



GROWING AREA EM
Location - Pleasant River, Addison, Cape Split, Columbia Falls and Harrington

ANNUAL REVIEW for 2010

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APPROVAL

Division Director:

A handwritten signature in blue ink, appearing to read "Kohl Kanwit", written over a light blue rectangular background.

Kohl Kanwit

3/29/12

Print name

signature

Date: _____



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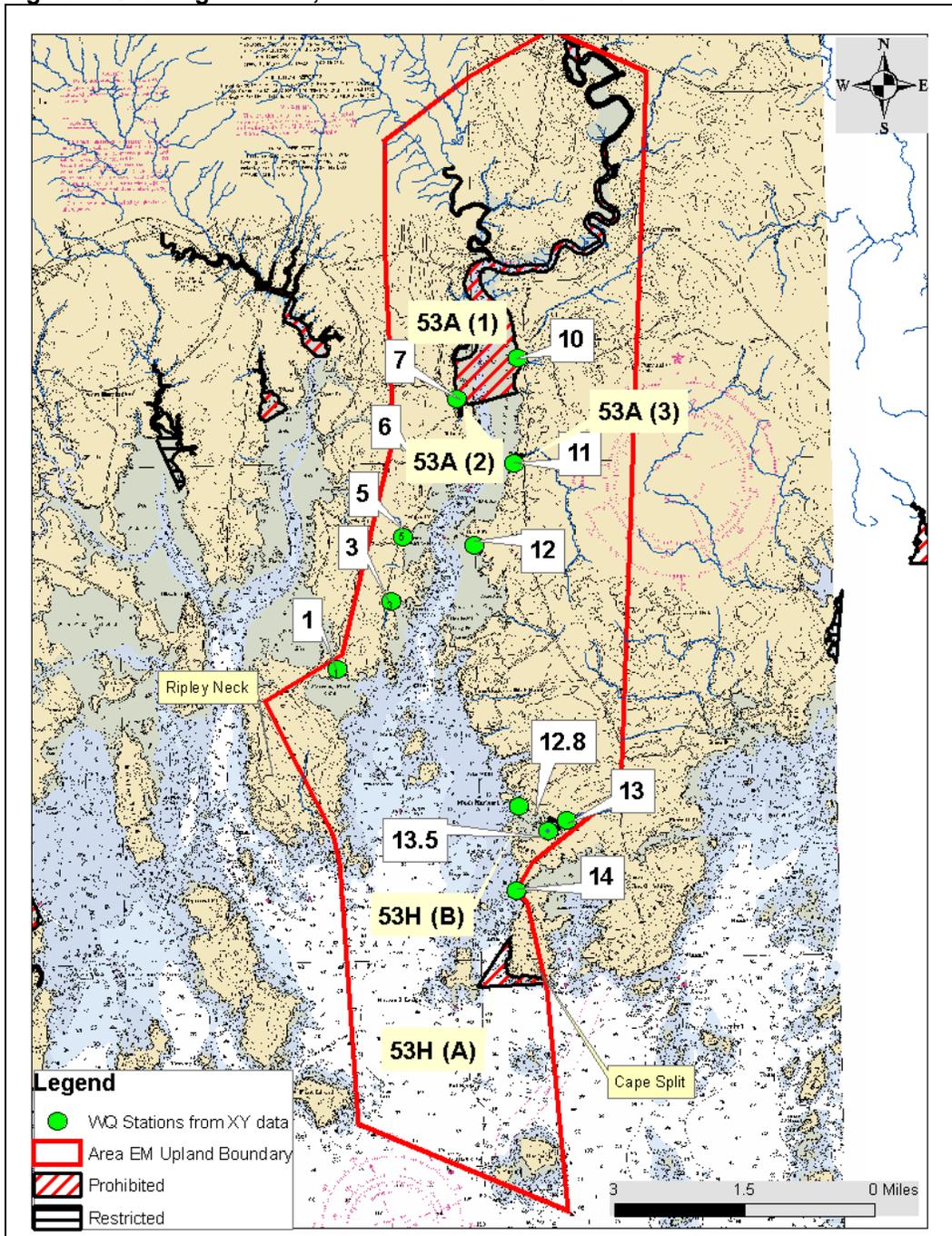
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Figure 1. Growing Area EM, with Active Water Stations





Executive Summary

This is an annual report for growing area EM written in compliance with the requirements of the 2009 Model Ordinance and the National Shellfish Sanitation Program.

