Appendix I

Leachate Collection and Removal System Operating Plan

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I1.0 Purpose

The purpose of this document is to provide information necessary for the proper operation and maintenance of the Leachate Collection and Removal System (LCRS). Specifically, the subsequent sections will provide the information relating to the management of leachate, maintenance and calibration of liquid level instruments, general equipment maintenance, and reporting requirements.

I2.0 Facility Description

The LCRS facility is located at the north end of the disposal cell and consists of an 11,500-gallon horizontal below-grade pipe storage sump, four pipes from the disposal cell (east and west primary and east and west secondary) to convey the leachate to the sump, liquid level monitoring instruments, and other related equipment. An 8-foot chain link and barbed wire fence surrounds the sump area. An approximately 1,200-square-foot building houses supplies, instrumentation and a water treatment system. This building is the LCRS Support Building and is located adjacent to the sump on the north side.

The sump has a secondary containment system that provides an additional barrier to the environment and a means to collect leakage and infiltration. The containment is known as the "burrito" and consists of a high density polyethylene (HDPE) liner system that totally encloses the primary and secondary leachate collection systems as well as the sump.

A 4-inch-diameter HDPE pipeline connects the LCRS Support Building to the Missouri River (NPDES outfall 007). This pipeline was extended to support the LCRS treatment system before approval was obtained to haul leachate to the Metropolitan St. Louis Sewer District (MSD), and is available for use if the treatment system contingency plan is implemented or if the NPDES permit is modified.

A drawing of the LCRS system is included as Attachment 1.

I3.0 Leachate Management

I3.1 Leachate Flow and Level Monitoring

The LCRS has been equipped to measure the volume of the primary and secondary leachate generated from the disposal cell. The east and west secondary leachate is monitored separately and the data are displayed (CTR [Counter] 401 and CTR 403) and recorded automatically at the instrumentation cabinet located in the LCRS Support Building. All three volumes (primary, east secondary, west secondary) are uploaded to the System Operation and Analysis at Remote Site (SOARS) database. The SOARS uploads LCRS data remotely and then allows operators to access data via the internet to retrieve and analyze the transferred data. At Weldon Spring the primary leachate level and east and west secondary counter data are recorded and transferred by modem to the SOARS. SOARS then estimates the primary leachate volume which is reviewed

for any potential anomolies or problems with the system. The SOARS data is used to calculate monthly totals to determine the overall performance of the LCRS.

A resistance-type probe (LS-1) installed in the sump monitors the total leachate volume. This information is digitally displayed at the instrumentation cabinet (LI-1) in the LCRS Support Building and uploaded to SOARS as described above. The primary leachate volume is calculated by taking the measured volume in the sump minus the volume of secondary leachate that has accumulated, and the burrito and purge water that has been added to the sump. The primary leachate flow rate is calculated by taking the primary leachate volume (calculated above) divided by the number of days of accumulation. A dedicated resistance-type probe (LSH-3) is installed to alarm when a high level is reached in the sump. The leachate flow rate was approximately 142 gallons per day in January 2006 and continued a slow downward trend to approximately 114 gallons per day in December 2007.

The sump has a secondary containment system (burrito) capable of collecting any leachate or infiltration generated outside of the normal primary and secondary collection systems. The burrito water level is manually measured and pumped to the sump. The level probe that was previously installed has been removed to allow access to the burrito water. The burrito water is periodically pumped, and the volume is measured and composited with the leachate in the sump. The flow rate in December 2007 was approximately 6.7 gallons per day. Flow to the secondary containment system (burrito) has shown some cyclic tendencies but little correlation to the flow rates of the primary and secondary leachate. Certain flow mechanisms are intentionally created inside the disposal cell to comply with regulatory requirements (for example: overflow when leachate head exceeds one foot over the primary liner or long-term clogging of the transport pipes).

The procedure for transferring and measuring the burrito water volume is presented in Attachment 5.

I3.2 Leachate Hauling

The Weldon Spring Site (WSS) was granted approval to haul the leachate to the Metropolitan St. Louis Sewer District (MSD) Bissell Point Plant and was later granted approval to haul monitoring well purge water with the leachate (see MSD letters in Attachment 2). Purge water is water that is generated during the sampling of monitoring wells. MSD imposed a revised uranium acceptance criteria in a letter dated April 15, 2004, which required the uranium level to meet the drinking water standard of 30 μg/L (Attachment 2). Pretreatment of leachate has been periodically necessary to reduce the uranium concentration to a level below the 30 μg/L standard. MSD granted a 5-year extension in a letter dated December 14, 2006, which references the previous agreement letters (Attachment 2).

WSS hauls leachate approximately every 4 to 5 months through a contract hauler. As the daily flow rate decreases in the LCRS, the hauling frequency will also decrease. The frequency of hauling must be such that leachate is not allowed to accumulate to a point that causes damage or inundates the LCRS instrumentation. The leachate flow rate is predictable and steady. The contract hauler is responsible for hookup and pumping, hauling, and manifesting the leachate. The hauler typically uses a 3,000-gallon tank truck with an integral vacuum pump to extract and haul the leachate. WSS personnel are responsible for scheduling the haul, performing

pretreatment if necessary, providing access to the LCRS, sampling leachate, recording the volume of leachate hauled, and general oversight of the activity.

The procedure for hauling leachate is presented in Attachment 5.

I3.3 Metropolitan Sewer District Agreement and Requirements

The WSS has monitoring and reporting obligations to the MSD that are conditions of the approval for hauling leachate. These obligations include sampling the leachate hauled to MSD and a 25,000 gallon per month maximum limit. The specific requirements are presented in the letters included in Attachment 2. Reports that present volume and chemical data must be submitted to MSD for review by the 28th day of the month following a haul event. The current authorization to haul leachate is valid through December 21, 2011. To continue past that date, a new agreement must be drafted by DOE and approved by MSD.

I4.0 Leachate Characteristics and Trends

I4.1 Characteristics

The leachate meets all permitted discharge limits and goals. Manganese concentration was an initial concern but has decreased to below the NPDES permitted limit of 0.5 mg/L. Uranium concentrations averaged 19.9 pCi/L during 2006 and 16.4 pCi/L for 2007 through September. These levels are below the goal of 30 pCi/L monthly average and 100 pCi/L daily maximum limits for discharge to the Missouri River. Concentrations of all other constituents, including radionuclides, are within permit limits. The untreated leachate characterization data for 2002 through June 2007 are presented in Attachment 3.

I4.2 Trends

The leachate flow rate has been decreasing and is predicted to continue decreasing until the flow rate is essentially zero. This trend is consistent with the disposal cell design in that the cell cap/cover was designed to eliminate infiltration and subsequent leachate generation. Leachate will continue to be hauled and the flow monitored until leachate flow ceases, or circumstances change.

Manganese concentration has continued to decrease and is below the permit discharge limit. The manganese concentration average has decreased from 1.1 mg/L in 2004 to 0.45 mg/L in 2006. Average uranium concentration was 19.9 pCi/L in 2006 and decreased to an average of 16.4 pCi/L for 2007. Since September 2004 the leachate hauled to MSD has been pretreated and the uranium concentration in the pretreated leachate was between 0.88 and 2.4 pCi/L during 2006 and through September of 2007.

I4.3 LCRS Sump Methane Monitoring System

The methane monitoring system has been removed. It was determined that the system no longer provided a useful function. Methane monitoring has indicated that the passive vent system for

methane removal continues to function properly. Administrative procedures for confined space entry into the sump are in place to govern access and maintenance for the sump. See the *Health and Safety Manual* (LMS/POL/S04321) for the most current version of the confined space procedure. Confined space training will also be required of all participants. Monitoring will be conducted and the blower will remain in place to provide ventilation when confined space entry is required.

I5.0 Discharge to the Missouri River

In the event that the leachate would no longer be accepted by MSD or other acceptable alternatives are available, the treated leachate could be discharged to the Missouri River via NPDES outfall 007. The procedure for discharging through the pipeline to outfall 007 is presented in Attachment 5.

I6.0 Facility Maintenance

LCRS monitoring instrumentation should be checked no less than once per year.

I6.1 LS-1/LT-1/LI-1

I6.1.1 Calibration of LT-1

LT-1 is in the blue explosion-proof junction box located inside the LCRS cabinet (approximately 3 feet off the bottom of the cabinet, on the left side of the cabinet). LT-1 receives information from LS-1 (level sensor 1) via communication cable. LT-1 translates the LS-1 signal to a level indicator that can be read on LT-1.

LT-1 also communicates the sump water level to the digital display (LI-1) red LED indicator on the outside of the LCRS cabinet and to chart recorder CR1. LT-1 accomplishes this by driving a 4 to 20 milliamp loop, in series, through the LED indicator and through chart recorder CR1.

LS-1/LT-1/LI-1 is used to monitor and record the leachate level in the sump. This instrument should be calibrated or checked once a year. The procedure for calibrating LS-1/LT-1/LI-1 is presented in Attachment 5.

I6.2 LS-2/LT-2/LI-2

The burrito water level probe has been removed. See discussion in Section I3.1.

I7.0 Methane Detection System

The methane detection system has been removed. See discussion in Section I4.3.

I8.0 Routine Inspections and Rounds

I8.1 LCRS Inspection

The LCRS inspection should be conducted at least monthly and currently is being conducted biweekly during burrito water removal. This inspection is intended to check the status of the equipment specifically related to the sump and level monitoring equipment and verify that all equipment associated with the LCRS is working properly. This includes noting level instrument display readouts. The LCRS inspection round sheet is presented in Attachment 5.

I8.2 Equipment Maintenance

Equipment corrective and preventive maintenance should be performed as needed in accordance with the manufacturers' recommendations. The equipment manuals are located in the LCRS Support Building and in the main Administrative Building.

I9.0 Notifications and Reporting

I9.1 Metropolitan St. Louis Sewer District Reports

The reporting requirements for leachate hauled to MSD are described in Attachment 2. In general, WSS is required to present analytical data, volume hauled information, and radioactive content data for the leachate hauled during the reporting period. WSS is also required to track the sources and the total volume of purge water sent with any shipment of leachate to MSD.

I9.2 NPDES Reporting

A revised NPDES permit was issued on March 5, 2004 (Attachment 4). This permit expired on July 13, 2005, but continues to be statused as active since the DOE applied for permit renewal with the state of Missouri 6 months prior to the expiration date. A renewed permit is scheduled to be issued during early 2008. The reporting provisions for the new permit will be implemented as soon as it becomes final.

I9.3 Emergency Points of Contact

The current contractor staff located at the Weldon Spring will be responsible for providing the local, state or federal notifications in the event of an emergency in accordance with the LTS&M Plan.

