

KPDES



KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0102083

AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

United States Enrichment Corporation (USEC)
Two Democracy Center
6903 Rockledge Drive
Bethesda, Maryland 20817

is authorized to discharge from a facility located at

United States Enrichment Corporation
Paducah Gaseous Diffusion Plant (PGDP)
5600 Hobbs Road
Paducah, McCracken County, Kentucky

to receiving waters named

Outfalls 002 and 010 thru 013 are to Little Bayou Creek at mile points 4.6, 4.8, 5.0, 5.3 and 5.6, respectively.
Outfall 004 is an internal discharge to Outfall 008.
Outfalls 006, 008, 009, and 016 are to Big Bayou Creek at mile points 6.0, 6.3, 6.8 and 6.6, respectively.

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, IV, and V hereof. The permit consists of this cover sheet, and Part I 6 page(s), Part II 1 page(s), Part III 1 page(s), Part IV 4 page(s), and Part V 3 page(s).

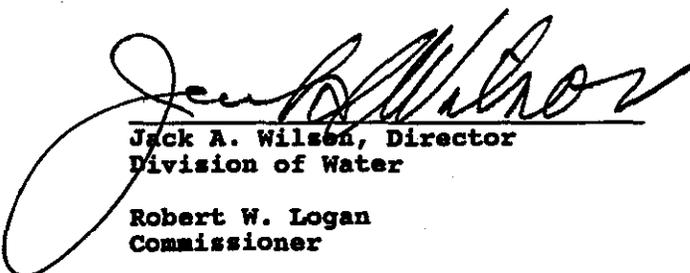
This permit shall become effective on **APR 01 1998**

This permit and the authorization to discharge shall expire at midnight,

MAR 31 2003

MAR 13 1998

Date Signed



Jack A. Wilson, Director
Division of Water

Robert W. Logan
Commissioner

DEPARTMENT FOR ENVIRONMENTAL PROTECTION
Division of Water, Frankfort Office Park, 14 Reilly Road, Frankfort, Kentucky 40601

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from outfall(s) serial number(s): 002 - Lift Station 002 bypass and storm water runoff, 011 - Lift Station 011 bypass, storm water runoff and C-617 Lagoon effluent when diverted from Outfall 010, 012 - Lift Station 012 bypass and storm water runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	lbs/day		Other Units (Specify)		Measurement <u>Frequency</u>	Sample <u>Type</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>		
Flow (MGD)	Report	Report	N/A	N/A	1/Month	Instantaneous
Discharge Temperature °F	Report	Report	89	Report	1/Month	Grab
Oil & Grease (mg/l)	N/A	N/A	10	15	1/Month	Grab
Polychlorinated Biphenyls ¹ (µg/l)	N/A	N/A	Report	Report	1/Month	Grab
Trichloroethylene (mg/l)	N/A	N/A	Report	Report	1/Month	Grab
Hardness (as mg/l CaCO ₃)	N/A	N/A	Report	Report	1/Month	Grab
Total Residual Chlorine (mg/l)	N/A	N/A	Report	Report	1/Month	Grab
Total Phosphorous (mg/l)	N/A	N/A	1.0	1.0	1/Month	Grab
Acute Toxicity (TU _a) ¹	N/A	N/A	Report	1.00	1/Quarter	Grab
Total Uranium (mg/l)	N/A	N/A	Report	Report	1/Quarter	Grab
Technetium-99 (pCi/l)	N/A	N/A	Report	Report	1/Quarter	Grab
Total Recoverable Metals ²	N/A	N/A	Report	Report	1/Quarter	Grab

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Week by grab sample. The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

See Part III C for additional requirements regarding the use of Cooling Water Additives, FIFRA, Mollusk Control chemicals.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken during a period of discharge during the normal working hours of 8:00 am to 5:00 pm Monday through Friday except holidays at the following location(s): nearest accessible point after final treatment, but prior to actual discharge or mixing with receiving waters.

¹ On those occasions when the C-617 Lagoon effluent is diverted from Outfall 010 to Outfall 011 for extended periods of time, Chronic Toxicity requirements of 1.00 TU_c shall apply in lieu of the Acute Toxicity to Outfall 011. On such occasions three 24-Hr Composite samples shall be collected on a monthly basis.

²TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from outfall(s) serial number(s): 004 - C-615 Sewage Treatment Plant and storm water runoff.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>		
	<u>Monthly Average</u>	lbs/day <u>Daily Maximum</u>	Other Units (Specify) <u>Monthly Average</u>		<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow (MGD)	Report	Report	N/A		N/A	2/Month	Instantaneous
Carbonaceous Biochemical Oxygen Demand, 5-day (mg/l)	N/A	N/A	30		45	2/Month	Grab
Fecal Coliform Bacteria (#/100 ml)	N/A	N/A	200		400	2/Month	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): nearest accessible point after final treatment, but prior to actual discharge or mixing with the wastewaters of Outfall 008.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from outfall(s) serial number(s): 006 - C-611 Water Treatment Plant.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	lbs/day		Other Units (Specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>		
Flow (MGD)	Report	Report	N/A	N/A	1/Week	Instantaneous
Total Suspended Solids (mg/l)	Report	Report	30	50	1/Week	Grab
Oil & Grease (mg/l)	N/A	N/A	10	15	1/Week	Grab
Total Residual Chlorine (mg/l)	N/A	N/A	Report	Report	1/Month	Grab
Hardness (as mg/l CaCO ₃)	N/A	N/A	Report	Report	1/Month	Grab
Acute Toxicity (TU _a)	N/A	N/A	Report	1.00	1/Quarter	2 Grabs
Total Recoverable Metals ¹	N/A	N/A	Report	Report	1/Quarter	Grab

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Week by grab sample. The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): nearest accessible point after final treatment, but prior to actual discharge or mixing with receiving waters.