During the current review year, one licensed overboard discharge was removed. One station, EM 15.5 was deactivated on 9/14/10. There are no conditionally managed areas and there are no aquaculture sites in Growing Area EM. Based on the current water quality review, one downgrade in classification was required at station EM 10; it was completed on 1/19/2011. One upgrade in classification is proposed in this report.

The next triennial report is due in 2011; the next sanitary survey report is due in 2018.

Growing Area Description

This report covers growing area EM, Pleasant River Bay, which is bounded on the west by Ripley Neck, Harrington and on the east by Cape Split, Addison (Figure 1). The growing area lies entirely within the towns of Harrington and Addison, although the main branch of the river is tidally influenced inland to Columbia Falls. Fresh water influence along these shores is from two rivers draining into this area; the main and west branches of the Pleasant River and numerous brooks and streams. The drainage area for this watershed is 60.6 sq/miles (USGS 01022260 Pleasant River near Epping, Maine). A complete description of the growing area boundary can be found in the central files.

There are no municipal sewage treatment facilities in this growing area; however there are 11 private licensed overboard discharges located between the towns of Columbia Falls, Addison Village and Cape Split. There are two farms located along the shores of this growing area. One is a commercial llama and red deer farm and the other is a small private farm with chickens, geese and one horse. There are no commercial marinas but there are numerous private piers for small recreational boats and local fishing boats. The local fishing boats are mainly lobster boats and one boat is a small herring purse seine vessel.

Current Classification(s)

At the end of the 2010 review year, shellfish growing area EM had areas classified as:

Approved: Seven sample sites; EM 1, 3, 5, 6, 12 (newly reactivated) 12.8, 13.5 (new) and 14

Restricted: Area No. 53B South end of Dyer Cove (non point source pollution), 1 sample site EM 7 (Boundary station meets approved standard)
Area No. 53C Batson Brook (non point source pollution), 1 sample site EM 11



Area No. 53H (B) Mash Harbor (non point source pollution), 1 sample site EM 13

Prohibited: Area No. 53A Pleasant River (OBD's) one sample site EM 10
Area No. 53H (A) Cape Split (OBD's) no sample site; due to OBD; OBD was removed and area is recommended for an upgrade in classification

Please visit the DMR website to view legal notices:

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#

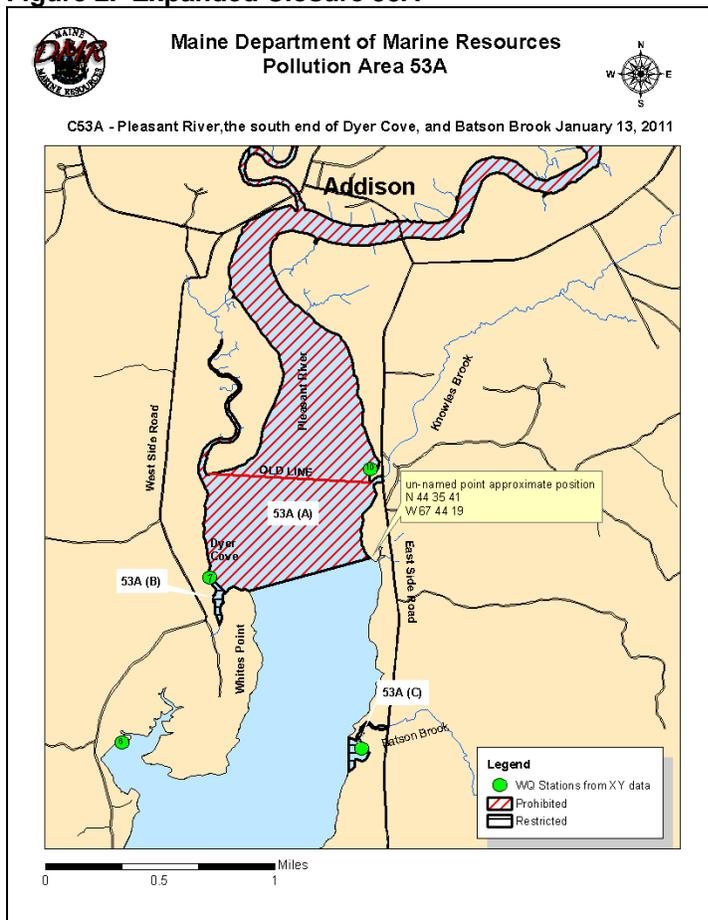
Activity during Review Period

Prohibited area in notice 53A was expanded on 1/19/10 because of water quality not meeting the approved standard at station EM 10 (Figure 2). The closure line was moved down to the next station meeting the approved standard, EM 7.

One OBD was removed in Cape Split, Addison and the station monitoring the area EM 15.5 was deactivated. The area is being recommended for an upgrade in classification to Approved. One old inactive station EM 12 was reactivated on 10/6/10.



Figure 2. Expanded Closure 53A



Conditionally Managed Area(s)

There are no conditionally managed areas in Area EM.

Water Quality Review and Discussion

Table 1 lists all active approved, restricted and prohibited stations in Growing Area EM, with their respective geomean and P90 calculations for 2010. Please refer to Appendix A for a key to interpreting the headers on the columns of Table 1. The approved and restricted standards for each station are also displayed in Table 1. These standards will fluctuate yearly as a result of the DMR transition from a most probable number (MPN) fecal coliform test method to a membrane filtration (MF) method and are dependent on the number of sample analyzed by MPN versus MF. The total number of data points used in the calculations is displayed in the Count column and includes both MPN and MF values. The number of data points analyzed by



MF is displayed in the MFCNT column. This fluctuating standard will cease when all 30 data points have been analyzed by the MF method. A more detailed explanation of this transition can be found in central files.

All approved stations met their NSSP classification standard in 2010 except EM 10 this station was reclassified to prohibited in January 2011. Station EM 7 is classified as restricted but is located on the boundary of an approved area and therefore must meet the approved standard; in 2010, this boundary station met the approved standard. All stations classified as restricted in 2010 met the standard for restricted harvest

Table 1. 2010 End of Year P90

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std
EM001.00	A	30	26	3.8	0.72	1700	32.6	32	176
EM003.00	A	30	26	3.5	0.53	158	17.2	32	176
EM005.00	A	30	26	3.1	0.53	580	15.2	32	176
EM006.00	A	30	27	2.5	0.28	29	5.9	32	173
EM007.00	R-boundary	30	26	3.6	0.53	460	17.7	32	176
EM010.00	A	30	26	7.2	0.53	80	35.3	32	176
EM011.00	R	30	26	8.6	0.79	1700	89.8	32	176
EM012.00	new	10	3	5.6	0.65	260	40.7	42	249
EM012.80	A	30	27	3.2	0.4	46	10.7	32	173
EM013.00	R	30	27	11	0.77	560	107.2	32	173
EM013.50	new	18	18	4.4	0.57	52	25	31	163
EM014.00	A	30	26	3.1	0.5	320	13.8	32	176

All stations that were active during the 2010 were sampled at least 6 times following the systematic random sampling (SRS) schedule (Table 2). Station EM 6 serves as a flood closure re-opening station and was additionally sampled using the adverse strategy.