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Attachment 1

LCRS Drawing

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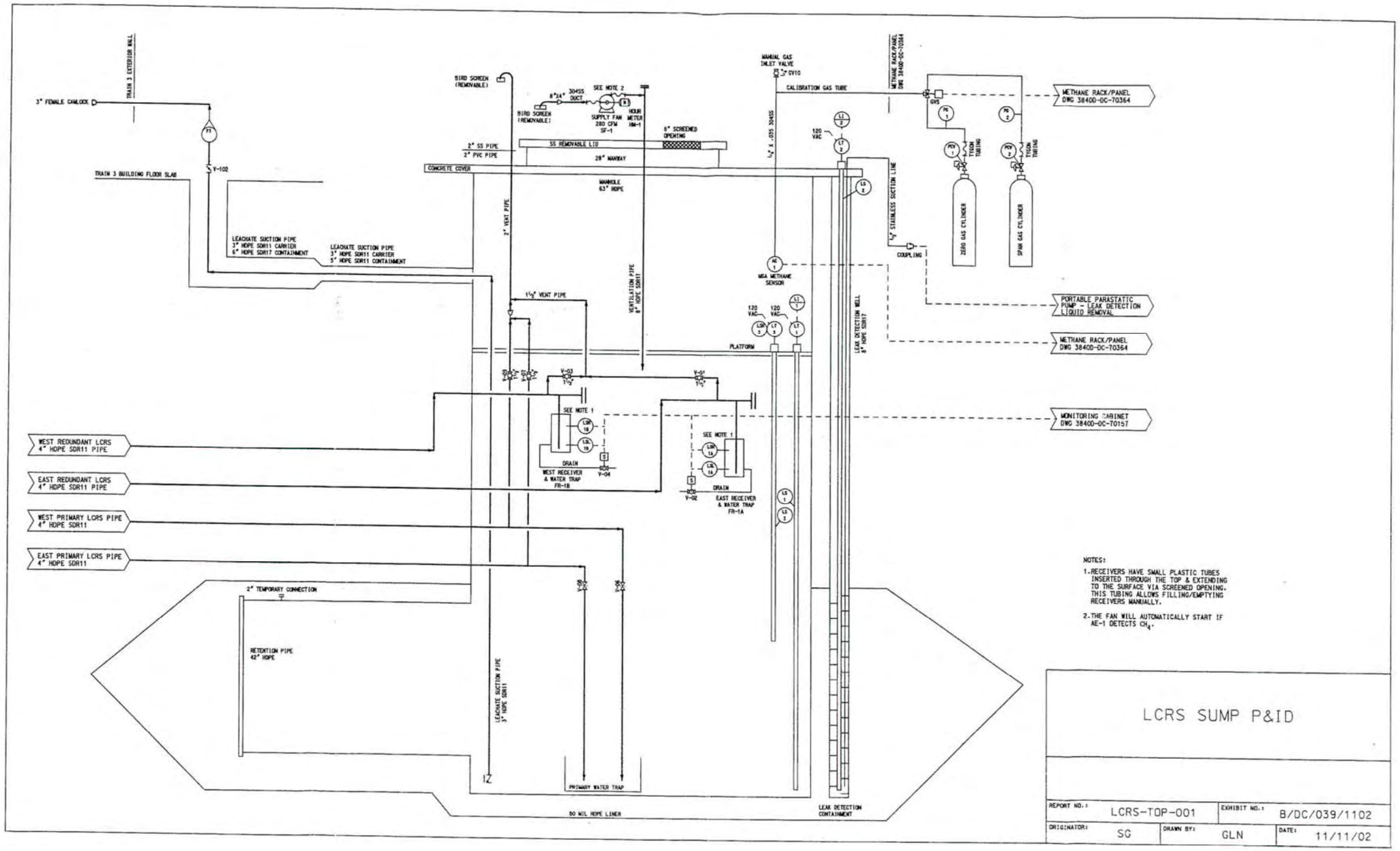
Schematic of the Leachate Collection and Removal System (LCRS)



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Attachment 2

MSD Letters

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Initial MSD Approval Letter

Metropolitan
St. Louis Sewer
District

Office of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8710
FAX (314) 436-8753

December 21, 2001

Thomas Pauling
U.S. Department of Energy
7295 Highway 94 South
St. Charles, MO 63304

Dear Mr. Pauling:

We have reviewed your application dated October 24, 2001 requesting approval to discharge up to 15,000 gallons of wastewater per month to the Metropolitan St. Louis Sewer District. This wastewater is leachate from the covered storage cell at the Weldon Spring Site Remedial Action Project (WSSRAP) located at 7295 Highway 94 South, St. Charles, Missouri. The storage cell contains waste associated with the remediation activities of former TNT production and uranium processing at the site.

Based on the analytical results, this material meets our criteria for acceptance as a hauled waste and is approved for discharge at the Bissell Point Hauled Waste Receiving Station. The material may be discharged only by a hauler having a valid MSD identification number and presenting an original, completed Hauled Waste Receipt (form HWR-S). The annual allocation for radioactivity from the WSSRAP storage cell discharging at the MSD Bissell Point Hauled Waste Receiving Station is 0.15 milliCuries (0.15 mCi/year). This approval is valid for 5 years from the date of this letter. As a condition of this approval, you must notify us of any changes which would affect the characteristics of this discharge.

You must submit monthly self-monitoring reports, analyzing for the following parameters:

Total Uranium	Total suspended solids
Thorium-228	Volatile organic priority pollutants
Thorium-230	Arsenic
Thorium-232	Barium
Radium-226	Copper
Radium-228	Iron
Americium-241	Lead
Neptunium-237	Chromium
Plutonium-238	Mercury
Plutonium-239/240	Nickel
Technetium-99	Selenium
Gross alpha	Silver
Chemical oxygen demand	Zinc

We will require that each batch of wastewater be analyzed for all the radionuclides listed above plus gross alpha. We will only require one batch of wastewater be analyzed per month for the remaining parameters. Self-monitoring reports are due 28 days after the end of each month. The frequency of the self-monitoring may be reduced in the future if the analytical results warrant.

A monthly sum of the ratios must be calculated for all radionuclides listed above, and the result must be less than 1.0 according to the Nuclear Regulatory Commission regulations in 10 CFR 20. These calculations must be included with the self-monitoring reports.

To demonstrate the solubility of the radioactive materials, as required by 10 CFR 20, you will need to provide the results of one filtered versus unfiltered test for total uranium using a 0.45 micrometer (0.45 micron) filter. This information must be included with the self-monitoring reports.

In addition to the monthly self-monitoring reports, the MSD Radioactive Materials Discharge Report (attached) must also be completed and certified. This report lists the total radioactivity discharged during the current calendar quarter to ensure compliance with the 0.15 milliCurie per year limit. These reports are due 28 days after the end of the calendar quarter.

This discharge has been approved based upon the information and sample analysis you provided, and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect, or if the conditions of this approval are violated. Also, if the discharge causes any operational or maintenance problem within the District's collection or treatment system, or results in violations of any conditions of the District's NPDES permit, MK-Ferguson Corporation and the property owner, U.S. Department of Energy, will be considered responsible for damages.

If you have any questions, please call me at (314)436-8742.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Roland A. Biehl
Environmental Associate Engineer

bv

pc Bernie Rains
Doug Mendoza
Fabian Grabski
Ed Cope
Darin Lewis
Paul Taylor
Thomas M. Siegel, P.E. Chief, Permits and Engineering – MO DNR

File: SD, Weldon Springs Site Remedial Action Plan

METROPOLITAN ST. LOUIS SEWER DISTRICT
INDUSTRIAL USER RADIOACTIVE MATERIALS DISCHARGE REPORT

PART I: IDENTIFYING INFORMATION

Company Name: _____

Permit No: _____

Premise Address: _____

Reporting Period: ☐(JAN-MAR) ☐(APR-JUNE) ☐(JULY-SEPT) ☐(OCT-DEC)

PART II: RECORD OF DISPOSAL OF RADIOACTIVE MATERIALS TO THE SEWER SYSTEM

RADIONUCLIDE	ACTIVITY DISCHARGED (millicuries)
TOTAL ACTIVITY DISCHARGED:	

PART III: CERTIFICATION STATEMENTS

Place your initials in the box under item A.
Everyone must complete the information under items A & B and sign this report.

A. CERTIFICATION OF COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

☐ I certify that to the best of my knowledge & belief, all requirements of 10 CFR Part 20.2003 and 19 CSR Part 20-10.090 governing disposal by release into sanitary sewage for material regulated by the Nuclear Regulatory Commission and the Missouri Department of Health, respectively, have been met for the period covered by this report.

B. RADIOACTIVE MATERIALS DISCHARGE REPORT CERTIFICATION

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print/type name of signing official: _____

Title: _____ Telephone: _____

Signature: _____ Date: _____

radrpt.doc 2/

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Purge Water Approval Letter from MSD

Metropolitan
St. Louis Sewer
District

Office of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8710
FAX (314) 436-8753

May 17, 2002

Steven D. Warren
MK-FERGUSON CORPORATION
7295 Highway 94 South
St. Charles, MO 63304

Dear Mr. Warren:

We have reviewed your application dated April 23, 2002 requesting approval to discharge up to 200 gallons of wastewater per month to the Metropolitan St. Louis Sewer District. This wastewater is monitoring well purge water at the Weldon Spring Site Remedial Action Project (WSSRAP) located at 7295 Highway 94 South, St. Charles, Missouri. We understand that the purge water is generated from the following monitoring wells related to the former TNT production and uranium processing at the site.

Monitoring well identification numbers:

1002	1015	OW05	2049	3028	4028
1004	1016	OW06	2050	3029	4029
1005	1027	2003	2051	3030	4030
1006	1032	2006	2052	3034	4039
1007	1048	2012	2053	3037	S004
1008	OW01	2013	2054	3038	
1009	OW02	2033	2055	3039	
1013	OW03	2045	3023	4001	
1014	OW04	2046	3024	4015	

Based on the historical analytical results of samples collected from the above referenced monitoring wells, this material meets our criteria for acceptance as a hauled waste and is approved for discharge at the Bissell Point Hauled Waste Receiving Station. The material may be discharged only by a hauler having a valid MSD identification number and presenting an original, completed Hauled Waste Receipt (form HWR-S). We understand that the purge water will be included with the leachate which is currently approved for discharge at the Bissell Point Hauled Waste Receiving Station. The annual allocation for radioactivity from the WSSRAP leachate and monitoring well purge water discharging at the MSD Bissell Point Hauled Waste Receiving Station is 0.15 milliCuries (0.15 mCi/year). This approval will expire on December 21, 2006. As a condition of this approval, you must notify us of any changes which would affect the characteristics of this discharge.

Since the monitoring well purge water will be included with the leachate, we understand that future WSSRAP self-monitoring reports will include composite sample data representing both waste streams and will identify the volumes attributable to purge water and leachate. Based on this information, all self-monitoring conditions of the December 21, 2001 leachate special discharge will remain in effect and apply to the monitoring well purge water.