¹TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from outfall(s) serial number(s): 008 - Combined wastestreams of once-through cooling water, steam condensate and miscellaneous wastewaters, uranium contaminated solution, hazardous wastes, storm water runoff and Outfall 004 (C-615 Sewage Treatment Plant and storm water runoff), 009 - Combined wastestreams of once-through cooling waters, steam condensate, miscellaneous wastewaters and storm water runoff, and 010 - Lift Station 010 bypass and storm water runoff and/or C-617 Lagoon effluent unless diverted to Outfall 011.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>EFFLUENT CHARACTERISTICS</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	lbs/day		Other Units (Specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>		
Flow (MGD)	Report	Report	N/A	N/A	1/Week	Instantaneous
Discharge Temperature °F	Report	Report	89	Report	1/Week	Grab
Oil & Grease (mg/l)	N/A	N/A	10	15	1/Week	Grab
Total Residual Chlorine (mg/l)	N/A	N/A	Report	Report	1/Month	Grab
Total Phosphorous (mg/l)	N/A	N/A	1.0	1.0	1/Week	Grab
Polychlorinated Biphenyls (µg/l)	N/A	N/A	Report	Report	1/Month	Grab
Trichloroethylene (mg/l)	N/A	N/A	Report	Report	1/Month	Grab
Hardness (as mg/l CaCO ₃)	N/A	N/A	Report	Report	1/Month	Grab
Chronic Toxicity (TU _c) ¹	N/A	N/A	Report	1.00	1/Quarter	3 24-Hr Composites
Total Recoverable Metals ²	N/A	N/A	Report	Report	1/Quarter	Grab
Total Uranium (mg/l)	N/A	N/A	Report	Report	1/Quarter	Grab
Technetium-99 (pCi/l)	N/A	N/A	Report	Report	1/Quarter	Grab

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Week by grab sample. The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

See Part III C for additional requirements regarding the use of Cooling Water Additives, FIFRA, Mollusk Control chemicals.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): nearest accessible point after final treatment, but prior to actual discharge or mixing with receiving waters.

¹ On those occasions when the C-617 Lagoon effluent is diverted from Outfall 010 to Outfall 011 for extended periods of time, Acute Toxicity requirements of 1.00 TU_a shall apply in lieu of the Chronic Toxicity to Outfall 010. On such occasions, grab samples shall be collected on a monthly basis.

²TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from outfall(s) serial number(s): 013 - Surface runoff from the southeast corner of the plant and 016 - Fire fighting training waters are dechlorinated prior to commingling with storm water runoff from the southwest corner of the plant.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	lbs/day		Other Units (Specify)		Measurement Frequency	Sample Type
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow (MGD)	Report	Report	N/A	N/A	1/Month	Instantaneous
Oil & Grease (mg/l)	N/A	N/A	10	15	1/Month	Grab
Polychlorinated Biphenyls (µg/l)	N/A	N/A	Report	Report	1/Month	Grab
Trichloroethylene (mg/l)	N/A	N/A	Report	Report	1/Month	Grab
Hardness (as mg/l CaCO ₃)	N/A	N/A	Report	Report	1/Month	Grab
Acute Toxicity (TU _a)	N/A	N/A	Report	1.00	1/Quarter	Grab
Total Recoverable Metals ¹	N/A	N/A	Report	Report	1/Quarter	Grab
Total Uranium (mg/l)	N/A	N/A	Report	Report	1/Quarter	Grab
Technetium-99 (pCi/l)	N/A	N/A	Report	Report	1/Quarter	Grab

The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Month by grab sample.

See Part III C for additional requirements regarding the use of Cooling Water Additives, FIFRA, Mollusk Control chemicals.

There shall be no discharge of floating solids or visible foam or sheen in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken during a period of discharge during the normal working hours of 8:00 am to 5:00 pm Monday through Friday except holidays at the following location(s): nearest accessible point after final treatment, but prior to actual discharge or mixing with receiving waters.

¹TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

B. Schedule of Compliance

The permittee shall achieve compliance with all requirements on the effective date of this permit.

C. Priority Pollutants

During the term of the permit the permittee shall conduct at least two (2) complete scans for those pollutants listed on Form C, Section V, Part C from each designated outfall and shall be submitted to the Division of Water.

STANDARD CONDITIONS FOR KPDES PERMIT

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

PART III

OTHER REQUIREMENTS

A. Reporting of Monitoring Results

Monitoring results obtained during each month must be reported on a preprinted Discharge Monitoring Report (DMR) Form which will be mailed to you. Each month's completed DMR must be sent to the Division of Water at the address listed below (with a copy to the appropriate Regional Office) postmarked no later than the 28th day of the month following the month for which monitoring results were obtained.

Division of Water
Paducah Regional Office
4500 Clarks River Road
Paducah, Kentucky 42003
ATTN: Mr. Jeff Cummins

Kentucky Natural Resources and
Environmental Protection Cabinet
Dept. for Environmental Protection
Division of Water
Inventory & Data Management
14 Reilly Road, Frankfort Office Park
Frankfort, Kentucky 40601

B. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under 401 KAR 5:050 thru 5:085, if the effluent standard or limitation so issued or approved:

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

C. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical, not previously reported, for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals, to the Division of Water for review and establishment of appropriate control parameters. Such information requirements shall include:

1. Name and general composition of biocide or chemical,
2. 96-hour median tolerance limit data for organisms representative of the biota of the water way into which the discharge shall occur,
3. Quantities to be used,
4. Frequencies of use,
5. Proposed discharge concentrations, and
6. EPA registration number, if applicable.

**PART IV
CHRONIC CONCERNS
Biomonitoring**

In accordance with Part I of this permit, the permittee shall initiate the series of tests described below within 30 days of the effective date of this permit to evaluate wastewater toxicity of the discharge from Outfall(s) 008, 009, 010, & 011 when effluent from C-615 Lagoon is diverted to 011.

1. Test Requirements

- A. The permittee shall perform one short-term fathead minnow (Pimephales promelas) growth test and one short-term daphnid (Ceriodaphnia sp.) life-cycle test. Tests shall be conducted with appropriate replicates of 100% effluent, a control and a minimum of four evenly spaced serial dilutions of 100% effluent. If the permit limit is greater than 77% ($TU_c < 1.3$), then one dilution must be 100%. For all other conditions, two dilutions must be above the permit concentration and two below. Controls shall be tested concurrently with effluent testing using a synthetic water. The analysis will be deemed reasonable and good only if the minimum control requirements are met (i.e. >80% survival; 60% adults with 3 broods and 15 young/female for the Ceriodaphnia test; an average 0.25 mg weight for the minnow growth test). Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period (i.e. monthly or quarterly). Noncompliance with the toxicity limit will be demonstrated if the IC_{25} (inhibition concentration) for reproduction or growth is less than 100% effluent. The average reproduction for Ceriodaphnia shall be calculated by dividing the total number of live Ceriodaphnia young in each concentration by the total number of organisms used to initiate that concentration; the average growth for the fathead minnows shall be calculated by dividing the total weight of surviving minnow larvae in each replicate by the total number of organisms used to initiate that replicate.
- B. Tests shall be conducted on both species once per quarter or at a frequency to be determined by the permitting authority.

