NS	NS	NS	NS
HH-109	NS	NS	NS	NS	NS	NS	NS	NS	NS
HH-116A	0.11	0.24	0.24	NS	NS	NS	NS	NS	NS
HH-126	0.37	<0.065	0.07	NS	NS	NS	NS	NS	NS
HH-138	NS	NS	NS	NS	NS	NS	NS	NS	NS
HH-177	NS	NS	NS	NS	NS	NS	NS	NS	NS
HH-277	0.106	<0.065	0.13	NS	NS	NS	NS	NS	NS

Notes:
 NS – not analyzed
 NA – not analyzed

PMPs sampled semi-annually, except for 18 year of newly identified potential sources, which is also sampled quarterly. PMP sampling in 002 was discontinued when Carrier established control of Drainage Basin 002 storm water flows.

Table 3-5 PMP Quarterly Monitoring Data Summary 2011 – Potential PCB Sources in Drainage Basin 002 (all results in ug/l)									
Carrier Corporation, Syracuse, New York									
Oct-Nov-Dec 2011 4 th Quarter									
Sample Period:		USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)			USEPA 608A 1254 (K = 21 ug/l) 1260 (K = 2.7 ug/l)			Green Bay Method	
Method:	Green Bay Method	Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered	Discolored	Unfiltered	Discolored
HH-704	0.0441	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-116	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-109	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-116A	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-126	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-138	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-177	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS
HH-277	NS	<0.065	NS	<0.065	NS	<0.065	NS	<0.065	NS

Notes:

*Multiple sampling events occurred at same location during the 4th quarter.

NS – not analyzed

NA – not analyzed

PMPs sampled semi-annually, except for 18 year of newly identified potential sources - sampled quarterly.

** NS – not detected above MCL of 7.53 ug/l (0.0753 ug/l)

PMPs proposed for quarterly monitoring include HH-5, HH-26, HH-30, HH-32, and HH-33. Subject to change.

Sampled on 9-10-11 as part of wide-reaching effort to narrow focus of PMP & Green Bay Analysis.

Sampled on 9-29-11 as part of wide-reaching effort to narrow focus of PMP sampling. Samples sent to Accutest Labs - does not have 1660A Green Bay capability.

Sampled on 10-12-11 8 samples

Sampled on 11-11-11 3 samples

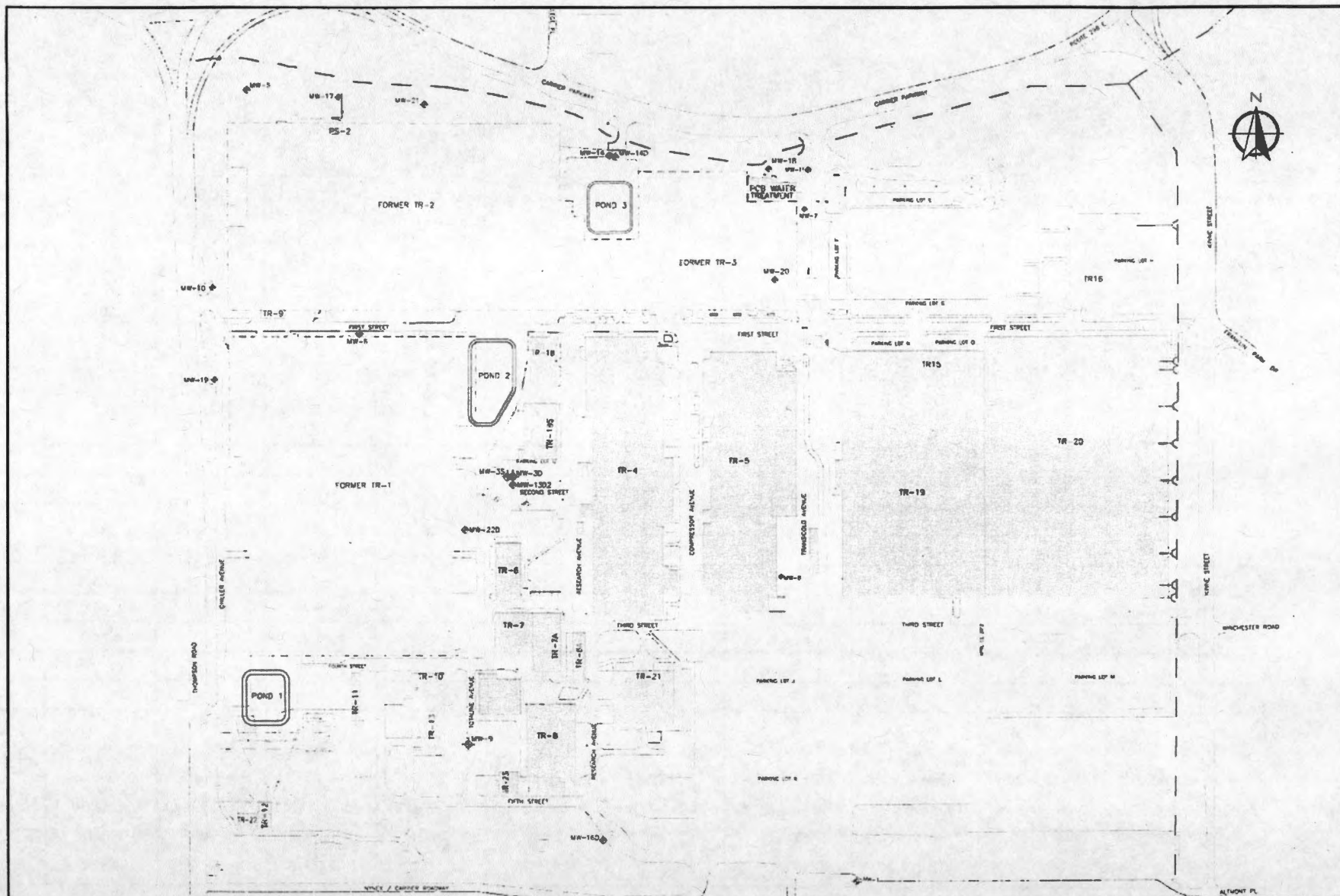
Sampled on 11-15-11 1 sample

Discontinued analysis on 10-085 ug/l

Discontinued analysis on 10-085 ug/l

Green Bay Analysis

Green Bay Analysis



NOTES:

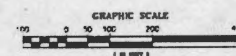
ELEVATIONS REFERRED TO CITY OF SYRACUSE DATUM
ADD 362.00 FEET TO OBTAIN USGS DATUM OF 1929
BENCHMARKS (NOT SHOWN)
BM 164 (ELEV.=42.68)
IRON BOLT AT NORTHEAST CORNER OF CONCRETE SLAB,
APPROX. 80 FEET NORTH AND APPROX. 30 FEET EAST
OF THE SOUTHEAST CORNER OF BUILDING TR-4
BM 500 (ELEV.=44.87)
CHISELED CROSS ON EAST NUT OF POSITION INDICATION
VALVE, APPROX. 75 FEET NORTHWEST OF THE
SOUTHWEST CORNER OF BUILDING TR-7 AND APPROX
90 FEET NORTHEAST OF THE SOUTHEAST CORNER OF
BUILDING TR-1.

MONITORING WELL IDENTIFICATION KEY

FORMER WELL IDENTIFICATION	NEW WELL IDENTIFICATION
MW-99-01	MW-10
MW-99-02	MW-11
MW-99-03	MW-12
MW-99-04	MW-13D
MW-00-5S	MW-14
MW-00-5D	MW-14D
MW-00-06	MW-150
MW-00-BG	MW-160

LEGEND

- BUILDING
- ANNUAL STEWIDE MONITORING WELL
- ABANDONED WELLS - INSTALLED BY DAMES AND MOORE
- MONITORING WELL (NOT ROUTINELY SAMPLED)



SOURCE
P HANDEL & ASSOCIATES
SURVEYORS, P.C.
LIVERPOOL, NEW YORK
(716) 270-0071

FIGURE 1
MONITORING WELL NETWORK AT FACILITY
CARRER FACILITY THOMPSON ROAD
SYRACUSE, NEW YORK

REQUESTED BY M.H.
DRAWN BY: W.M.
DWG DATE: APRIL 03, 2012
DWG NO.: 12036R01

ENSAFE
CREATIVE THINKING
CAPTIVE SOLUTIONS
(605) 558-7962
WWW.ENSAFE.COM

New York after Data

\\f:\stings\Temporary Internet Files\Content.Outlook\XJ2AJLA2\[Historic PCB Groundwater Data Summary.xlsx]EnSafe - Analytical Results

[illegible][illegible]

[illegible]

12/31/1985	12/31/1985	12/31/1985	12/31/1985	12/31/1985
MW-1	MW-2	MW-3D	MW-3S	MW-4
—	—	—	—	—
—	—	—	—	—
groundwater	groundwater	groundwater	groundwater	groundwater
water	water	water	water	water
<0.4	<0.5	<0.4	<0.4	<4
D26	D27	D28	D29	D30

From report table. "Detection limit higher than in other samples due to interferences in the sample."

From lab analysis report - Galson Technical Services, explanation of entry not included in report

	2/2/2011 CDTW3	2/2/2011 CDTW4	2/2/2011 CDTW4	2/3/2011 CDTW5	2/3/2011 CDTW5	2/2/2011 CDTW6	2/2/2011 CDTW6	2/2/2011 CDTW7	2/3/2011 CDTW8	2/2/2011 I2-D12TW	2/3/2011 GE-1ATW	2/3/2011 GE-3ATW	2/3/2011 SSD2TW
1	TR1GCDTW3 JA67447-10	TR1GCDTW4 JA67447-11	TR1GCDTW4 JA67447-11F	TR1GCDTW5 JA67600-1	TR1GCDTW5 JA67600-1F	TR1GCDTW6 JA67447-12	TR1GCDTW6 JA67447-12F	TR1GCDTW7 JA67447-13	TR1GCDTW8 JA67600-2	TR1GI2D12TW JA67447-14	TR1GGE1ATW JA67447-16	TR1GGE3ATW JA67447-17	TR1GSSD2TW JA67600-3
	N WG	N WG	N WG	N WG	N WG	N WG	N WG	N WG	N WG	N WG	N WG	N WG	N WG
	0.57 U	0.57 U	0.57 U	0.5 U	0.5 U	0.72 U	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U
	0.57 U	0.57 U	0.57 U	0.5 U	0.5 U	0.72 U	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U
	0.57 U	0.57 U	0.57 U	0.5 U	0.5 U	0.72 U	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U
	0.57 U	0.57 U	0.57 U	0.5 U	0.5 U	0.72 U	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U
	0.57 U	0.57 U	0.57 U	0.5 U	0.5 U	0.72 U	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U
	0.57 U	85.3	0.57 U	2.5	0.5 U	0.8	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U
	0.57 U	0.57 U	0.57 U	0.5 U	0.5 U	0.72 U	0.83 U	0.71 U	0.56 U	0.54 U	0.5 U	0.57 U	0.5 U