This discharge has been approved based upon the information and sample analysis you provided, and is subject to the conditions stated above. This approval may be revoked by the District at any time if any of the information is found to be incorrect, or if the conditions of this approval are violated. Also, if the discharge causes any operational, maintenance or other problem within the District's collection or treatment system, or results in violations of any conditions of the District's NPDES permit, MK-Ferguson Corporation and the property owner, U.S. Department of Energy, will be considered responsible for damages or mitigative actions.

If you have any questions, please call me at (314)436-8742.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Roland A. Biehl
Environmental Associate Engineer

bv

pc Bernie Rains
Darin Lewis
Paul Taylor

File: SD, Weldon Springs Site Remedial Action Plan

Metropolitan
St. Louis Sewer
District

Office of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8710
FAX (314) 436-8753

June 28, 2002

Pamela Thompson
U.S. DEPARTMNT OF ENERGY
WELDON SPRING SITE REMEDIAL ACTION PROJECT OFFICE
7295 Highway 94 South
St. Charles, MO 63304

Dear Ms. Thompson:

We have reviewed your letter dated June 17, 2002 requesting approval to add seven monitoring wells (2014, 5303, 4006, 5304, 4031, 6301, and 4036) to the special discharge permit originally approved on May 17, 2002. The original approval was for monitoring well purge water at the Weldon Spring Site Remedial Action Project (WSSRAP) located at 7295 Highway 94 South, St. Charles, Missouri.

Based on the historical analytical results of samples collected from the above referenced monitoring wells, your request is granted. All other conditions of the original approval remain in effect.

If you have any questions, please call me at (314)436-8742.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Roland A. Biehl
Environmental Associate Engineer

FILE: SD, Weldon Spring Site Remedial Action Project (WSSRAP), 7295 Highway 94 South, St. Charles, Missouri

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Monthly Volume Increase Approval Letter

Metropolitan
St. Louis Sewer
District

Office of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8710
FAX (314) 436-8753

96684

September 13, 2004

Thomas C. Pauling
DEPARTMENT OF ENERGY
WELDON SPRINGS SITE REMEDIAL ACTION PROJECT
7295 Highway 94 South
St. Charles, MO 63304

Dear Mr. Pauling:

We have reviewed your letter dated September 10, 2004 requesting a volume increase and change in self-monitoring reporting to the special discharge permits approved in our letters dated December 21, 2001, May 17, 2002, and April 15, 2004. The approvals were for the covered storage cell leachate and monitoring well purge water at the Weldon Spring Site Remedial Action Project (WSSRAP) located at 7295 Highway 94 South, St. Charles, Missouri.

Based on the information you provided and historical analytical results, your request to increase the monthly volume to 25,000 gallons and remove the volatile organics from the list of required monitoring parameters is granted. In addition, your request to change from composite truck sampling to one sample per hauling event is approved. All other conditions of the above referenced approvals remain in effect.

Please contact me at (314) 436-8742 with questions or comments.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Roland A. Biehl
Environmental Assistant Engineer

FILE: SD, Weldon Spring Remedial Action project, 7295 Highway 94 South, St. Charles, Missouri

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Extension Approval from Metropolitan St. Louis Sewer District

Metropolitan
St. Louis Sewer
District

Division of Environmental Compliance
10 East Grand Avenue
St. Louis, MO 63147-2913
(314) 436-8710
FAX (314) 436-8753

December 14, 2006

Thomas C. Pauling
DEPARTMENT OF ENERGY
WELDON SPRINGS SITE REMEDIAL ACTION PROJECT
7295 Highway 94 South
St. Charles, MO 63304

Dear Mr. Pauling:

We have reviewed your letter dated November 3, 2006 for extension of the special discharge originally approved on December 21, 2001 and subsequent letters dated May 17, 2002, June 28, 2002, February 18, 2003, April 15, 2004, and September 13, 2004. The original approval was for storage cell leachate and monitoring well purge water at the Weldon Spring Site Remedial Action Project (WSSRAP) located at 7295 Highway 94 South, St. Charles, Missouri. You have requested a five-year extension of your current approval.

Your request for an extension is granted. This approval will expire on December 21, 2011. As a condition of this approval, you must notify us of any changes which would affect the characteristics of this discharge. The self-monitoring reporting requirements and all other conditions of the above referenced approval letters remain in effect.

Please contact me at (314) 436-8742 with questions or comments.

Sincerely,
METROPOLITAN ST. LOUIS SEWER DISTRICT

Roland A. Biehl
Environmental Specialist

pc: Doug Mendoza
Darin Lewis
Steve Grace

FILE: SD, WELDON SPRINGS (WSSRAP) [SOUR053000], 7295 Highway 94 South, St. Charles, MO
SP805 & SP806

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Attachment 3

Leachate Characterization Data

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Leachate Characterization Data

Leachate Sump Data (DC10) from January 2002 to December 2004

PARAMETER	Units	MINIMUM	MAXIMUM	AVERAGE	NUMBER OF SAMPLES
ANIONS					
CHLORIDE	mg/L	31.10	38.80	33.80	6
FLUORIDE	mg/L	0.24	0.28	0.27	6
NITRATE-N	mg/L	ND (0.05)	3.80	0.68	6
SULFATE	mg/L	49.70	80.10	67.93	6
METALS					
ALUMINUM	µg/L	ND (16.5)	65.40	31.28	14
ANTIMONY	µg/L	ND (1.6)	ND (16.0)	NC	14
ARSENIC	µg/L	ND (1.2)	9.90	4.66	14
BARIUM	µg/L	509.00	1090.00	806.50	14
BERYLLIUM	µg/L	ND (0.19)	1.40	0.58	14
CADMIUM	µg/L	ND (0.31)	ND (2.0)	NC	14
CALCIUM	µg/L	144000.00	188000.00	165142.86	14
CHROMIUM	µg/L	ND (0.73)	ND (3.8)	NC	14
COBALT	µg/L	8.10	23.50	14.19	14
COPPER	µg/L	ND (1.4)	7.70	5.96	14
IRON	µg/L	4540.00	27900.00	15160.00	14
LEAD	µg/L	ND (0.93)	ND (2.1)	NC	14
LITHIUM	µg/L	ND (6.4)	23.90	10.87	14
MAGNESIUM	µg/L	51000.00	57800.00	55185.71	14
MANGANESE	µg/L	2360.00	6290.00	3904.29	14
MERCURY	µg/L	ND (0.01)	0.46	0.12	14
MOLYBDENUM	µg/L	ND (4.9)	7.40	6.55	14
NICKEL	µg/L	ND (6.9)	12.00	10.81	14
POTASSIUM	µg/L	3230.00	6960.00	5405.71	14
SELENIUM	µg/L	ND (1.2)	ND (2.4)	NC	14
SILVER	µg/L	ND (0.8)	ND (7.0)	NC	14
SODIUM	µg/L	62200.00	77100.00	70092.86	14
STRONTIUM	µg/L	599.00	719.00	653.79	14
THALLIUM	µg/L	ND (2.2)	4.90	3.03	14
VANADIUM	µg/L	ND (0.88)	2.30	1.96	14
ZINC	µg/L	3.50	27.70	13.96	14
MISCELLANEOUS					
ALKALINITY	mg/L	604.00	682.00	640.80	5
BIOCHEMICAL OXYGEN DEMAND	mg/L	ND (5.0)	10.00	6.00	5
CHEMICAL OXYGEN DEMAND	mg/L	15.00	36.00	27.43	14
CYANIDE, AMENABLE	mg/L	ND (5.0)	ND (5.0)	NC	5
CYANIDE, TOTAL	mg/L	ND (5.0)	6.10	5.22	5
PHOSPHORUS, TOTAL	mg/L	ND (0.03)	0.17	0.07	5
TOTAL DISSOLVED SOLIDS	mg/L	784.00	883.00	820.17	6
TOTAL ORGANIC CARBON	mg/L	8.40	11.20	9.60	6
TOTAL SUSPENDED SOLIDS	mg/L	12.00	68.00	37.64	14
NITROAROMATICS					
1,3,5-TRINITROBENZENE	µg/L	ND (0.03)	ND (0.06)	NC	6
1,3-DINITROBENZENE	µg/L	ND (0.05)	ND (0.18)	NC	6
2,4,6-TRINITROTOLUENE	µg/L	ND (0.03)	ND (0.08)	NC	6
2,4-DINITROTOLUENE	µg/L	ND (0.04)	ND (0.08)	NC	6

Leachate Sump Data (DC10) from January 2002 to December 2004

PARAMETER	Units	MINIMUM	MAXIMUM	AVERAGE	NUMBER OF SAMPLES
2,6-DINITROTOLUENE	µg/L	ND (0.06)	ND (0.12)	NC	6
NITROBENZENE	µg/L	ND (0.03)	ND (0.08)	NC	6
RADIOCHEMICAL					
GROSS ALPHA	pCi/L	16.80	66.70	43.98	14
GROSS BETA	pCi/L	13.20	30.80	19.80	6
RADIUM-226	pCi/L	ND (0.07)	0.51	0.32	14
RADIUM-228	pCi/L	ND (0.01)	1.81	0.65	14
THORIUM-228	pCi/L	ND (0.01)	0.43	0.15	14
THORIUM-230	pCi/L	ND (0.07)	0.78	0.32	14
THORIUM-232	pCi/L	ND (0.01)	0.38	0.14	14
URANIUM, TOTAL	pCi/L	16.00	57.30	37.88	14
AMERICIUM-241	pCi/L	ND (0.015)	0.749	0.28	13
NEPTUNIUM-237	pCi/L	ND (0.035)	1.010	0.34	13
PLUTONIUM-238	pCi/L	ND (0.007)	0.445	0.15	13
PLUTONIUM-239-240	pCi/L	ND (0.024)	0.975	0.18	13
TECHNETIUM-99	pCi/L	ND (0.122)	2.230	0.98	13
SEMI-VOLATILES					
1,2,4-TRICHLOROBENZENE	µg/L	ND (10.0)	ND (20.0)	NC	6
1,2-DICHLOROBENZENE	µg/L	ND (5.0)	ND (20.0)	NC	5
1,2-DIPHENYLHYDRAZINE	µg/L	ND (10.0)	ND (10.0)	NC	5
1,3-DICHLOROBENZENE	µg/L	ND (5.0)	ND (20.0)	NC	5
1,4-DICHLOROBENZENE	µg/L	ND (5.0)	ND (20.0)	NC	5
2,4,6-TRICHLOROPHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
2,4-DICHLOROPHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
2,4-DIMETHYLPHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
2,4-DINITROPHENOL	µg/L	ND (50.0)	ND (100)	NC	6
2,4-DINITROTOLUENE	µg/L	ND (10.0)	ND (20.0)	NC	6
2,6-DINITROTOLUENE	µg/L	ND (10.0)	ND (20.0)	NC	6
2-CHLORONAPHTHALENE	µg/L	ND (10.0)	ND (20.0)	NC	5
2-CHLOROPHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
2-NITROPHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
3,3'-DICHLOROBENZIDINE	µg/L	ND (50.0)	ND (100)	NC	6
4,6-DINITRO-2-METHYLPHENOL	µg/L	ND (50.0)	ND (100)	NC	6
4-BROMOPHENYL PHENYL ETHER	µg/L	ND (10.0)	ND (20.0)	NC	6
4-CHLORO-3-METHYL PHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
4-CHLOROPHENYL PHENYL ETHER	µg/L	ND (10.0)	ND (20.0)	NC	6
4-NITROPHENOL	µg/L	ND (50.0)	ND (100)	NC	6
ACENAPHTHENE	µg/L	ND (5.0)	ND (20.0)	NC	6
ACENAPHTHYLENE	µg/L	ND (5.0)	ND (20.0)	NC	6
ANTHRACENE	µg/L	ND (5.0)	ND (20.0)	NC	6
BENZIDINE	µg/L	ND (100)	ND (200)	NC	5
BENZO(A)ANTHRACENE	µg/L	ND (5.0)	ND (20.0)	NC	6
BENZO(A)PYRENE	µg/L	ND (5.0)	ND (20.0)	NC	6
BENZO(B)FLUORANTHENE	µg/L	ND (5.0)	ND (20.0)	NC	6
BENZO(G,H,I)PERYLENE	µg/L	ND (5.0)	ND (20.0)	NC	6
BENZO(K)FLUORANTHENE	µg/L	ND (5.0)	ND (20.0)	NC	6
BIS(2-CHLOROETHOXY)METHANE	µg/L	ND (10.0)	ND (20.0)	NC	6
BIS(2-CHLOROETHYL)ETHER	µg/L	ND (10.0)	ND (20.0)	NC	6
BIS(2-CHLOROISOPROPYL)ETHER	µg/L	ND (10.0)	ND (20.0)	NC	5
BIS(2-ETHYLHEXYL)PHTHALATE	µg/L	ND (10.0)	ND (20.0)	NC	6