A minimum of three (3) twenty-four hour composite samples will be collected at a frequency of one sample every other day, or at a frequency to be determined by the permitting authority. For example, the first sample would be used for test initiation, day 1, and for test solution renewal on day 2. The second sample would be used for test solution renewal on days 3 and 4. The third sample would be used for test solution renewal on days 5, 6, and 7. The lapsed time from collection of the last aliquot of the composite and its first use for test initiation, or for test solution renewal shall not exceed 36 hours. Composite samples shall be chilled during collection and maintained at 4°C until used.

If after at least 6 quarters of testing, it can be determined that Ceriodaphnia or the Fathead minnow is more sensitive, a request for testing of only that organism can be made to the Division. Upon approval, that organism can be chosen as representative and all subsequent tests can be conducted on only that organism.

2. Reporting Requirements

Results of all tests conducted with any organism shall be reported according to the most recent format provided by the Division of Water. Test results shall be submitted to the Division of Water with the next regularly scheduled discharge monitoring report.

3. Chronic Toxicity

- A. If noncompliance with the toxicity limit occurs (IC_{25} for reproduction or growth is less than 100% effluent), the permittee must conduct a second test within 15 days of the first failure. This test will be used in evaluating the persistence of the toxic event and the possible need for a toxicity reduction evaluation (TRE).

If the second test demonstrates noncompliance with the toxicity limit, the permittee will be required to perform either of the options listed below. The Division must be notified of the option selected within 5 days of the failure of this second test.

1) Accelerated Testing

Complete four (4) additional tests within 90 days of selection of this option to evaluate the frequency and degree of toxicity. The results of the two tests specified in Section 3.A and of the four additional tests will be used for purposes of this evaluation.

If results from 2 of any 6 tests show a significant noncompliance with the chronic limit (>1.2 times the TU_c), or results from 4 of any 6 tests show chronic toxicity (as defined in 1.A), a Toxicity Reduction Evaluation (TRE) will be required. The Division reserves the right to require a TRE in situations of recurring toxicity.

2) Toxicity Reduction Evaluation (TRE)

If it is determined that a TRE is required, a plan and implementation schedule must be submitted to the Division within 30 days of notification. The TRE shall include appropriate measures such as in-plant controls, additional wastewater treatment, or changes in the operation of the wastewater discharge to meet permit conditions. The TRE protocol shall follow that outlined in the most recent edition of EPA's guidance for conducting TRE's.

- B. If a violation of the toxicity limit occurs, different or more stringent monitoring requirements may be imposed in lieu of the normal requirements of this permit for whatever period of time is specified by the Division of Water. The Division reserves the right to require additional testing or a TRE in situations of recurring toxicity.

4. Test Methods

All test organisms, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (Second Edition), EPA-600/4-91/002 and An Interpolation Estimate for Chronic Toxicity: the IC_p approach, National Effluent Toxicity Assessment Center, U.S. EPA, Technical Report 05-88, or the most recent edition of these publications.

**PART IV
ACUTE CONCERNS
Biomonitoring**

In accordance with Part I of this permit, the permittee shall initiate the series of tests described below within 30 days of the effective date of this permit to evaluate wastewater toxicity of the discharge from outfall(s) 002, 006, 010 when diverting effluent from C-615 Lagoon to Outfall 011, 011, 012, 013 and 016.

1. Test Requirements

- A. The permittee shall perform a 48-hour static toxicity test with Ceriodaphnia sp. and a 48-hour static toxicity test with fathead minnow (Pimephales promelas). Tests shall be conducted on each of two grab samples taken over a 24-hour period (e.g. discrete sample 1 taken at 9:00am, sample 2 taken at 9:00pm) for Outfall 006 all other outfalls shall be a single grab. Tests shall be conducted with appropriate replicates of 100% effluent, a control and a minimum of four evenly spaced serial dilutions of 100% effluent. If the permit limit is greater than 77% ($TU_a < 1.3$), then one dilution must be 100%. For all other conditions, two dilutions must be above the permit concentration and two below. Testing of the effluent shall be initiated within 36 hours of each sample collection. Controls shall be conducted concurrently with effluent testing using a synthetic water. The analysis will be deemed reasonable and good only if control survival is 90% or greater in test organisms held in synthetic water. Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period (i.e. monthly or quarterly). Noncompliance with the toxicity limit will be demonstrated if the LC_{50} is less than 100% effluent.
- B. Tests shall be conducted on both species, once every quarter or at a frequency to be determined by the Division of Water.

If after at least six quarters of testing, it can be determined that Ceriodaphnia or the fathead minnow is more sensitive, a request for testing only that organism can be made to the Division. Upon approval, that organism can be chosen as representative and all subsequent tests can be conducted on only that organism.

2. Reporting Requirements

Results of all tests conducted with any organism shall be reported according to the most recent format provided by the Division of Water. Test results shall be submitted to the Division of Water with the next regularly scheduled discharge monitoring report.

3. Acute Toxicity

- A. If noncompliance with the toxicity limit occurs (the LC_{50} is less than 100% effluent), the permittee must conduct a second test within 10 days of the first failure. This test will be used in evaluating the persistence of the toxic event and the possible need for a toxics reduction evaluation (TRE).

If the second test demonstrates noncompliance with the toxicity limit, the permittee will be required to perform either of the options listed below. The Division must be notified of the option selected within 5 days of the failure of this second test.

1) Accelerated Testing

Complete four (4) tests within 60 days of selection of this option to evaluate the frequency and degree of toxicity. The results of the two tests specified in Section 3.A and of the four additional tests will be used for purposes of this evaluation.

If results from 2 of any 6 tests show a significant noncompliance with the acute limit (>1.2 times the TU_a), or results from 4 of any 6 tests show acute toxicity (as defined in 1.A), a Toxicity Reduction Evaluation (TRE) will be required. The Division reserves the right to require a TRE in situations of recurring toxicity.