Table 2. 2010 Sample Effort

Station	Class	Adverse	Extra	Random		Total	Comments
		Closed	Open	Closed	Open		
EM001.00	A				6	6	
EM003.00	A				6	6	
EM005.00	A				6	6	
EM006.00	A	19			6	25	flood sample site
EM007.00	A				1	1	Boundary station; meets standard for approved
	R				5	5	
EM010.00	A				6	6	
EM011.00	R				6	6	
EM012.00	A				3	3	Reactivated 10-6-10
EM012.80	A		1		6	7	



Station	Class	Adverse	Extra	Random		Total	Comments
		Closed	Open	Closed	Open		
EM013.00	R		1		5	6	
EM013.50	R		1		5	6	
EM014.00	A				6	6	
EM015.50	P			4		4	deactivated 09/10 OBD removed

Figure 2 shows the three year P90 trend for all approved and restricted stations for area EM. EM 10 is currently exceeding the approved standard and has been reclassified on 1/19/11 to reflect this. The station is located near the mouth of a small tidally influenced stream and has a high concentration of year round waterfowl; this station will continue to be reviewed quarterly during the 2011 sampling season to see if this upward trend continues. Station EM 1 is now at 100% of the standard. The area around this station was surveyed in September after a fecal score of 1700 FC/100 ML was recorded from a sample collected on 9/14/10. No human sources of pollution were discovered and no obvious reason for the high score was found. This station will have to be monitored on a per sample basis during the 2011 season to make sure it does not exceed the standard for approved harvest. Of the approved stations (EM 1, 3, 5, 6, 12.8, 13.5 and 14), EM 6 is the only one that trended down for the 2010 sampling season. Even though the other approved stations trended upward they are still well below the standard for approved harvest.

Figure 3. P90 Trends for Growing Area EM approved stations, 2008-2010

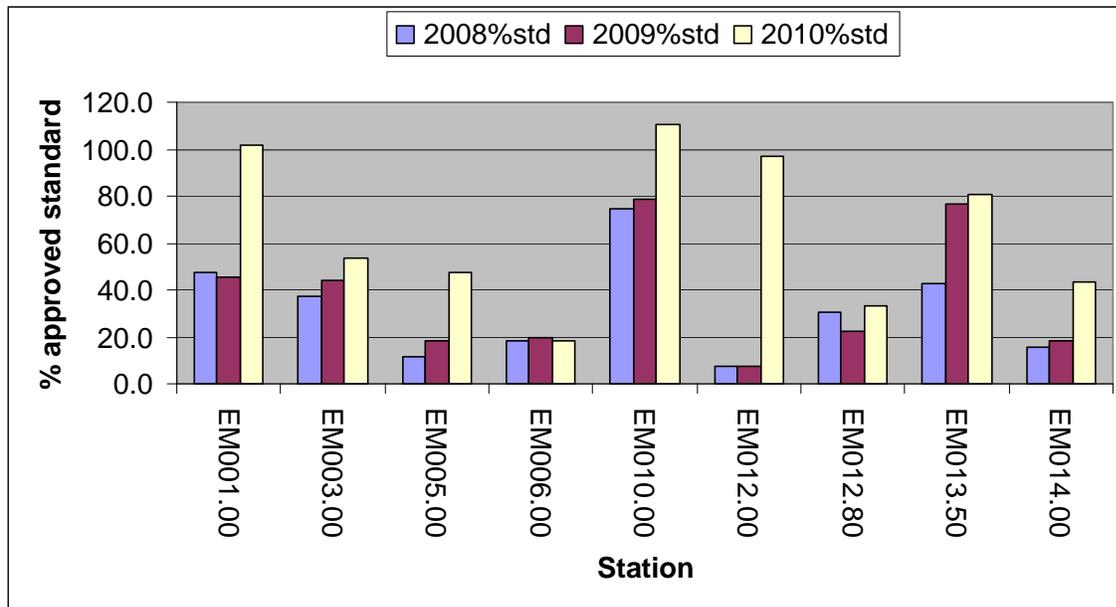
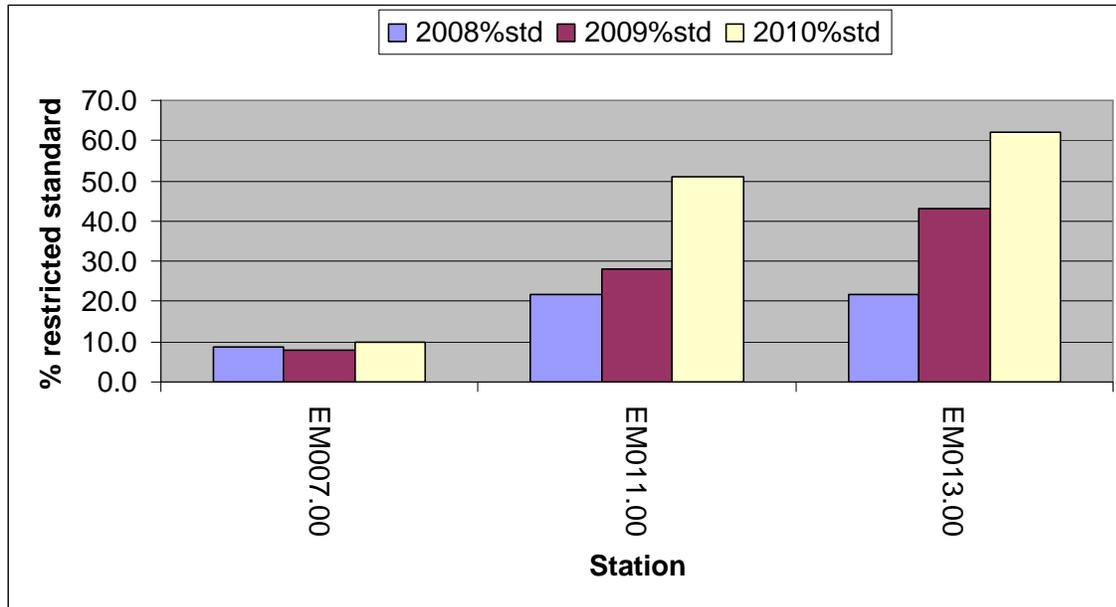




