pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Southwest Regional Office
CLEAN WATER PROGRAM

NPDES PERMIT FACT SHEET
INDIVIDUAL SEWAGE

Application Type	**Renewal**	Application No.	**PA0094960**
Facility Type	**Non-Municipal**	APS ID	**994130**
Major / Minor	**Minor**	Authorization ID	**1274809**

Applicant and Facility Information

Applicant Name	**Urban Life Management LLC**	Facility Name	**Barnes Apartments STP**
Applicant Address	40 Van Winkle Avenue	Facility Address	Rte 519
	Garfield, NJ 07026		Eighty Four, PA 15330
Applicant Contact	Mr. Walter Sajnoski	Facility Contact	Same as Applicant
Applicant Phone	(201) 321-2562	Facility Phone	Same as Applicant
Client ID	307598	Site ID	248170
Ch 94 Load Status	Not Overloaded	Municipality	Somerset Township
Connection Status	No Limitations	County	Washington
Date Application Received	May 28, 2019	EPA Waived?	Yes
Date Application Accepted	May 29, 2019	If No, Reason	

Purpose of Application: Application for a renewal of an existing NPDES permit for the discharge of treated Sewage.

Summary of Review

The applicant has applied for a renewal of an existing NPDES Permit, Permit No. PA0094960, which was previously issued by the Department on February 6, 2015. That permit expired on February 29, 2020.

WQM Permit No. 6386414 approved construction of a STP with a design flow rate of 0.0023 MDG. The existing treatment process consists of an activated sludge plant followed by a settling tank, dosing tank, intermittent sand filtration, tablet chlorinator, and chlorine contact tank.

The receiving stream, Little Chartiers Creek, is classified as a HQ-WWF, and is located in State Watershed No. 20-F.

The applicant has complied with Act 14 Notifications and no comments were received.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Approve	Deny	Signatures	Date
X		William C. Mitchell William C. Mitchell, E.I.T. / Project Manager	April 13, 2020
X		Christopher Kriley Christopher Kriley, P.E. / Program Manager	April 14, 2020

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.0023
Latitude	40º 10' 51.40"	Longitude	-80º 8' 9.2"
Quad Name	Washington, East	Quad Code	1805
Wastewater Description:	Sewage Effluent		
Receiving Waters	Little Chartiers Creek (HQ-WWF)	Stream Code	36943
NHD Com ID	99424994	RMI	10.8
Drainage Area	21.64	Yield (cfs/mi^2)	0.034
Q_{7-10} Flow (cfs)	0.7358	Q_{7-10} Basis	Adjusted yield for Chartiers Creek Analysis
Elevation (ft)		Slope (ft/ft)	
Watershed No.	20-F	Chapter 93 Class.	HQ-WWF
Existing Use		Existing Use Qualifier	
Exceptions to Use		Exceptions to Criteria	
Assessment Status	Impaired		
Cause(s) of Impairment	Pathogens, PCBs, Chlordane, Iron, Manganese, and Aluminum		
Source(s) of Impairment	Source Unknown, AMD		
TMDL Status	**Final, Final**	Name	Chartiers Creek, Chartiers Creek Watershed

Background/Ambient Data		Data Source
pH (SU)		
Temperature (°F)		
Hardness (mg/L)		
Other:		

Nearest Downstream Public Water Supply Intake		West View Municipal Authority	
PWS Waters	Ohio River	Flow at Intake (cfs)	
PWS RMI		Distance from Outfall (mi)	

Changes Since Last Permit Issuance: NONE

Other Comments:

The discharge is to Little Chartiers Creek which flows into Chartiers Creek Watershed that has a Final TMDL and is impaired by PCB and Chlordane. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants.

The discharge is to Little Chartiers Creek which flows into the Chartiers Creek Watershed that has a Final TMDL and is impaired by metals and pH. This sewage discharge is not expected to contribute to the stream impairment for which abandoned mine drainage is source of such impairment. No WLAs have been developed for this sewage discharge and they are not expected to contribute to the stream impairment for these pollutants. The permit requires a 1/year monitoring requirement for Total Iron, Total Manganese and Total Aluminum for plants rated between 0.002 MGD up to 0.499 MGD.