Leachate Sump Data (DC10) from January 2002 to December 2004

PARAMETER	Units	MINIMUM	MAXIMUM	AVERAGE	NUMBER OF SAMPLES
BUTYLBENZYLPHTHALATE	µg/L	ND (10.0)	ND (20.0)	NC	6
CHRYSENE	µg/L	ND (5.0)	ND (20.0)	NC	6
DIBENZO(A,H)ANTHRACENE	µg/L	ND (5.0)	ND (20.0)	NC	6
DIETHYLPHTHALATE	µg/L	ND (10.0)	ND (20.0)	NC	6
DIMETHYLPHTHALATE	µg/L	ND (10.0)	ND (20.0)	NC	6
DI-N-BUTYL PHTHALATE	µg/L	ND (10.0)	ND (20.0)	NC	6
DI-N-OCTYL PHTHALATE	µg/L	ND (10.0)	ND (20.0)	NC	6
FLUORANTHENE	µg/L	ND (5.0)	ND (20.0)	NC	6
FLUORENE	µg/L	ND (5.0)	ND (20.0)	NC	6
HEXACHLOROBENZENE	µg/L	ND (10.0)	ND (20.0)	NC	6
HEXACHLOROBUTADIENE	µg/L	ND (10.0)	ND (20.0)	NC	6
HEXACHLOROCYCLOPENTADIENE	µg/L	ND (50.0)	ND (100)	NC	6
HEXACHLOROETHANE	µg/L	ND (10.0)	ND (20.0)	NC	6
INDENO(1,2,3-CD)PYRENE	µg/L	ND (5.0)	ND (20.0)	NC	6
ISOPHORONE	µg/L	ND (10.0)	ND (20.0)	NC	6
NAPHTHALENE	µg/L	ND (5.0)	ND (20.0)	NC	6
NITROBENZENE	µg/L	ND (10.0)	ND (20.0)	NC	6
N-NITROSODIMETHYLAMINE	µg/L	ND (10.0)	ND (20.0)	NC	5
N-NITROSO-DI-N-PROPYLAMINE	µg/L	ND (10.0)	ND (20.0)	NC	6
N-NITROSODIPHENYLAMINE	µg/L	ND (10.0)	ND (20.0)	NC	6
PENTACHLOROPHENOL	µg/L	ND (50.0)	ND (100)	NC	6
PHENANTHRENE	µg/L	ND (5.0)	ND (20.0)	NC	6
PHENOL	µg/L	ND (10.0)	ND (20.0)	NC	6
PYRENE	µg/L	ND (5.0)	ND (20.0)	NC	6
VOLATILES					
1,1,1-TRICHLOROETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,1,2,2-TETRACHLOROETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,1,2-TRICHLOROETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,1-DICHLOROETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,1-DICHLOROETHENE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,2-DICHLOROBENZENE	µg/L	ND (5.0)	ND (5.0)	NC	5
1,2-DICHLOROETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,2-DICHLOROETHENE (TOTAL)	µg/L	ND (5.0)	ND (5.0)	NC	14
1,2-DICHLOROPROPANE	µg/L	ND (5.0)	ND (5.0)	NC	14
1,3-DICHLOROBENZENE	µg/L	ND (5.0)	ND (5.0)	NC	5
1,4-DICHLOROBENZENE	µg/L	ND (5.0)	ND (5.0)	NC	5
2-CHLOROETHYL VINYL ETHER	µg/L	ND (50.0)	ND (50.0)	NC	14
ACROLEIN	µg/L	ND (100)	ND (100)	NC	14
ACRYLONITRILE	µg/L	ND (5.0)	ND (5.0)	NC	14
BENZENE	µg/L	ND (5.0)	ND (5.0)	NC	14
BROMODICHLOROMETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14
BROMOFORM	µg/L	ND (5.0)	ND (5.0)	NC	14
BROMOMETHANE	µg/L	ND (10.0)	ND (10.0)	NC	14
CARBON TETRACHLORIDE	µg/L	ND (5.0)	ND (5.0)	NC	14
CHLOROBENZENE	µg/L	ND (5.0)	ND (5.0)	NC	14
CHLOROETHANE	µg/L	ND (10.0)	ND (10.0)	NC	14
CHLOROFORM	µg/L	ND (5.0)	ND (5.0)	NC	14
CHLOROMETHANE	µg/L	0.67	ND (10.0)	NC	14
CIS-1,3-DICHLOROPROPENE	µg/L	ND (5.0)	ND (5.0)	NC	14
DIBROMOCHLOROMETHANE	µg/L	ND (5.0)	ND (5.0)	NC	14

Leachate Sump Data (DC10) from January 2002 to December 2004

PARAMETER	Units	MINIMUM	MAXIMUM	AVERAGE	NUMBER OF SAMPLES
ETHYL BENZENE	µg/L	ND (5.0)	ND (5.0)	NC	14
METHYLENE CHLORIDE	µg/L	1.30	6.90	3.76	14
TETRACHLOROETHENE	µg/L	ND (5.0)	ND (5.0)	NC	14
TOLUENE	µg/L	0.66	ND (5.0)	NC	14
TRANS-1,2-DICHLOROETHENE	µg/L	ND (5.0)	ND (5.0)	NC	6
TRANS-1,3-DICHLOROPROPENE	µg/L	ND (5.0)	ND (5.0)	NC	14
TRICHLOROETHENE	µg/L	ND (5.0)	ND (5.0)	NC	14
TRICHLOROFLUOROMETHANE	µg/L	ND (10.0)	ND (10.0)	NC	14
VINYL CHLORIDE	µg/L	ND (10.0)	ND (10.0)	NC	14
XYLENES, TOTAL	µg/L	ND (5.0)	ND (5.0)	NC	14
PESTICIDE/PCBS					
4,4'-DDD	µg/L	ND (0.05)	0.210	0.08	5
4,4'-DDE	µg/L	ND (0.05)	0.068	0.05	5
4,4'-DDT	µg/L	ND (0.025)	ND (0.05)	NC	5
ALDRIN	µg/L	ND (0.025)	ND (0.05)	NC	5
ALPHA-BHC	µg/L	ND (0.025)	ND (0.05)	NC	5
ALPHA-CHLORDANE	µg/L	ND (0.025)	ND (0.05)	NC	5
AROCLOR-1016	µg/L	ND (0.5)	ND (1.0)	NC	6
AROCLOR-1221	µg/L	ND (0.5)	ND (1.0)	NC	6
AROCLOR-1232	µg/L	ND (0.5)	ND (1.0)	NC	6
AROCLOR-1242	µg/L	ND (0.5)	ND (1.0)	NC	6
AROCLOR-1248	µg/L	ND (0.5)	ND (1.0)	NC	6
AROCLOR-1254	µg/L	ND (0.5)	ND (1.0)	NC	6
AROCLOR-1260	µg/L	ND (0.5)	ND (1.0)	NC	6
BETA-BHC	µg/L	0.10	0.150	0.08	5
DELTA-BHC	µg/L	0.035	0.061	0.05	5
DIELDRIN	µg/L	ND (0.025)	ND (0.05)	NC	5
ENDOSULFAN I	µg/L	ND (0.025)	ND (0.05)	NC	5
ENDOSULFAN II	µg/L	ND (0.025)	ND (0.05)	NC	5
ENDOSULFAN SULFATE	µg/L	ND (0.025)	ND (0.05)	NC	5
ENDRIN	µg/L	0.15	0.210	0.10	5
ENDRIN ALDEHYDE	µg/L	ND (0.025)	ND (0.05)	NC	5
GAMMA-BHC (LINDANE)	µg/L	ND (0.025)	0.062	0.05	5
GAMMA-CHLORDANE	µg/L	ND (0.025)	ND (0.05)	NC	5
HEPTACHLOR	µg/L	0.10	0.310	0.19	5
HEPTACHLOR EPOXIDE	µg/L	ND (0.05)	0.110	0.06	5
TOXAPHENE	µg/L	ND (0.5)	ND (2.0)	NC	5

NOTES:

ND (Value) = Not Detected, Detection Limit given in parentheses
NC = Not Calculated. The average is calculated using all values. Where a ND value exists for both the minimum and maximum, an average could not be calculated