Figure 4 Area EM P90 Trend restricted stations



Upward Classification Changes

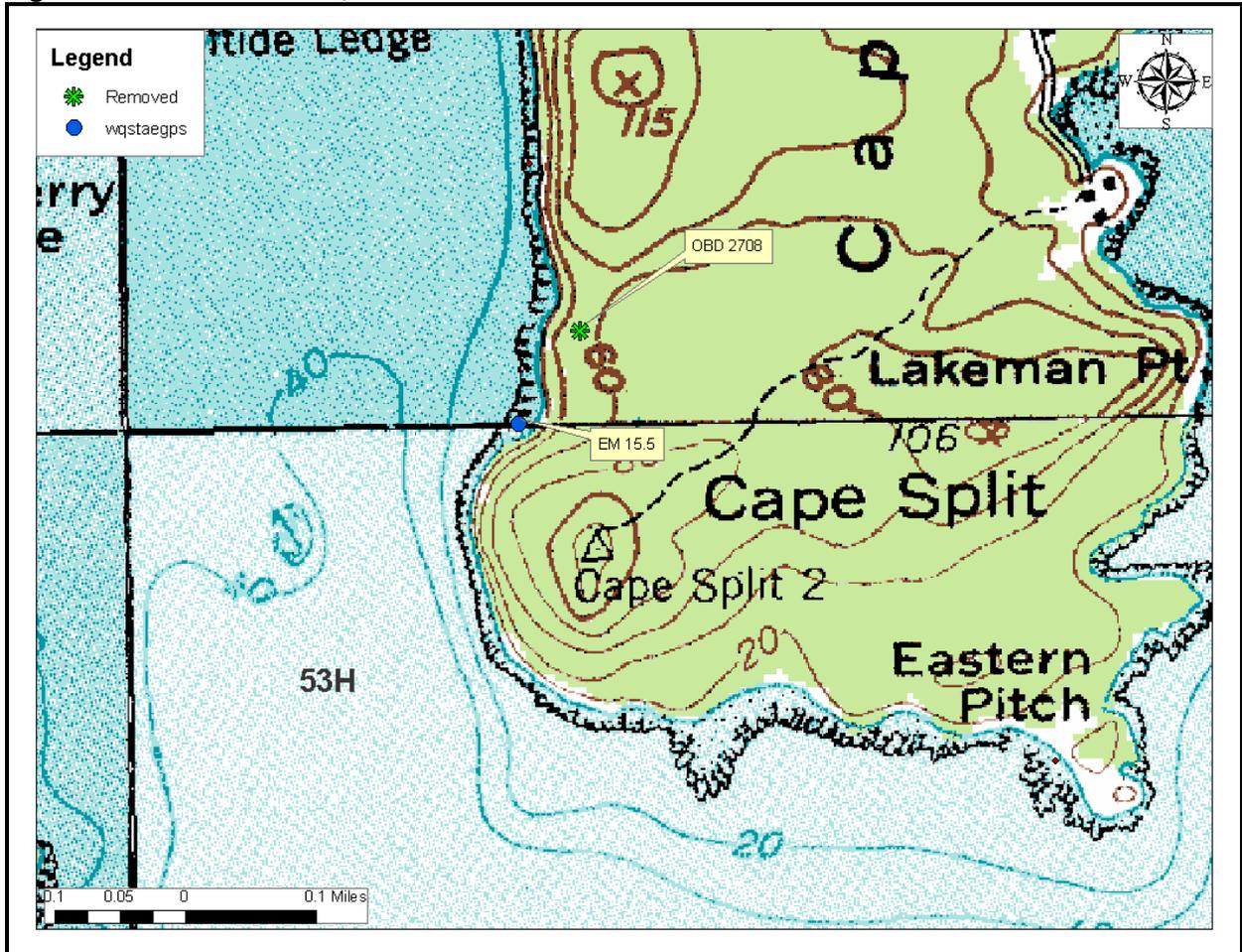
Area No. 53H (A), Cape Split is currently classified as prohibited based on the presence of OBD #2708. During a drive trough survey of the area on June 24th it was observed that the OBD had been removed and a new in ground septic system had been installed. An email sent to DEP confirmed that their records indicated that the OBD had been removed. This area had one station, EM 15.5 located near the outfall for OBD #2708 which was activated in 2006 to serve as the boundary station for closure 53H. This station has a P90 of 12.8 based on 28 samples and is well below the standard for approved harvest (Table 3). When it was confirmed that the OBD was removed station EM 15.5 was deactivated. A shoreline survey conducted in 2006 found no other sources of pollution in this area and a follow up survey of the area conducted on 6/24/10 confirmed no new pollution sources in the area. With the removal of the OBD and the results of the 2006 and 2010 survey, it is recommended that the closure 53H be repealed (Figure 4).

Table 3. Geometric Mean and P90 Score for EM 15.5

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std
EM015.50	P	28	28	2.5	0.55	1520	12.8	31	163



Figure 5. Closure Area 53H, with Current Classification



Shoreline Survey Activity

A drive through survey was conducted on June 24, 2010. During this survey, an OBD removal and replacement with an in-ground septic system was noted in the vicinity of sample station EM 15.5. On the same day, there were 12 llamas counted at the Pleasant Bay Bed and Breakfast llama farm. Eight RV's were counted at the Pleasant River RV Park. None were observed discharging to the ground. Seven boats were counted at the town landing, six were workboats less than 35' in length and one was a pleasure boat.

Aquaculture/Wet Storage Activity

Growing area EM has no aquaculture or wet storage sites.



Recommendation for Future Work

Extra samples will be collected at station EM 12 to help build up current data. Extra samples at stations EM 1 and EM 10 will also be collected to help determine if there is a persistent problem that caused these two sites to have increased P90 scores at the end of 2010. These stations should also be sampled during adverse conditions, such as rainfall events to better evaluate the effect of precipitation on water quality in this area.

References

USGS 2008 Water Report <http://wdr.water.usgs.gov/wy2008/pdfs/01022260.2008.pdf>;
Accessed February 2011



Appendix A. Key to Water Quality Table Headers

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation

Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.