Treatment Facility Summary

Treatment Facility Name: Barnes Apartments STP

WQM Permit No.	Issuance Date
6386414	

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary with NH3-N Removal	Activated Sludge	Tablet Chlorination	0.0002 - 2018

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.0023	4.379	Not Overloaded	N/A	Hauled to Monaca STP

Changes Since Last Permit Issuance: NONE

Compliance History

Other Comments: An Operations Compliance Check Report for this facility was requested on April 10, 2020 and will be included in the Fact Sheet Addendum.

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.0023
Latitude 40º 10' 51.40" **Longitude** -80º 8' 9.20"
Wastewater Description: Sewage Effluent

Technology-Based Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	25	Average Monthly	133.102(a)(4)(i)	92a.47(a)(1)
	40	Average Weekly	133.102(a)(4)(ii)	92a.47(a)(2)
	30	Average Monthly	133.102(b)(1)	92a.47(a)(1)
Total Suspended Solids	45	Average Weekly	133.102(b)(2)	92a.47(a)(2)
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
Fecal Coliform (5/1 – 9/30)	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
Fecal Coliform (10/1 – 4/30)	10,000 / 100 ml	IMAX	-	92a.47(a)(5)
Total Residual Chlorine	0.5	Average Monthly	-	92a.48(b)(2)

Comments: The attached TRC_CALC Spreadsheet confirms that a technology-based effluent limitation for TRC is acceptable.

Water Quality-Based Limitations

There are five additional STPs (see attached map) that are located in close proximity to the Barnes Apartments STP, namely the KOA Campground STP, Windsor Highland STP, Martin Farms STP, 84 Industrial Park STP, and 84 Lumber STP. All WQM data output files can be found in the November 14, 1989 and January 20, 2000 fact sheets for this facility. The previously approve fact sheet stated that output files were not legible due to the poor quality of the microfiche and were not attached.

Anti-Backsliding

N/A

High Quality Stream-Based Limitations

The HQ policy that applied when effluent limitations were developed in 1989 established a best available technology average monthly warm period limit of 3.0 mg/l for Ammonia, which was used as the baseline effluent value in WQM 6.3. It also established a baseline dissolved oxygen limit of 5.0 mg/l. Modeling confirmed more stringent limitations were not necessary.

A baseline $CBOD_5$ limitation of 10 mg/l was used in the 1989 WQM 6.3 evaluation consistent with the HQ policy at that time. Raising the $CBOD_5$ effluent limit to 25 mg/l did not result in a measurable in-stream dissolved oxygen change greater than 0.2 mg/l, therefore the limit was relaxed to 25 mg/l as allowed by the HQ policy.

Additional Considerations

A Lake Phosphorus Study conducted by the Department in 1987 formed the basis for Canonsburg Lake appearing on Pennsylvania's 1996 303(d) list. The study was done to assess the potential effects of imposing Total Phosphorus (TP) effluent limits on phosphorus dischargers in the watershed. The study determined that Canonsburg Lake would realize only modest improvements in water quality with effluent limits because the overwhelming majority of the phosphorus load

to the lake was delivered from nonpoint sources. Therefore, the study concluded that no TP limits were required for dischargers. Permitted point source flows in the watershed have almost doubled since that time. A combined watershed modeling/lake water quality modeling approach was used to conduct a TMDL assessment for Canonsburg Lake in 2004. Per an August 6, 2004 e-mail from Evelyn MacKnight, USEPA, the Barnes Apartments STP was assigned a TP WLA limitation of 6 mg/l which will therefore be re-imposed in this renewal permit as a monthly average limitation.

Nutrient monitoring is required to establish the nutrient load from the waste water treatment facility and the impacts that load may have on the quality of the receiving stream(s). Sewage discharges with design flows > 2,000 gpd require monitoring, at a minimum, for Total Nitrogen (TN) and TP, however as stated above, a TP limit will be imposed. Due to the low discharge volume, a monitoring frequency of once per year for TN is considered acceptable.

For pH, Dissolved Oxygen (DO) and TRC, a monitoring frequency 1/day has been imposed. In general, less frequent monitoring may be established only when the permittee demonstrates that there will be no discharge on days where monitoring is not required.

Monitoring frequency for the proposed effluent limits are based upon Table 6-3, Self-Monitoring Requirements for Sewage Dischargers, from the Departments Technical Guidance for the Development and Specification of Effluent Limitations.