Untreated Leachate Sump Data (DC10) June 2005 to June 2007

Parameter	Concentrations				
	June 2005	December 2005	June 2006	December 2006	June 2007
Chloride (mg/L)	35.9	35.1	37.0	34.6	35.6
Fluoride (mg/L)	0.25	0.23	0.28	0.22	0.26
Nitrate-N (mg/L)	0.0027	0.408	1.38	1.52	1.33
Sulfate (mg/L)	33.3	32.8	48.7	42.7	37.5
Arsenic (mg/L)	0.0045	0.0027	0.0037	0.0024	0.0048
Barium (mg/L)	1.020	.743	0.799	0.768	0.781
Chromium (mg/L)	ND	ND	ND	ND	ND
Cobalt (mg/L)	0.0051	0.0023	ND	ND	ND
Iron (mg/L)	4.20	1.67	1.200	3.010	4.130
Lead (mg/L)	ND	ND	ND	ND	ND
Manganese (mg/L)	0.949	0.433	0.514	0.369	0.389
Nickel (mg/L)	0.0084	0.0073	ND	ND	0.0064
Selenium (mg/L)	ND	0.0027	ND	ND	ND
Thallium (mg/L)	ND	0.0013	0.0028	ND	ND
COD (mg/L)	31.0	38.0	37.0	27.0	69.0
TDS (mg/L)	749	633	683	619	725
TOC (mg/L)	10.37	12.3	ND	ND	12.0
1,3,5-TNB (µg/L)	ND	ND	ND	ND	ND
1,3-DNB (µg/L)	ND	ND	ND	ND	ND
2,4,6-TNT (µg/L)	ND	ND	ND	ND	ND
2,4-DNT (µg/L)	ND	ND	ND	ND	ND
2,6-DNT (µg/L)	ND	ND	ND	ND	ND
Nitrobenzene (µg/L)	ND	ND	ND	ND	ND
Radium-226 (pCi/L)	0.36	0.37	0.79	ND	0.56
Radium-228 (pCi/L)	0.74	ND	0.74	ND	0.79
Thorium-228 (pCi/L)	ND	ND	ND	ND	ND
Thorium-230 (pCi/L)	0.43	0.19	0.25	0.46	ND
Thorium-232 (pCi/L)	ND	ND	ND	ND	ND
Uranium (pCi/L)	15.8	24.2	20.2	24.7	17.1
PCBs/PAHs (µg/L)	ND	ND	ND	ND	ND

ND Nondetect.

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Attachment 4

NPDES Permit

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NPDES Permit No. MO-0107701
Weldon Spring Site Chemical Plant Area

USDOE, Weldon Springs Chemical Plant
MO-0107701, St. Charles County

STATE OF MISSOURI
APR 2 5 2008

Matt Blunt, Governor • Doyle Childers, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

US Department of Energy (USDOE)
7295 Highway 94 South
Weldon Springs, MO 63304

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, we have issued and are enclosing your State Operating Permit to discharge from USDOE, Weldon Springs Chemical Plant.

Please read your permit and attached Standard Conditions. They contain important information on monitoring requirements, effluent limitations, sampling frequencies and reporting requirements.

Monitoring reports required by the special conditions must be submitted on a periodic basis. Copies of the necessary report forms are enclosed and should be mailed to the regional office listed below. Please contact that office for additional forms.

This permit is both your Federal NPDES Permit and your new Missouri State Operating Permit and replaces all previous State Operating Permits issued for this facility under this permit number. In all future correspondence regarding this facility, please refer to your State Operating Permit number and facility name as shown on page one of the permit.

If you were adversely affected by this decision, you may be entitled to an appeal before the administrative hearing commission pursuant to 10 CSR 20-1.020 and Section 621.250, RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission. Contact information for the AHC is as follows:

Administrative Hearing Commission
Truman State Office Building, Room 640
301 W. High Street
P.O. Box 1557
Jefferson City, Missouri 65102
Phone: 573-751-2422
Fax: 573-751-5018
Website: www.oa.mo.gov/ahc

Please be aware that this facility may also be subject to any applicable county or other local ordinances or restrictions.

If you have any questions concerning this permit, please do not hesitate to contact the St. Louis Regional Office at 7545 S. LindberghSuite 210, St. Louis, MO 63125 (314) 416-2960.

Sincerely,

ST. LOUIS REGIONAL OFFICE

Mike Struckhoff

Mike Struckhoff
Regional Director

MS:

Enclosure

c:

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STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0107701
Owner:	U.S. Department of Energy (USDOE)
Address:	7295 Highway 94 South, Weldon Spring, MO 63304
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	USDOE, Weldon Spring Chemical Plant
Facility Address:	7295 Highway 94 South, Weldon Spring, MO 63304
Legal Description:	SW ¼, NW ¼, Sec. 08 projected, T45N, R3E, St. Charles County
Latitude/Longitude:	+3840158 / -09043193
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (#1604), 303(d) List
USGS Basin & Sub-watershed No.:	(10300200-190003)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #007 - Radioactive waste disposal facilities, SIC #4953
Leachate Collection and Retention System for Disposal Facility Leachate and monitoring well purge water. Disposal Facility Leachate is filtered and passed through an Ion Exchange Resin. Monitoring Well Purge water is passed through a carbon absorption system prior to placement in the Disposal Facility Leachate Collection and Retention System
Design flow is 25,000 gallons per day.
Actual flow is 200 gallons per day.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

April 25, 2008
Effective Date

Doyle Childers
Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

April 24, 2013
Expiration Date
MO 780-0041 (10-93)

Mike Struckhoff
Mike Struckhoff, Director, St. Louis Regional Office

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 2 of 6 PERMIT NUMBER MO-0107701

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #007						
Flow	MGD	*		*	Once/Discharge Event	24 hr Estimate
pH – Units	SU	**		**	Once/Discharge Event	Grab
Antimony, Total	µg/L	66		26	Once/Discharge Event	Grab
Cyanide, Amenable to Chlorination	µg/L	188		93	Once/Discharge Event	Grab
Gross Alpha	pCi/L	167		80	Once/Discharge Event	Grab
Phenol	µg/L	825		425	Once/Discharge Event	Grab
MONITORING REPORTS SHALL BE SUBMITTED YEARLY; THE FIRST REPORT IS DUE OCTOBER 28, 2008. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions			Once/year	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED YEARLY; THE REPORT IS DUE OCTOBER, 28 2008						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, 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.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to area-wide wastewater treatment system within 90 days of notice of its availability.

4. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards
   (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

C. SPECIAL CONDITIONS (continued)

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

8. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
007	10 %	YEARLY	24 hr. composite	First Discharge of Year

(a) Test Schedule and Follow-Up Requirements

(1) Perform a SINGLE-dilution test in the months and at the frequency specified above. For tests which are successfully passed, submit test results USING THE DEPARTMENT'S WET TEST REPORT FORM #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.

(a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.

(b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.

(c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.

(d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.

(e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.

(f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

(g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.

(h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.

(i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.

(j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.

(k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.

(l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

(m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.

(2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(3) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days and biweekly thereafter, until one of the following conditions are met:

(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.

(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(4) Failure of at least two multiple-dilution tests during any period of accelerated monitoring violates the permit narrative requirement for aquatic life protection.

(5) The permittee shall submit a concise summary of all test results for the test series to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(6) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(9) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.

(10) Submit a concise summary in tabular format of all test results with the annual report.

(b) PASS/FAIL procedure and effluent limitations:

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other Federal guidelines as appropriate or required.

(2) To pass a multiple-dilution test:

(a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC), OF 30% OR LESS THE AEC must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; **OR**,

(b) For facilities with an AEC greater than 30% the LC50 concentration must be greater than 100%; **AND**,

(c) all effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal.

(2) All tests, including repeat tests for previous failures, shall include both test species listed below.

(3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS.

(4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(5) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(6) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(7) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(8) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

(9) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
Revised
October 1, 1980

PART I - GENERAL CONDITIONS
SECTION A - MONITORING AND REPORTING

1. **Representative Sampling**
   a. Samples and measurements taken as required herein shall be representative of the nature and volume, respectively, of the monitored discharge. All samples shall be taken at the outfall(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
   b. Monitoring results shall be recorded and reported on forms provided by the Department, postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the respective Department Regional Office, the Regional Office address is indicated in the cover letter transmitting the permit.

2. **Schedule of Compliance**
   No later than fourteen (14) calendar days following each date identified in the "Schedule of Compliance", the permittee shall submit to the respective Department Regional Office as required therein, either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements, or if there are no more scheduled requirements, when such noncompliance will be corrected. The Regional Office address is indicated in the cover letter transmitting he permit.

3. **Definitions**
   Definitions as set forth in the Missouri Clean Water Law and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein.

4. **Test Procedures**
   Test procedures for the analysis of pollutant shall be in accordance with the Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015.

5. **Recording of Results**
   a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
      (i) the date, exact place, and time of sampling or measurements;
      (ii) the individual(s) who performed the sampling or measurements;
      (iii) the date(s) analyses were performed;
      (iv) the individual(s) who performed the analyses;
      (v) the analytical techniques or methods used; and
      (vi) the results of such analyses.
   b. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or both.
   c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

6. **Additional Monitoring by Permittee**
   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monitoring Report Form. Such increased frequency shall also be indicated.

7. **Records Retention**
   The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recording for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

SECTION B - MANAGEMENT REQUIREMENTS

1. **Change in Discharge**
   a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant not authorized by this permit or any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.
   b. Any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application at least sixty (60) days before each such changes, or, if they will not violate the effluent limitations specified in the permit, by notice to the Department at least thirty (30) days before such changes.

2. **Noncompliance Notification**
   a. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:
      (i) a description of the discharge and cause of noncompliance, and
      (ii) the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
   b. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally with 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided with five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

3. **Facilities Operation**
   Permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions. Operators or supervisors of operations at publicly owned or publicly regulated wastewater treatment facilities shall be certified in accordance with 10 CSR 209.020(2) and any other applicable law or regulation. Operators of other wastewater treatment facilities, water contaminant source or point sources, shall, upon request by the Department, demonstrate that wastewater treatment equipment and facilities are effectively operated and maintained by competent personnel.

4. **Adverse Impact**
   The permittee shall take all necessary steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit or set forth in the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. **Bypassing**
   a. Any bypass or shut down of a wastewater treatment facility and tributary sewer system or any part of such a facility and sewer system that results in a violation of permit limits or conditions is prohibited except:
      (i) where unavoidable to prevent loss of life, personal injury, or severe property damages; and
      (ii) where unavoidable excessive storm drainage or runoff would catastrophically damage any facilities or processes necessary for compliance with the effluent limitations and conditions of this permit;
      (iii) where maintenance is necessary to ensure efficient operation and alternative measures have been taken to maintain effluent quality during the period of maintenance.
   b. The permittee shall notify the Department in writing of all bypasses or shut down that result in a violation of permit limits or conditions. This section does not excuse any person from liability, unless such relief is otherwise provided by the statute.

6. **Removed Substances**
   Solids, sludges, filter backwash, or any other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutants from entering waters of the state unless permitted by the Law, and a permanent record of the date and time, volume and methods of removal and disposal of such substances shall be maintained by the permittee.