2) Toxicity Reduction Evaluation (TRE)

If it is determined that a TRE is required, a plan and implementation schedule must be submitted to the Division within 30 days of notification. The TRE shall include appropriate measures such as in-plant controls, additional treatment, or changes in the operation of the wastewater discharge to meet permit conditions. The TRE protocol shall follow that outlined in the most recent edition of EPA's guidance manual for conducting TRE's.

- B. If a violation of the toxicity limit occurs, different or more stringent monitoring requirements may be imposed in lieu of the normal requirements of this permit for whatever period of time is specified by the Division of Water. The Division reserves the right to require additional testing or a TRE in situations of recurring toxicity.

4. Test Methods

All test organisms, procedures, and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms, EPA-600/4-90/027F (4th edition) or the most recently published edition of this publication.

PART V

BEST MANAGEMENT PRACTICES

SECTION A. GENERAL CONDITIONS

1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle or discharge any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act, oil, as defined in Section 311(a)(1) of the Act, and any pollutant listed as hazardous under Section 311 of the Act and who have ancillary manufacturing operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant in a reportable quantity, or (2) an environmental emergency, as defined in KRS 224.01-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

2. BMP Plan

The permittee shall maintain a Best Management Practices (BMP) plan consistent with 401 KAR 5:065, Section 2(10) pursuant to KRS 224.70-110, which prevents, or minimizes the potential for, the release of "BMP pollutants" from ancillary activities through plant site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage. Modifications of the BMP Plan shall be in accordance with the requirements of Sections 8, 9 and 10 of this Part.

3. Implementation

The plan shall continue in effect and shall be modified as necessary.

4. General Requirements

The BMP plan shall:

- a. Be documented in narrative form, and shall include any necessary plot plans, drawings or maps.
- b. Establish specific objectives for the control of toxic and hazardous pollutants.
 - (1) Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.
 - (2) Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants", the plan should include a prediction of the direction, rate of flow and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.

- c. Establish specific best management practices to meet the objectives identified under Paragraph b of this section, addressing each component or system capable of causing a release of "BMP pollutants."
- d. Include any special conditions established in part B of this section.
- e. Be reviewed by plant engineering staff and the plant manager.

5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document" and shall include the following baseline BMP's as a minimum.

- a. BMP Committee
- b. Reporting of BMP Incidents
- c. Risk Identification and Assessment
- d. Employee Training
- e. Inspections and Records
- f. Preventive Maintenance
- g. Good Housekeeping
- h. Materials Compatibility
- i. Security
- j. Materials Inventory

6. SPCC Plans

The BMP plan may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Act and 40 CFR Part 151, and may incorporate any part of such plans into the BMP plan by reference.

7. Hazardous Waste Management

The permittee shall assure the proper management of solids and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq). Management practices required under RCRA regulations shall be referenced in the BMP plan.

8. Documentation

The permittee shall maintain a description of the BMP plan at the facility and shall make the plan available to representatives of the Division of Water upon request. Copies of modified BMP Plans shall be submitted within thirty (30) days of completion to the following:

Division of Water
Paducah Regional Office
4500 Clarks River Road
Paducah, Kentucky 42003
ATTN: Mr. Jeff Cummins

Kentucky Natural Resources and
Environmental Protection Cabinet
Dept. for Environmental Protection
Division of Water
Inventory & Data Management
14 Reilly Road, Frankfort Office Park
Frankfort, Kentucky 40601

9. BMP Plan Modification

The permittee shall amend the BMP plan whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in the release of "BMP pollutants."

10. Modification for Ineffectiveness

If the BMP plan proves to be ineffective in achieving the general objective of preventing the release of "BMP pollutants" then the specific objectives and requirements under Paragraphs b and c of Section 4, the permit and/or the BMP plan shall be subject to modification to incorporate revised BMP requirements. If at any time following the issuance of this permit, the BMP plan is found to be inadequate pursuant to a state or federal site inspection or plan review, the plan shall be modified to incorporate such changes necessary to resolve the concerns.

SECTION B. SPECIFIC CONDITIONS

Periodically Discharged Wastewaters Not Specifically Covered By Effluent Conditions
The USEC shall include in this BMP plan procedures and controls necessary for the handling of periodically discharged uncontaminated wastewaters such as meter calibration, fire protection, hydrostatic testing water, water associated with demolition projects, etc. Contaminated wastewaters shall be sent to the appropriate wastewater treatment facilities.



COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
14 REILLY RD
FRANKFORT KY 40601

FACT SHEET

**KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT TO DISCHARGE TREATED WASTEWATER
INTO WATERS OF THE COMMONWEALTH**

KPDES No.: KY0102083 Permit Writer: Larry Sowder Date: January 8, 1998

1. **SYNOPSIS OF APPLICATION**

a. Name and Address of Applicant

United States Enrichment Corporation (USEC)
Two Democracy Center
6903 Rockledge Drive
Bethesda, Maryland 20817

b. Facility Location

United States Enrichment Corporation
Paducah Gaseous Diffusion Plant (PGDP)
5600 Hobbs Road
Paducah, McCracken County, Kentucky

c. Description of Applicant's Operation

USEC produces enriched uranium using the gaseous diffusion process (SIC Code 2819 - Fissionable material production) at PGDP using facilities leased from the United States Department of Energy (USDOE). USDOE remains the owner of the facility and has a separate permit for the CERCLA and National Priority Listed Superfund Site cleanups being conducted at the site.

d. Production Capacity of Facility

The EPA has not developed effluent guidelines for point source discharges associated fissionable material production.