Proposed Effluent Limitations and Monitoring Requirements

The limitations and monitoring requirements specified below are proposed for the draft permit, and reflect the most stringent limitations amongst technology, water quality and BPJ. Instantaneous Maximum (IMAX) limits are determined using multipliers of 2 (conventional pollutants) or 2.5 (toxic pollutants). Sample frequencies and types are derived from the "NPDES Permit Writer's Manual" (362-0400-001), SOPs and/or BPJ.

Outfall 001, Effective Period: Permit Effective Date through Permit Expiration Date.

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Flow (MGD)	0.0023	XXX	XXX	XXX	XXX	XXX	2/month	Measured
pH (S.U.)	XXX	XXX	6.0 Inst Min	XXX	XXX	9.0	1/day	Grab
DO	XXX	XXX	5.0 Inst Min	XXX	XXX	XXX	1/day	Grab
TRC	XXX	XXX	XXX	0.5	XXX	1.6	1/day	Grab
CBOD5	XXX	XXX	XXX	25	XXX	50	2/month	Grab
TSS	XXX	XXX	XXX	30	XXX	60	2/month	Grab
Fecal Coliform (No./100 ml) Oct 1 - Apr 30	XXX	XXX	XXX	2000 Geo Mean	XXX	10000	2/month	Grab
Fecal Coliform (No./100 ml) May 1 - Sep 30	XXX	XXX	XXX	200 Geo Mean	XXX	1000	2/month	Grab
Total Nitrogen	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Ammonia Nov 1 - Apr 30	XXX	XXX	XXX	9.0	XXX	18.0	2/month	Grab
Ammonia May 1 - Oct 31	XXX	XXX	XXX	3.0	XXX	6.0	2/month	Grab
Total Phosphorus	XXX	XXX	XXX	6.0	XXX	12.0	2/month	Grab
Total Aluminum	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

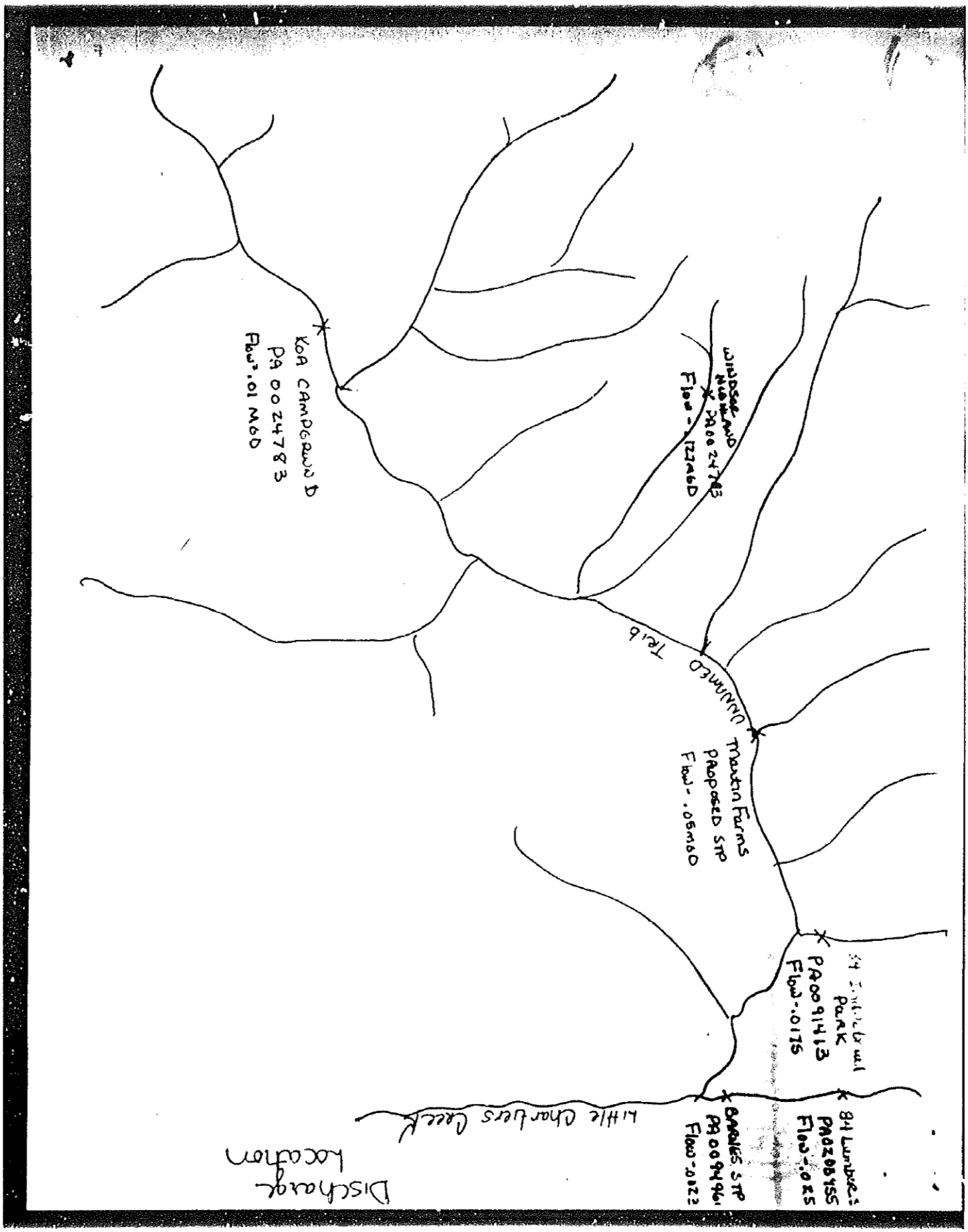
Outfall 001, Continued (from Permit Effective Date through Permit Expiration Date)

Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) (1)		Concentrations (mg/L)				Minimum (2) Measurement Frequency	Required Sample Type
	Average Monthly	Average Weekly	Minimum	Average Monthly	Maximum	Instant. Maximum		
Total Iron	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab
Total Manganese	XXX	XXX	XXX	XXX	Report Daily Max	XXX	1/year	Grab

Compliance Sampling Location: Outfall # 001

Ohio River Basin in Pennsylvania
Ohio River

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
1—Ohio River	Main Stem, Confluence of Allegheny and Monongahela Rivers to PA-OH State Border	Beaver	WWF; *Add* N	See Orsanco Pollution Control Standards
2—Unnamed Tributaries to Ohio River	Basins, Confluence of Allegheny and Monongahela Rivers to PA-OH State Border	Allegheny-Beaver	WWF	None
2—Sawmill Run	Basin	Allegheny	WWF	None
2—Chartiers Creek	Main Stem	Allegheny	WWF	None
3—Unnamed Tributaries to Chartiers Creek	Basins	Washington-Allegheny	WWF	None
3—Reservoir No. 4	Basin	Washington	HQ-WWF	None
3—Reservoir No. 3	Basin	Washington	HQ-WWF	None
3—Reservoir No. 2	Basin	Washington	HQ-WWF	None
3—Catfish Creek	Basin	Washington	WWF	None
3—Georges Run	Basin	Washington	WWF	None
3—Chartiers Run	Basin	Washington	WWF	None
3—Brush Run	Basin	Washington	WWF	None
3—Little Chartiers Creek	Basin, Source to Alcoa Dam	Washington	HQ-WWF	None
3—Little Chartiers Creek	Basin, Alcoa Dam to Mouth	Washington	WWF	None
3—McPherson Creek	Basin	Washington	WWF	None


Discharge location
White Clover Acres
Barnes STP
PA0094961
Flow-.022
84 Lumber
PA0268455
Flow-.025
Trib
Martin Farms
Proposed STP
Flow-.05MGD
KOA Campground
PA 0024783
Flow-.01 MGD

Copy of TRC_CALC

TRC EVALUATION

0.735	= Q stream (cfs)	0.5	= CV Daily
0.0023	= Q discharge (MGD)	0.5	= CV Hourly
4	= no. samples	0.995	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	**1.3.2.iii**	WLA afc = 65.586	**1.3.2.iii**	WLA cfc = 64.255
PENTOXSD TRG	**5.1a**	LTAMULT afc = 0.373	**5.1c**	LTAMULT cfc = 0.581
PENTOXSD TRG	**5.1b**	LTA_afc= 24.439	**5.1d**	LTA_cfc = 37.355

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.720	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.500	BAT/BPJ
		INST MAX LIMIT (mg/l) = 1.170	

WLA afc	**(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))...**
	...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	**(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))...**
	...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	**1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)**