7. **Power Failures**
   In order to maintain compliance with the effluent limitations and other provisions of this permit, the permittee shall either:
   a. in accordance with the "Schedule of Compliance", provide an alternative power source sufficient to operate the wastewater control facilities; or,
   b. if such alternative power source is not in existence, and no date for its implementation appears in the Compliance Schedule, halt or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

8. **Right of Entry**
   For the purpose of inspecting, monitoring, or sampling the point source, water contaminant source, or wastewater treatment facility for compliance with the Clean Water Law and these regulations, authorized representatives of the Department, shall be allowed by the permittee, upon presentation of credentials and at reasonable times;
   a. to enter upon permittee's premises in which a point source, water contaminant source, or wastewater treatment facility is located or in which any records are required to be kept under terms and conditions of the permit;
   b. to have access to, or copy, any records required to be kept under terms and conditions of the permit;
   c. to inspect any monitoring equipment or method required in the permit;
   d. to inspect any collection, treatment, or discharge facility covered under the permit; and
   e. to sample any wastewater at any point in the collection system or treatment process.

9. **Permits Transferable**
   a. Subject to Section (3) of 10 CSR 20-6.010 an operating permit may be transferred upon submission to the Department of an application to transfer signed by a new owner. Until such time as the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department, within thirty (30) days of receipt of the application shall notify the new permittee of its intent to revoke and reissue or transfer the permit.

10. **Availability of Reports**
    Except for data determined to be confidential under Section 308 of the Act, and the Law and Missouri Clean Water Commission Regulation for Public Participation, Hearings and Notice to Governmental Agencies 10 CSR 20-6.020, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by statute, effluent data shall not be considered confidential. Knowingly making any false statement on any such report shall be subject to the imposition of criminal penalties as provided in Section 204.076 of the Law.

11. **Permit Modification**
    a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
       (i) violation of any terms or conditions of this permit or the Law;
       (ii) having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
       (iii) a change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge, or
       (iv) any reason set forth in the Law and Regulations.
    b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

12. **Permit Modification - Less Stringent Requirements**
    If any permit provisions are based on legal requirements which are lessened or removed, and should no other basis exist for such permit provisions, the permit shall be modified after notice and opportunity for a hearing.

13. **Civil and Criminal Liability**
    Except as authorized by statute and provided in permit conditions on "Bypassing" (Standard Condition B-5) and "Power Failures" (Standard Condition B-7) nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

14. **Oil and Hazardous Substance Liability**
    Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act, and the Law and Regulations. Oil and hazardous materials discharges must be reported in compliance with the requirements of the Federal Clean Water Act.

15. **State Laws**
    Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state statute or regulations.

16. **Property Rights**
    The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, no does it authorize any injury to private property or any invasion of personal rights, nor any infringement of or violation of federal, state or local laws or regulations.

17. **Duty to Reapply**
    If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to expiration of this permit.

18. **Toxic Pollutants**
    If a toxic effluent standard, prohibition, or schedule of compliance is established, under Section 307(a) of the Federal Clean Water Act for a toxic pollutant in the discharge of permittee's facility and such standard is more stringent than the limitations in the permit, then the more stringent standard, prohibition, or schedule shall be incorporated into the permit as one of its conditions, upon notice to the permittee.

19. **Signatory Requirement**
    All reports, or information submitted to the Director shall be signed (see 40 CFR-122.6).

20. **Rights Not Affected**
    Nothing in this permit shall affect the permittee's right to appeal or seek a variance from applicable laws or regulations as allowed by law.

21. **Severability**
    The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
AUGUST 15, 1994

PART III - SLUDGE & BIOSOLIDS FROM DOMESTIC WASTEWATER TREATMENT FACILITIES

SECTION A - GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulations and incorporates applicable federal sludge disposal requirements under 40 CFR 503. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFS 503 until such time as Missouri is delegated the new EPA sludge program. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Sludge and Biosolids Use and Disposal Practices.
   a. Permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
   b. Permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
   c. Permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
   d. A separate operating permit is required for each operating location where sludge or biosolids are generated, stored, treated, or disposed, unless specifically exempted in this permit or in 10 CSR 20, Chapter 6 regulations. For land application, see section H, subsection 3 of these standard conditions.
4. Sludge Received From Other Facilities
   a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
   b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge.
   c. Sludge received from out-of-state generators shall receive prior approval of the permitting authority and shall be listed in the facility description or special conditions section of the permit.
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RsMo.
8. In addition to these STANDARD CONDITIONS, the department may include sludge limitations in the special conditions portion or other sections of this permit.
9. Alternate Limits in Site Specific Permit.
   Where deemed appropriate, the department may require an individual site specific permit in order to authorize alternate limitations:
   a. An individual permit must be obtained for each operating location, including application sites.
   b. To request a site specific permit, an individual permit application, permit fees, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the department, as follows:
    a. The department will prepare a permit modification and follow permit public notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owners of property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.
11. Compliance Period
    Compliance shall be achieved as expeditiously as possible but no later than the compliance dates under 40 CFR 503.2.

SECTION B - DEFINITIONS

1. Biosolids means an organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge. Untreated sludge or sludge that does not conform to the pollutants and pathogen treatment requirements in this permit is not considered biosolids.
2. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
3. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
4. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a public owned treatment works (POTW) or privately owned facility.
6. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include unaerated wastewater treatment lagoons and constructed wetlands for wastewater treatment.
7. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
8. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the next growing season after biosolids application.
9. Sinkhole is a depression in the land surface into which surface water flows to join an underground drainage system.
10. Site Specific Permit is a permit that has alternate limits developed to address specific site conditions for each land application site or storage site.
11. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks.
12. Sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
13. Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamp, marshes, bogs, and similar areas. Wetlands do not include constructed wetlands used for wastewater treatment.

SECTION C - MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from the wastewater treatment facilities and handled according to the permit facility description and sludge conditions in this permit.
2. The permittee shall operate the facility so that there is no sludge loss into the discharged effluent in excess of permit limits, no sludge bypassing, and no discharge of sludge to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D - SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the contract hauler has a separate permit for sludge or biosolids disposal issued by the department; or the hauler transports the sludge to another permitted treatment facility.
3. The permittee shall require documentation from the contractor of the disposal methods used and permits obtained by the contractor.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility.

SECTION E - WASTEWATER TREATMENT LAGOONS AND STORMWATER RETENTION BASINS

1. Sludge that is retained within a wastewater treatment lagoon is subject to sludge disposal requirements when the sludge is removed from the lagoon or when the lagoon ceases to receive and treat wastewater.
2. If sludge is removed during the year, an annual sludge report must be submitted.
3. Storm water retention basins or other earthen basins, which have been used as sludge storage for a mechanical treatment system is considered a sludge lagoon and must comply with Section G of this permit.

SECTION F - INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous waste, shall be disposed in accordance with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored; and ash use or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.
4. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions sections of this permit.

SECTION G - SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites shall comply with the requirements in 40 CFR 503 Subpart C, and solid waste disposal regulations under 10 CSR 80.
2. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions section of this permit.
3. Effective February 19, 1995, a sludge lagoon that has been in use for more than two years without removal of accumulated sludge, or that has not been properly closed shall comply with one of the following options:
   a. Permittee shall obtain a site specific permit to address surface disposal requirements under 40 CFR 503, ground water quality regulations under 10 CSR 20, Chapter 7 and 8, and solid waste management regulations under 10 CSR 80;
   b. Permittee shall clean out the sludge lagoon to remove any sludge over two years old and shall continue to remove accumulated sludge at least every two years or an alternate schedule approved under 40 CFR 503.20(b). In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the department; or
   c. Permittee shall close the lagoon in accordance with Section 1.

SECTION H - LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the Facility Description or special conditions section of the permit.
2. This permit replaces and terminates all previous sludge management plan approvals by the department for land application of sludge or biosolids.
3. Land application sites within a 20 mile radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless a site specific permit is required under Section A, Subsection 9.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
   a. This permit does not authorize the land application of sludge except when sludge meets the definition of biosolids.
   b. This permit authorizes AClass A or B≡ biosolids derived from domestic wastewater sludges to be land applied onto grass land, crop land, timber land or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites.
   Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the department. Applications for approval shall be in the form of an engineering report and shall address priority pollutants and dioxin concentrations. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site-specific permit.

6. Agricultural and Silvicultural Sites.
In addition to specified conditions herein, this permit is subject to the attached Water Quality Guides numbers WQ 422 through 426 published by the University of Missouri, and hereby incorporated as though fully set forth herein. The guide topics are as follows:

WQ 422	Land Application of Septage
WQ 423	Monitoring Requirements for Biosolids Land Application
WQ 424	Biosolids Standards for Pathogens and Vectors
WQ 425	Biosolids Standards for Metals and Other Trace Substances
WQ 426	Best Management Practices for Biosolids Land Application

SECTION I - CLOSURE REQUIREMENTS

1. This section applies to all wastewater treatment facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees who plan to cease operation must obtain department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids, and ash. Permittee must maintain this permit until the facility is properly closed per 10 CSR 20-6.010 and 10 CSR 20-6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure shall not exceed the agricultural loading rates as follows:
   a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
   b. If a wastewater treatment lagoon has been in operation for 15 years or more, the sludge in the lagoon qualifies for Class B with respect to pathogens (see WQ 424, Table 3), and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B limitations. See WQ 423 and 424.
   c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. See WQ 426 for calculation procedures. For a grass cover crop, the allowable PAN is 300 pounds/acre.
4. When closing a wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered Aseptage≅ under the Asimilar treatment works≅ definition. See WQ 422. Under the septage category, residuals may be left in place as follows:
   a. Testing for metals or fecal coliform is not required.
   b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at the rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
   c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If more than 100 dry tons/acre will be left in the lagoon, test for nitrogen and determine the PAN in accordance with WQ 426. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berms shall be demolished, and the site shall be graded and vegetated so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoon closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed five acres in accordance with 10 CSR 20-6.200.
7. If sludge exceeds agricultural loading rates under Section H or I, a landfill permit or solid waste disposal permit shall be obtained to authorize on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION J - MONITORING FREQUENCY

1. At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately respresent sludge quantities produced and disposed.
2. Testing for land application is listed under Section H, Subsection 6 of these standard conditions (see WQ 423). Once per year is the minimum test frequency. Additional testing shall be performed for each 100 dry tons of sludge generated or stored during the year.
3. Additional testing may be required in the special conditions or other sections of this permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the department.
4. Monitoring requirements shall be performed in accordance with, APOTW Sludge Sampling and Analysis Guidance Document≅, United States Environmental Protection Agency, August 1989, and subsequent revisions.