(Disk #25/vb)



e. Description of Existing Pollution Abatement Facilities

- Outfall 002 - Untreated storm water runoff from the C-337/337-A Cascade Building, C-360 Toll Transfer Facility and C-637 Pump House is commingled with untreated combined wastestreams of once-through cooling waters, steam condensate and miscellaneous wastewaters from the C-337/337-A Cascade Building, C-360 Toll Transfer Facility and C-637 Pump House when Lift Station 002 is bypassed due to failures, maintenance or rainfall events of 0.5 inches or greater. During normal operation, the combined wastewaters are sent to the C-617 Lagoon for treatment.
- Outfall 004 - The combined wastewaters of domestic sewage, laboratory wastes (C-710 Laboratory), landfill leachate (C-746-K,S,T & U Landfills), miscellaneous wastewaters (C-750 Garage, PGDP Medical Group's X-ray, C-620 Air Plant, C-728 Motor Cleaning Facility and fire protection water) receive treatment in the C-615 Sewage Treatment Plant consisting of grinding, sedimentation, trickling filtration, anaerobic digestion, disinfection, dechlorination, drying beds and landfill prior to commingling with untreated storm water runoff and discharge to Outfall 008.
- Outfall 006 - The wastewaters from the water treatment plant receive treatment consisting of sedimentation prior to commingling with untreated storm water runoff.
- Outfall 008 - The combined wastestreams of once-through cooling water, steam condensate and miscellaneous wastewaters from buildings C-310, C-331, C-400, C-409, C-600 and C-720, wastewaters from C-600 Steam Plant, and wastewaters from C-720 and C-724 Paint Spray Booths receive dechlorination. The additional miscellaneous wastewaters of cylinder wash solutions, hand table solutions, decontamination spray booth, metal bearing wastes, hazardous wastes, and miscellaneous contaminated wastes are treated by chemical precipitation and when necessary ion exchange. These treated wastestreams are then commingled with untreated storm water runoff from buildings C-402, C-410, C-411, C-420, C-721, C-723, C-727, C-728, C-729, C-741, C-742, C-743 and C-744 and the treated wastewaters and untreated storm water runoff from Outfall 004.
- Outfall 009 - Dechlorination and neutralization are provided to the combined wastestreams of once-through cooling waters, steam condensate and miscellaneous wastewaters from the buildings C-310, C-331 and C-720 prior to commingling with untreated storm water runoff from buildings C-100, C-101, C-102, C-200, C-212, C-300, C-320, C-302, C-710, C-750 and parking lots C-810 and C-811.

- Outfall 010 - Untreated storm water runoff from the C-531 Switchyard and House and the C-331 Cascade Building is commingled with untreated combined wastestreams of once-through cooling waters, steam condensate and miscellaneous wastewaters from the C-331 Cascade Building when Lift Station 010 is bypassed due to failures, maintenance or rainfall events of 0.5 inches or greater and effluent from the C-617 Lagoon. During normal operation the untreated combined wastewaters are sent to the C-617 Lagoon for treatment consisting of dechlorination, neutralization and sedimentation.
- Outfall 011 - Untreated storm water runoff from the C-533 Switchyard and C-315, C-331, C-333, C-340, C-532 and C-533 buildings is commingled with untreated combined wastestreams of once-through cooling waters, steam condensate and miscellaneous wastewaters from the C-315, C-331 and C-333 Cascade Buildings when Lift Station 011 is bypassed due to failures, maintenance or rainfall events of 0.5 inches or greater and periodic discharges of effluent from the C-617 Lagoon when Lift Station 010 is out for maintenance. During normal operation the combined wastewaters are sent to the C-617 Lagoon for treatment.
- Outfall 012 - Untreated storm water runoff from the C-533 Switchyard and House, C-333/333-A Cascade Building and C-633 Pump House is commingled with untreated combined wastestreams of once-through cooling waters, steam condensate and miscellaneous wastewaters from the C-333/333-A Cascade Building when Lift Station 012 is bypassed due to failures, maintenance or rainfall events of 0.5 inches or greater. During normal operation the combined wastewaters are sent to the C-617 Lagoon for treatment.
- Outfall 013 - Untreated storm water runoff from the southeast corner of the plant.
- Outfall 016 - Fire fighting training waters are dechlorinated prior to commingling with storm water runoff from the southwest corner of the plant.

f. Permitting Action

First issuance of a permit for an existing source facility as a result of the separation of activities at the site.

2. RECEIVING WATERS

a. Receiving Waters Name

Outfalls 002 and 010 thru 013 are to Little Bayou Creek at mile points 4.6, 4.8, 5.0, 5.3 and 5.6, respectively.

Outfall 004 is an internal discharge to Outfall 008.

Outfalls 006, 008, 009 and 016 are to Big Bayou Creek at mile points 6.0, 6.3, 6.8 and 6.6, respectively.

b. Stream Segment Use Classifications

Big Bayou and Little Bayou Creeks are classified as Warmwater Aquatic Habitat and Primary/Secondary Contact Recreation.

c. Stream Low Flow Condition

Receiving Stream Flows	Point of Discharge		Point of Intake
	Big Bayou Creek	Little Bayou Creek	(Cairo, Illinois Ohio River)
7Q10	0.00 cfs	0.00 cfs	46,300 cfs
Harmonic Mean	0.50 cfs	0.10 cfs	198,238 cfs

d. Water Quality Limited or Effluent Limited

Big Bayou and Little Bayou Creeks are designated as Water Quality Limited.

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 002 - Lift Station 002 bypass and storm water runoff.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.82	7.11	Report	Report	401 KAR 5:065, Section 2(8)
Discharge Temperature (°F)	55 (winter)	81 (summer)	89	Report	401 KAR 5:031, Section 4
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	BDL	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.19	0.29	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	103	199	Report	Report	401 KAR 5:065, Section 2(8)
Acute Toxicity (TU _a)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5 401 KAR 5:031, Sections 3 & 4
pH (standard units)	7.3 (min)	8.9	6.0 (min)	9.0 ¹	401 KAR 5:031, Section 4
Total Recoverable Metals ²	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application

BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 004 - C-615 Sewage Treatment Plant and storm water runoff.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.34	0.46	Report	Report	401 KAR 5:065, Section 2(8)
Carbonaceous Biochemical Oxygen Demand (5-day) (mg/l)	8.45	19	30	45	401 KAR 5:045, Section 3
Fecal Coliform Bacteria (#/100 ml)	52	600	200	400	401 KAR 5:045, Section 4.
pH (standard units)	7.2(min)	8.9	6.0(min)	9.0	401 KAR 5:045, Section 4.

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 006 - C-611 Water Treatment Plant.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.79	2.2	Report	Report	401 KAR 5:065, Section 2(8)
Total Suspended Solids (mg/l)	17.7	42	30	50	401 KAR 5:080, Section 1(2)(c)2
Oil & Grease (mg/l)	BDL	6.1	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	BDL	Report	Report	401 KAR 5:031, Section 4
Hardness (as mg/l CaCO ₃)	70.6	90	Report	Report	401 KAR 5:065, Section 2(8)
Acute Toxicity (TU _a)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5
					401 KAR 5:031, Sections 3 & 4
pH (standard units)	8.0(min)	10.0	6.0(min)	9.0	401 KAR 5:031, Section 4
Total Recoverable Metals ²	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²Total Recoverable Metals means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application

BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 008 - Combined wastestreams of once-through cooling water, steam condensate and miscellaneous wastewaters, uranium contaminated solution, hazardous wastes, storm water runoff and Outfall 004 (C-615 Sewage Treatment Plant and storm water runoff).

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	1.22	35.74	Report	Report	401 KAR 5:065, Section 2(8)
Discharge Temperature (°F)	61(winter)	86(summer)	89	Report	401 KAR 5:031, Section 4
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	0.47	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.50	0.75	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	67.5	100	Report	Report	401 KAR 5:065, Section 2(8)
Chronic Toxicity (TU _c)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5
					401 KAR 5:031, Sections 3 & 4
pH (standard units)	6.4 (min)	7.9	6.0(min)	9.0 ¹	401 KAR 5:031, Section 4
Total Recoverable Metals ²	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application

BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 009 - Combined wastestreams of once-through cooling waters, steam condensate, miscellaneous wastewaters and storm water runoff.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.35	2.67	Report	Report	401 KAR 5:065, Section 2(8)
Discharge Temperature (°F)	64 (winter)	84 (summer)	89	Report	401 KAR 5:031, Section 4
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	0.47	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.15	0.38	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	79	137	Report	Report	401 KAR 5:065, Section 2(8)
Chronic Toxicity (TU _c)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5 401 KAR 5:031, Sections 3 & 4
pH (standard units)	7.1 (min)	8.3	6.0 (min)	9.0 ¹	401 KAR 5:031, Section 4
Total Recoverable Metals ²	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application
BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 010 - Lift Station 010 bypass and storm water runoff and/or C-617 Lagoon effluent unless diverted to Outfall 011.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.56	1.33	Report	Report	401 KAR 5:065, Section 2(8)
Discharge Temperature (°F)	72(winter)	93(summer)	89	Report	401 KAR 5:031, Section 4
Oil & Grease (mg/l)	BDL	5.4	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	0.47	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.27	0.46	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	78	110	Report	Report	401 KAR 5:065, Section 2(8)
Chronic Toxicity (TU _c) ²	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5 401 KAR 5:031, Sections 3 & 4
pH (standard units)	7.1 (min)	9.3	6.0(min)	9.0 ¹	401 KAR 5:031, Section 4
Total Recoverable Metals ³	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²Chronic Toxicity requirements shall be applicable when the effluent from the C-617 Lagoon is discharged through this outfall. On those occasions when the C-617 Lagoon effluent is diverted to outfall 011 for an extended period of time, Acute Toxicity requirements of 1.00 TU_a shall apply in lieu of the Chronic Toxicity.

³TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application
BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 011 - Lift Station 011 bypass, storm water runoff and C-617 Lagoon effluent when diverted from Outfall 010.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.34	4.25	Report	Report	401 KAR 5:065, Section 2(8)
Discharge Temperature (°F)	48 (winter)	79 (summer)	89	Report	401 KAR 5:031, Section 4
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	BDL	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.16	0.30	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	114	210	Report	Report	401 KAR 5:065, Section 2(8)
Acute Toxicity (TU _a) ²	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5 401 KAR 5:031, Sections 3 & 4
pH (standard units)	7.0 (min)	8.3	6.0 (min)	9.0 ¹	401 KAR 5:031, Section 4
Total Recoverable Metals ³	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	0.027	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²Acute Toxicity requirements shall be applicable unless effluent from the C-617 Lagoon is discharged through this outfall. During periods when the C-617 Lagoon effluent is diverted to this outfall for extended periods of time, Chronic Toxicity requirements of 1.00 TU_c shall apply.

³TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application

BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 012 - Lift Station 012 bypass and storm water runoff.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.42	3.22	Report	Report	401 KAR 5:065, Section 2(8)
Discharge Temperature (°F)	54(winter)	79(summer)	89	Report	401 KAR 5:031, Section 4
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	BDL	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.144	0.26	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	144	182	Report	Report	401 KAR 5:065, Section 2(8)
Acute Toxicity (TU _a)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5
					401 KAR 5:031, Sections 3 & 4
pH (standard units)	7.1(min)	8.0	6.0(min)	9.0 ¹	401 KAR 5:031, Section 4
Total Recoverable Metals ²	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹The maximum pH of 9.0 standard units shall become effective October 1, 1998. Until that time, the maximum pH shall not exceed 10.5 standard units.

²TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application

BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 013 - Surface runoff from the southeast corner of the plant.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.72	8.27	Report	Report	401 KAR 5:065, Section 2(8)
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	BDL	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.144	0.26	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	226	380	Report	Report	401 KAR 5:065, Section 2(8)
Acute Toxicity (TU _a)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5
pH (standard units)	7.1(min)	9.1	6.0(min)	9.0	401 KAR 5:031, Sections 3 & 4
Total Recoverable Metals ¹	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application
BDL - Below Detection Limit

3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge - Outfall 016 - Fire fighting training waters are dechlorinated prior to commingling with storm water runoff from the southwest corner of the plant.

<u>Effluent Characteristics</u>	<u>Reported Discharge</u>		<u>Proposed Limits</u>		<u>Applicable Water Quality Criteria and/or Effluent Guidelines</u>
	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	
Flow (MGD)	0.19	1.56	Report	Report	401 KAR 5:065, Section 2(8)
Oil & Grease (mg/l)	BDL	BDL	10	15	401 KAR 5:080, Section 1(2)(c)2
Total Residual Chlorine (mg/l)	BDL	BDL	Report	Report	401 KAR 5:031, Section 4
Total Phosphorous (mg/l)	0.144	0.26	1.0	1.0	401 KAR 5:080, Section 1(2)(c)2
Hardness (as mg/l CaCO ₃)	154	240	Report	Report	401 KAR 5:065, Section 2(8)
Acute Toxicity (TU _a)	N/R	N/R	Report	1.00	401 KAR 5:029, Section 5
					401 KAR 5:031, Sections 3 & 4
pH (standard units)	6.6(min)	7.7	6.0(min)	9.0	401 KAR 5:031, Section 4
Total Recoverable Metals ¹	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Polychlorinated Biphenyls (µg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Trichloroethylene (mg/l)	BDL	BDL	Report	Report	401 KAR 5:065, Section 2(8)
Uranium, Total (mg/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)
Technetium-99 (pCi/l)	N/R	N/R	Report	Report	401 KAR 5:065, Section 2(8)

¹TRM means iron and those metals listed on Form C, Part C - Metals, Cyanide and Total Phenols.