SECTION K - RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these Standard Conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
2. Reporting Period
   a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
3. Report Forms. The annual report shall be submitted on report forms provided by the department or equivalent forms approved by the department.
4. Report shall be submitted as follows:
   Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the department and EPA. Other facilities need to report only to the department. Reports shall be submitted to the addresses listed as follows:

   DNR regional office listed in your permit
   (See cover letter of permit)

   EPA Region VII
   Water Compliance Branch (WACM)
   Sludge Coordinator
   726 Minnesota Ave.
   Kansas City, KS 66101

5. Annual Report Contents. The annual report shall include the following:
   a. Sludge/biosolids testing performed. Include a copy or summary of all test results, even if not required by this permit.
   b. Sludge or Biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at end of year, and the quantity used or disposed.
   c. Gallons and % solids data used to calculate the dry ton amounts.
   d. Description of any unusual operating conditions.
   e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
      (1) This must include the name, address and permit number for the hauler and the sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name and permit number of that facility.
      (2) Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
   f. Contract Hauler Activities.
      If contract hauler, provide a copy of a signed contract or billing receipts from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge disposal or biosolids use permit.
   g. Land Application Sites.
      (1) Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as legal description for nearest 3, 3, Section, Township, Range, and County, or as latitude and longitude.
      (2) If biosolids application exceeds 2 dry tons/acre/year, report biosolids nitrogen results. Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement, available nitrogen in the soil prior to biosolids application, and PAN calculations for each site.
      (3) If the ALow Metals≅ criteria is exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative loading which has been reached at each site.
      (4) Report the method used for compliance with pathogen and vector attraction requirements.
      (5) Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM - WATER POLLUTION BRANCH

DISCHARGE MONITORING REPORT FOR STORM WATER AND WASTE WATER DISCHARGES UNDER GENERAL PERMIT

THIS REPORT COVERS THE PERIOD FROM (MONTH/YEAR)	THROUGH (MONTH/YEAR)
/	/

PART I: FACILITY INFORMATION

FACILITY NAME	COUNTY	PERMIT #
		MO-

PART II: MONITORING INFORMATION

SAMPLES COLLECTED BY	PHONE NUMBER	NUMBER OF SAMPLES	LABORATORY (NAME AND ADDRESS)
FIRM		ANALYSIS PERFORMED BY: PLEASE TYPE OR PRINT	

PART III: ANALYTICAL RESULTS

OUTFALL #		001		002		003				SAMPLE TYPE	ANALYTICAL METHOD
DATE AND TIME OF SAMPLE COLLECTION		DATE	ANALYSIS DATE	DATE	ANALYSIS DATE	DATE	ANALYSIS DATE	DATE	ANALYSIS DATE		
Parameter	Unit	TIME		TIME		TIME		TIME			
Rainfall Amount	in.										
Flow	MGD										
pH	Units										
Settleable Solids	mL/L/hr										
Oil & Grease	mg/L										
Other (list)											

NAME OF INDIVIDUAL PREPARING REPORT (PLEASE TYPE OR PRINT)	FIRM
SIGNATURE OF INDIVIDUAL PREPARING REPORT	PHONE NUMBER
REPORT APPROVED BY OWNER	PHONE NUMBER / DATE

MO 780-1560 (7-04)

INSTRUCTIONS

Report should be typed or neatly printed.

PART I:

1. Fill in facility information and permit number.

PART II:

2. Give the name of the individual who actually collected the sample. Indicate whether samples were collected by owner or by personnel of the lab performing the analysis. Indicate the number of samples taken.

PART III:

3. Report results for those parameters listed in Part A of your permit. Write N.A. (Not Applicable) if your permit does not require one of the pre-printed parameters. List under "Other" any additional sampling results required by your permit.

   If a storm water sample, indicate the amount of rainfall for the rainfall event in which the sample was taken and write the source of this data (e.g., rain gauge, weather data, etc.) under "Analytical Method" column. If not a storm water discharge, write N.A. in the "Rainfall Amount" column.

4. File a report even if no discharge occurred during the monitoring period. Complete the Facility Information section, write "ND" (no discharge) in the Flow column in Part III, and sign the report. NOTE: If a discharge of storm water occurs at any time during the monitoring period, it must be reported.

5. Record Sample Types as G, C, M or E. G = grab, C = composite, M = measured, and E = estimate. See permit for type of sample required for each parameter.

6. Narrative monitoring requirements for "chemicals stored outside", "soluble bulk materials stored outside", etc. are required only if specifically requested by the department in written form. If you have questions about these requirements, contact the Water Protection Program.

7. Add pages if reporting for additional outfalls or sampling dates is needed.

8. Report must be signed by owner and individual preparing the report. Please provide a phone number where each can be reached. Print the name of the individual who prepared the report.

9. Mail to the appropriate DNR regional office as noted in your permit cover letter.

Note: This form is a universal reporting form for General Permits for storm water and waste water discharges with a permit number beginning MO-R or MO-G. Industries and individuals who have report forms designed for their specific needs may substitute their forms. A suitable substitute must meet the following specifications:
(a) Form must be 8½" by 11".
(b) Report must show all of the information indicated on the standard form.

MO 780-1560 (7-04)

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Attachment 5

Procedures

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SECONDARY CONTAINMENT (BURRITO) WATER TRANSFER AND MEASUREMENT PROCEDURE

STEP	ACTION
1	Place a 55 gallon barrel adjacent to the sump cover, measure the static water level and record data on the LCRS Roundsheet.
2	Connect the inlet tubes from a dual head peristaltic pump to the burrito dip tubes.
3	Place the peristaltic outlet tubes into the barrel.
	NOTE: Secure hoses to barrel to prevent them from falling out.
4	Pump the burrito until the drum is full, measure the water in the barrel and record the reading on the LCRS round sheet.
5	Place a submersible pump in the barrel and pump the burrito water to the sump.
6	Remove the sump pump.
7	Repeat steps 3 through 6 until the pump no longer is pumping water.
8	Remove and store equipment.
9	Total and record the volumes and complete the LCRS Round Sheet

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LEACHATE TREATMENT AND HAULING PROCEDURE

Background: Water in the sump must be removed on a schedule that will prevent the water from submerging sensitive equipment or overflowing the sump. The water will be vacuumed from the sump or inside storage tanks using a vacuum truck and hauled to Metropolitan St. Louis Sewer District (MSD) Bissell Point Facility. The hauling is performed by a specialty subcontractor. Currently, the leachate in the sump is hauled to MSD approximately once every 4 or 5 months. However, the daily accumulation is expected to continually decrease over time, decreasing the frequency of hauling to MSD.

CAUTION
The maximum level of water in the LCRS is 47 inches. If the level exceeds 53 inches, electrical equipment will be submerged and may be damaged.

NOTE: The maximum amount of water that can be hauled to MSD monthly is 25,000 gallons. This limit has been set by MSD.

The following steps shall be followed to treat and transfer LCRS water to the MSD Bissell Point Facility.

LEACHATE TREATMENT PROCEDURE

STEP	ACTION
1	Obtain a compressor from a rental company.
2	Connect the hoses from the sump to the diaphragm pump, from the pump to the filter inlet, from the filter outlet to the ion exchange inlet and from the ion exchange outlet to the effluent tank inlet. **Caution: Ensure fittings are locked and pinned to prevent leaks.**
3	Open all the valves on the system with the Ion Exchange Column outlet valve slightly opened.
4	Record the initial flowmeter reading on the LCRS round sheet.
5	Record the east and west secondary and primary sump level readings from the panel onto the LCRS round sheet.
6	Measure the burrito and sump static water level and record it on the LCRS Round Sheet.
7	Connect the air hose to the compressor and diaphragm pump. **Caution: Ensure that the connections are pinned to prevent accidental disconnection.**
8	Check that the air supply valves on the pump and the compressor are closed
9	Start the compressor according to the instructions for the compressor.
10	Open the air supply valve on the compressor fully.
11	Open the air supply valve on the pump slightly and adjust the air valve (on the pump) and the outlet valve of the Ion Exchange Column to allow approximately 25 gpm flow with the water pressure fluctuating between 10-30 psi on the filter vessel gages.

STEP	ACTION
12	Bleed air from the top valves of the filters and the Ion Exchange Column at the start of pumping and periodically afterwards
13	Monitor the filling of the main tank to avoid overflow
14	During treatment collect samples required by MSD or this plan in accordance with approved LTS&M Plan sampling procedure.
15	Pump and treat only until the sump water level reaches 16.0 inches (Below this level may introduce air into the system.)
16	When the main tank is full, turn the air compressor off and close the valve to the large effluent tank inlet, and the Ion Exchange outlet valve
17	Disconnect the Ion Exchange outlet hose from the effluent tank and place it securely in the smaller effluent tank **Caution: Disconnect slowly to avoid excess splashing.**
18	Open the outlet valve from the Ion Exchange Column and resume treatment as above until the smaller effluent tank is filled or the minimum sump level is reached
19	Stop treatment by closing butterfly valve to the sump
20	Loosen the camlock fitting at the sump connection outside the building and pump water out of the sump line, pump, and filter vessels
21	Shut the compressor down
22	Close all water valves
23	Record the final flow meter reading on the LCRS Round Sheet
24	Remove the airline and store it in the LCRS building
25	Disconnect the hoses while minimizing water release
26	Store the hoses in the LCRS building
27	Cap or plug open fitting ends
28	Drain the pump and store it in the LCRS building
29	Complete the LCRS round sheet
30	Return the compressor to the rental company after refueling it

HAULING WHILE TREATING LEACHATE PROCEDURE

NOTE: If, in the future, MSD will accept leachate without pretreatment the following procedure will be followed.

STEP	ACTION
1	Hauling takes place when the tanks are full and leachate is again being treated. The first truckload is hauled from the large tank before treatment starts to allow room for treated leachate.
2	Mark the water level on the sight tube of the large tank before removal begins.
3	The vacuum truck operator will attach the vacuum line to the large effluent tank and to the truck, open the outlet valve from the large tank and begin removal.
4	When the truck is full mark the water level on the sight tube.
5	If water removal takes place during treatment account for water added during treatment and record the load volume in the LCRS Round Sheet.
6	When removal is complete, the driver will close the outlet valve from the large effluent tank and (typically) leave the vacuum hose in place for subsequent loads. **Note: Place hose to prevent escape of water.**
7	When the last load is removed from the large effluent tank the driver will close the outlet valve from the tank and remove the hose allowing the vacuum to remove water from the hose.
8	The driver will then use additional hose to reach the smaller tank and vacuum it dry. **Caution: Make sure hose is held in place to prevent it from falling out of the tank.**
9	The driver will complete the manifest for each load and sign it.
10	An operator will sign manifest and keep the generator copy.
11	Normally about 6 loads are required for each treatment session (tanks and treated water). If the 6th load is less than 1500 gallons, hold water for next event.

HAULING DIRECTLY FROM THE SUMP PROCEDURE

STEP	ACTION
1	Record the flow meter reading on the LCRS Round Sheet
2	Record the sump water level from the control cabinet on the LCRS Round Sheet
3	Record east and west secondary leachate collection system counts on the LCRS Round Sheet
4	The truck driver will connect the vacuum truck suction line to the 3 inch camlock fitting on the south side of the LCRS Building **Caution: Ensure fittings are locked and pinned to prevent leaks.**
5	The vacuum truck driver will begin pulling a vacuum on the sump dip tube
6	Slowly open the sump valve
7	Monitor the flow at the flow meter
8	Request that the driver load the truck to near capacity
9	Ensure that a sample is collected for required MSD parameters if necessary
10	As the vacuum truck nears its capacity, slowly close the sump valve
11	The truck driver will close the inlet valve on the vacuum truck but maintain a vacuum within the tank truck
12	The driver will loosen the camlock fitting at the LCRS building connection and slowly pull the hose away from the LCRS building connection while opening the vacuum truck inlet valve. This allows most of the water in the hose and in the building piping to be vacuumed into the truck
13	The driver will close the vacuum truck inlet valve and shut off the vacuum truck pump
14	The driver will remove the hose from the vacuum truck and cap the vacuum truck inlet connection
15	Plug the sump line at the building
16	Record the flow meter reading
17	Complete the shipping manifest required by MSD
18	Keep the generator copy of the shipping manifest and ensure the driver keeps the shipping manifest in the truck
19	Repeat steps 4 through 18 until the desired sump level is reached (under these circumstances the sump may be pumped dry).
20	Record the final sump level on the LCRS Round Sheet
21	Record the final flow meter reading on the LCRS Round Sheet
22	Complete the LCRS round sheet

DISCHARGE TO MISSOURI RIVER (NPDES OUTFALL 007) PROCEDURE

NOTE: Before pumping water through the pipeline to the Missouri River, the NPDES permit must be reviewed to ensure that all criteria including sampling, notifications, and treatment requirements are met.

Background Information:

The pipeline to the Missouri River is an HDPE pipeline with a nominal maximum working pressure of 100 psi. The maximum flow rate through the pipe has been established as 400 gpm due to a 3 inch diameter constriction at a manhole located at Station 9+75. See Drawing 0284D-CP-5112 (this drawing is located at the Weldon Spring Site).

Notable features and facts on the pipeline are:

1) The pipeline is 4 inches in diameter from the Train 3 building to the gate valve located at the South end of the WSSRAP property. (See Drawing 0284D-CP-5124) (this drawing is located at the Weldon Spring Site). At this location, the pipe diameter increases to 6 inches.

2) There is a gate valve that must be opened for the pipeline to flow. The valve is located at the South end of the WSSRAP Property. See Drawing 0284D-CP-5124 (this drawing is located at the Weldon Spring Site).

3) A portion of the pipeline was placed on the surface of the ground and then covered with several feet of soil, as indicated on Drawing 0284D-CP-5123 (this drawing is located at the Weldon Spring Site). The earth mound is located along the Hamburg Hike and Bike Trail. The pipeline was placed on the ground and covered at this location because the line crossed a wooden TNT wastewater line that was thought to be potentially explosive. The TNT line was removed from beneath the water line by the Army, as part of the Weldon Spring Ordnance Works remedial activities.

4) Within the earth mound a manhole containing a vacuum breaker was constructed. The vacuum breaker was disabled, due to repeated problems. Therefore, it is imperative that vacuum relief be provided inside the LCRS Building.

5) The 6-inch pipe reduces to a 3-inch pipe (see Drawing 0284D-CP-5112) (this drawing is located at the Weldon Spring Site). This was to improve performance of a flow meter that has been removed. Debris that enters the line may bridge this constriction.

6) The outfall structure for the pipeline is located near the Hamburg Quarry. The structure should be inspected for damage and vandalism before it is used. Signs indicating the purpose of the pipe are present and face the River.

STEP	ACTION
1	Confirm that all NPDES requirements for discharge to the river have been met.
2	Open the gate valve located at the south end of the WSSRAP property.
3	Check the vacuum breaker valve in Manhole #4, along the Hamburg Trail, to ensure that it is valved closed.
4	Walk or drive the line to ensure that excavations, vandalism and/or flooding have not affected the system.
5	Provide vacuum relief for the pipeline at the connection in the Northeast corner of the Train 3 Building.
6	Provide flow measuring capability at the pipeline connection in the Northeast corner of the Train 3 Building. (Vacuum relief should be downstream of the flow meter).
7	Connect the pumping system to the flowmeter.
8	Begin pumping to the river at a flow rate below 100 gpm.
9	Over a period of 10 minutes, the flow rate may be ramped up to the maximum rate of 400 gpm. **Caution: Do not exceed 100 psi working pressure.**
10	Walk or drive the line to check for problems.

PROCEDURE FOR SHUTTING DOWN FLOW TO THE MISSOURI RIVER:

STEP	ACTION
1	Shut off the pumping system.
2	Close the gate valve located at the south end of the Weldon Spring Site property and the gate valve at the outlet of the effluent tank.
3	Record the final totalizer flow meter reading.

PROCEDURE FOR PNEUMATIC BLOW DOWN OF THE PIPELINE:

For long term shutdown of the pipeline, it may be desired that the line be blown dry with an air compressor.

The following steps have proven to be effective and successful in blowing down the pipeline.

STEP	ACTION
1	Follow all the steps to discharge water to the Missouri River listed in the section above.
2	Station an individual at the outfall to the river if the discharge is not covered with river water. This individual must be in radio or telephone contact with personnel in the LCRS Building. He/she is responsible for keeping the public away from the connection during blow down and for ordering a shut down of the operation if the action at the river is too violent. **Caution: Do not stand downstream of the discharge and no closer than 50 feet to the discharge.**
3	Connect a pressure-regulated airline to the pipeline flange fitting in the LCRS Building. **Caution: Ensure that the connection is properly pinned to prevent accidental disconnection.**
4	Slowly apply pressurized air to the line until 25 psi is reached. Maintain this pressure for a minimum of 10 minutes.
5	Over a 10 minute period, increase air pressure at the head of the line to 50 psi. Reduce pressure if violent air or water surging occurs at the discharge to the river.
6	Maintain 50 psi air pressure at the head of the line until satisfied that the line is as clear as desired. A minimum of 20 minutes at 50 psi is recommended to clear the line of most of the water.

CALIBRATION PROCEDURE FOR LS-1/LT-1/LI-1

Allow the LCRS sump to fill to at least 40 inches, as measured manually, at the sump. The greater the depth of the water, the more accurate the calibration will be. However, do not allow the sump to exceed the maximum depth of 50 inches, as damage to instrumentation will result. The depth of the sump as measured from the top of the manway ring is 189.5 inches. Because the top of the manway ring is not perfectly level, measurements shall be taken at the North side of the ring, adjacent to the West ladder rail.

STEP	ACTION
1	Subtract the distance from the top of the manway ring to the sump water level from 189.5 inches to obtain the height of the water level in the sump. (189.5 inches – distance between top of manway ring and top of water). **Note: Secure glasses and remove hats and items from shirt pockets to avoid dropping them in the sump.** **Caution: Use proper lifting technique to remove sump cover.**
2	Remove the cover from the LT 1 junction box by turning the cover counter clockwise. Once the cover is completely unscrewed, lift straight up on the cover to ensure that LT 1 is not damaged. **Caution: Remove items from shirt pockets, hats, etc. to prevent them from falling into the cabinet and damaging components.**
3	Follow the directions in the LT 1 O&M Manual to program the measurement taken in Step 1 into LT 1 as the new high level.
4	Pump the LCRS sump down to between 10 and 15 inches. This can be done over one or two days.
5	Measure the sump manually, as described above.
6	Program the value determined in Step 5 into LT 1 as the low point calibration.
7	Insert a loop calibrator into the LT 1 4-to-20 milliamp loop.
8	Follow the directions in the LT 1 O&M Manual to drive the loop from 4-to-20 milliamps.
9	Use the loop calibrator to check the current flow through the LT 1 4-to-20 milliamp loop. At 4 milliamps, the red LT 1 LED indicator should read 4.7, and at 20 milliamps, the LED indicator should read 53.0.
10	Likewise, at 4 milliamps, Chart Recorder CR 1 should read 4.7, and at 20 milliamps, Chart Recorder CR 2 should read 53.0.
11	Follow the O&M Manual directions to calibrate the LED indicator and Chart Recorder CR 1 so that these instruments match the LCD indication on LT 1.

NOTE: The accuracy of the sensor probe in the sump diminishes below 10 inches, so lower levels are not recommended. The minimum indication programmed into LT 1 is 4.7. Even if no water is in the sump, LT 1 will give this indication. This was done because a portion of the bottom portion of the probe must be covered before the probe can begin to give an indication

GENERAL ROUNDSHEET COMPLETION FOR LCRS FACILITY

STEP	ACTION
1	Initiate an LCRS round sheet.
2	Check the Methane J Vent for obstructions.
3	Operate the methane ventilation unit (fan) for approximately 5 minutes.
4	Check the sump manhole cover for integrity. Ensure that it is locked.
5	Open the sump manhole cover and look inside for any obvious problems.
6	Check for indications that the sump secondary solenoid valve is leaking. Listen for dripping water and look for rings on the surface of the water in the sump.
7	Check the LCRS sump area for proper labeling, signs of vandalism, loose or missing bolts, no smoking signs, etc.
8	Enter the LCRS Building.
9	Operate and log the status of the building fans.
10	Open the LCRS monitoring cabinet.
11	Log the values indicated by LT 1 and secondary leachate counters Leachate Counter East (LCE) and Leachate Counter West (LCW).
12	If the level indicated by LT 1 is forty inches or greater, schedule an LCRS pump out as necessary to keep the water level in the sump from exceeding 47 inches.
13	Open the inner door of the LCRS cabinet and check for signs of problems.
14	Check the breakers in the breaker panel and note any that are tripped or in the off position in the comments section of the round sheets (spare breakers excluded).
15	Close the breaker panel door, the inner door and the outer door of the LCRS monitoring cabinet.
16	Tour the building. Check for signs of electrical problems, leaks, storm damage, vandalism, animal intrusion and proper operation of the electric heaters.

LCRS Inspection Form

Date:_____

LCRS SUMP – LT-1	
INITIAL SUMP LEVEL–inches(gallons)	FINAL SUMP LEVEL–inches(gallons)

EAST SECONDARY SYSTEM			
Previous 403 Counter Date:	Current 403 Counter	Number of Counts	Total Gallons Counts X 0.58

WEST SECONDARY SYSTEM			
Previous 401 Counter Date:	Current 401 Counter	Number of Counts	Total Gallons Counts X 0.5

Notes/Truckload Information

BURRITO – SECONDARY CONTAINMENT		PURGE WATER
Initial Static Water Level (inches)	Volume Pumped to Sump Gallons	Transferred to Sump Gallons

VOLUME OF LEACHATE TREATED	
Final Flow Meter Reading	
Initial Flow Meter Reading	
Total Gallons	

SAMPLES COLLECTED (TIME)		
LW-DC10 (Leachate)	LW-DC11 (After Filter)	LW-DC12 (Pre-Treated)

Total Volume Shipped to MSD:_____

Building/Sump Ventilation Status:_____

COMMENTS:

SIGNED:_____