N/R - Not Reported on Renewal Application

BDL - Below Detection Limit

4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Numbers

002 - Lift Station 002 bypass and storm water runoff

011 - Lift Station 011 bypass, storm water runoff and C-617 Lagoon effluent when diverted from Outfall 010.

012 - Lift Station 012 bypass and storm water runoff

b. Effluent Characteristics

Flow	Total Residual Chlorine	Total Uranium
Discharge Temperature	Total Phosphorous	Technetium-99
Oil & Grease	Acute Toxicity	pH
Polychlorinated Biphenyls	Hardness	
Trichloroethylene	Total Recoverable Metals	

c. Pertinent Factors

EPA has not developed effluent guidelines for point source discharges associated with the production of enriched uranium using the gaseous diffusion process (SIC Code 2819 - Fissionable material production).

d. Monitoring Requirements

PARAMETER	FREQUENCY	SAMPLE TYPE
Flow	1/Month	Instantaneous
Discharge Temperature	1/Month	Grab
Oil & Grease	1/Month	Grab
Polychlorinated Biphenyls	1/Month	Grab
Trichloroethylene	1/Month	Grab
Total Residual Chlorine	1/Month	Grab
Total Phosphorous	1/Month	Grab
pH	1/Month	Grab
Hardness	1/Month	Grab
Acute Toxicity ¹	1/Quarter	Grab
Total Uranium	1/Quarter	Grab
Technetium-99	1/Quarter	Grab
Total Recoverable Metals	1/Quarter	Grab

¹ On those occasions when the C-617 Lagoon effluent is diverted from Outfall 010 to Outfall 011 for extended periods of time, Chronic Toxicity requirements of 1.00 TU_a shall apply in lieu of the Acute Toxicity to Outfall 011. On such occasions, three 24-Hr Composite samples shall be collected on a monthly basis.

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Flow, Hardness, Total Recoverable Metals, Total Residual Chlorine, Polychlorinated Biphenyls, Trichloroethylene, Total Uranium, and Technetium-99
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8). The limits for Total Residual Chlorine have been removed as a result of the permittee demonstrating that no reasonable potential for an instream violation of the water quality standard will occur.

Discharge Temperature and pH

The limits for these parameters are consistent with the requirements of 401 KAR 5:031, Section 4.

Oil & Grease and Total Phosphorous

The limits for these parameters are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) of the "Best Available Technology Economically Achievable" (BAT) requirements for this type of discharge.

Acute (Chronic) Toxicity

The limits for these parameters are consistent with the requirements of 401 KAR 5:029, Section 5 and 401 KAR 5:031, Sections 3 & 4.

Nondegradation

The conditions of 401 KAR 5:029, Section 2(1) and (3) have been satisfied by this permit action. A review under Section 2(2) and (4) is not applicable.

4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

004 - C-615 Sewage Treatment Plant and storm water runoff.

b. Effluent Characteristics

Flow	Fecal Coliform Bacteria
pH	Carbonaceous Biochemical Oxygen Demand, 5-day

c. Pertinent Factors

Outfall 004 is an internal monitoring point that discharges to Outfall 008.

d. Monitoring Requirements

PARAMETER	FREQUENCY	SAMPLE TYPE
Flow	2/Month	Instantaneous
Carbonaceous Biochemical Oxygen Demand, 5-day	2/Month	Grab
Fecal Coliform Bacteria	2/Month	Grab

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Flow

The monitoring requirements for this parameter are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Carbonaceous Biochemical Oxygen Demand

The limits for this parameter are consistent with the requirements of 401 KAR 5:045, Section 3.

Fecal Coliform Bacteria

The limits for this parameter are consistent with the requirements of 401 KAR 5:045, Section 4.

4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

006 - C-611 Water Treatment Plant

b. Effluent Characteristics

Flow	Total Suspended Solids	Oil & Grease
Total Residual Chlorine	Acute Toxicity	Total Recoverable Metals
Hardness	pH	

c. Pertinent Factors

EPA has not developed effluent guidelines for point source discharges associated with water treatment plants.

d. Monitoring Requirements

PARAMETER	FREQUENCY	SAMPLE TYPE
Flow	1/Week	Instantaneous
Total Suspended Solids	1/Week	Grab
Oil & Grease	1/Week	Grab
Total Residual Chlorine	1/Month	Grab
pH	1/Week	Grab
Hardness	1/Month	Grab
Acute Toxicity	1/Quarter	2 Grab
Total Recoverable Metals ¹	1/Quarter	Grab

¹When reporting the results for this series of pollutants, an aggregate concentration shall be entered on the DMR and the concentration of each of the thirteen metals covered by this parameter shall be attached to the DMR.

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Flow, Hardness, Total Residual Chlorine, and Total Recoverable Metals

The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8). The limits for Total Residual Chlorine have been removed as a result of the permittee demonstrating that no reasonable potential for an instream violation of the water quality standard will occur.

pH

The limits for this parameter are consistent with the requirements of 401 KAR 5:031, Section 4.

Total Suspended Solids and Oil & Grease

The limits for these parameters are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) of the "Best Available Technology Economically Achievable" (BAT) requirements for this type of discharge.

Acute Toxicity

The limits for this parameter are consistent with the requirements of 401 KAR 5:029, Section 5 and 401 KAR 5:031, Sections 3 & 4.

Nondegradation

The conditions of 401 KAR 5:029, Section 2(1) and (3) have been satisfied by this permit action. A review under Section 2(2) and (4) is not applicable.

4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Numbers

008 - Combined wastestreams of once-through cooling waters, steam condensate, miscellaneous wastewaters, uranium contaminated solution, hazardous wastes, storm water runoff and Outfall 004 (C-615 Sewage Treatment Plant and storm water runoff).

009 - Combined wastestreams of once-through cooling waters, steam condensate, miscellaneous wastewaters and storm water runoff.

010 - Lift Station 010 bypass and storm water runoff and/or C-617 Lagoon effluent unless diverted to Outfall 011.

b. Effluent Characteristics

Flow	Discharge Temperature	Oil & Grease
Total Residual Chlorine	Chronic Toxicity	Total Recoverable Metals
Hardness	pH	Polychlorinated Biphenyls
Trichloroethylene	Total Phosphorous	Total Residual Chlorine
Total Uranium	Technetium-99	

c. Pertinent Factors

EPA has not developed effluent guidelines for point source discharges associated with the production of enriched uranium using the gaseous diffusion process (SIC Code 2819 - Fissionable material production).

d. Monitoring Requirements

PARAMETER	FREQUENCY	SAMPLE TYPE
Flow	1/Week	Instantaneous
Discharge Temperature	1/Week	Grab
Oil & Grease	1/Week	Grab
Total Residual Chlorine	1/Month	Grab
Total Phosphorous	1/Week	Grab
pH	1/Week	Grab
Hardness	1/Month	Grab
Polychlorinated Biphenyls	1/Month	Grab
Trichloroethylene	1/Month	Grab
Chronic Toxicity ¹	1/Quarter	3 24-Hr Composites
Total Recoverable Metals ²	1/Quarter	Grab
Total Uranium	1/Quarter	Grab
Technetium-99	1/Quarter	Grab
¹ On those occasions when the C-617 Lagoon effluent is diverted from Outfall 010 to Outfall 011 for extended periods of time, Acute Toxicity requirements of 1.00 TU _a shall apply in lieu of the Chronic Toxicity to Outfall 010. On such occasions, grab samples shall be collected on a monthly basis.		
² When reporting the results for this series of pollutants, an aggregate concentration shall be entered on the DMR and the concentration of each of the thirteen metals covered by this parameter shall be attached to the DMR.		

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Flow, Hardness, Total Recoverable Metals, Total Residual Chlorine, Polychlorinated Biphenyls, Trichloroethylene, Total Uranium, and Technetium-99
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8). The limits for Total Residual Chlorine have been removed as a result of the permittee demonstrating that no reasonable potential for an instream violation of the water quality standard will occur.

Discharge Temperature and pH

The limits for these parameters are consistent with the requirements of 401 KAR 5:031, Section 4.

Oil & Grease and Total Phosphorous

The limits for these parameters are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) of the "Best Available Technology Economically Achievable" (BAT) requirements for this type of discharge.

Chronic (Acute) Toxicity

The limits for these parameters are consistent with the requirements of 401 KAR 5:029, Section 5 and 401 KAR 5:031, Sections 3 & 4.

Nondegradation

The conditions of 401 KAR 5:029, Section 2(1) and (3) have been satisfied by this permit action. A review under Section 2(2) and (4) is not applicable.

4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Numbers

013 - Surface runoff from the southeast corner of the plant.

016 - Fire fighting training waters are dechlorinated prior to commingling with storm water runoff from the southwest corner of the plant.

b. Effluent Characteristics

Flow	Oil & Grease	Polychlorinated Biphenyls
Trichloroethylene	Acute Toxicity	Total Recoverable Metals
Hardness	Total Uranium	Technetium-99
pH		

c. Pertinent Factors

None

d. Monitoring Requirements

PARAMETER	FREQUENCY	SAMPLE TYPE
Flow	1/Month	Instantaneous
Oil & Grease	1/Month	Grab
pH	1/Month	Grab
Hardness	1/Month	Grab
Polychlorinated Biphenyls	1/Month	Grab
Trichloroethylene	1/Month	Grab
Acute Toxicity	1/Quarter	Grab
Total Recoverable Metals ¹	1/Quarter	Grab
Total Uranium	1/Quarter	Grab
Technetium-99	1/Quarter	Grab

¹When reporting the results for this series of pollutants, an aggregate concentration shall be entered on the DMR and the concentration of each of the thirteen metals covered by this parameter shall be attached to the DMR.

e. Justification of Limits

The Kentucky Administrative Regulations (KARs) cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes (KRSs).

Flow, Hardness, Total Recoverable Metals, Polychlorinated Biphenyls, Trichloroethylene, Total Uranium, and Technetium-99

The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

pH

The limits for this parameter are consistent with the requirements of 401 KAR 5:031, Section 4.

Oil & Grease

The limits for this parameter are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) of the "Best Available Technology Economically Achievable" (BAT) requirements for this type of discharge.

Acute Toxicity

The limits for this parameter are consistent with the requirements of 401 KAR 5:029, Section 5 and 401 KAR 5:031, Sections 3 & 4.

Nondegradation

The conditions of 401 KAR 5:029, Section 2(1) and (3) have been satisfied by this permit action. A review under Section 2(2) and (4) is not applicable.

5. PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS

Permittee shall comply with the effluent limitations by the effective date of the permit.

6. PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE

Best Management Practices (BMP) Plan

Pursuant to 401 KAR 5:065, Section 2(10) a BMP requirement shall be included: to control or abate the discharge of pollutants from ancillary areas containing toxic or hazardous substances or those substances which could result in an environmental emergency; where numeric effluent limitations are infeasible; or to carry out the purposes and intent of KRS 224. The facility has several areas where support activities occur which have a potential of the discharge of such substances through storm water runoff or spillage. Some of these areas will drain to present wastewater treatment plants, others will not.

Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical, not previously reported, for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals, to the Division of Water for review and establishment of appropriate control parameters.

Priority Pollutants

During the term of the permit, the permittee shall conduct at least two (2) complete scans for those pollutants listed on Form C, Section V, Part C from each designated outfall and shall be submitted to the Division of Water.

7. PERMIT DURATION

Five (5) Years.

8. THE ADMINISTRATIVE RECORD

The Administrative Record, including application, draft permit fact sheet, public notice, comments received and additional information is available by writing the Division of Water at 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601.

9. REFERENCED AND CITED DOCUMENTS

All materials and documents referenced or cited in this fact sheet are either a part of the Administrative Record as described in item 8 on this page or readily available at the Division of Water.

10. CONTACT

For further information contact the individual identified on the Public Notice or the Permit Writer - Larry Sowder at (502) 564-2225, extension 472.

11. PUBLIC NOTICE INFORMATION

Please refer to the attached Public Notice for details regarding the procedures for a final permit decision, deadline for comments and other information required by KAR 5:075, Section 4(2)(e).