

STATE OF KANSAS

DEPARTMENT OF HEALTH AND ENVIRONMENT DIVISION OF ENVIRONMENT

Hazardous Waste Management Facility Permit Part I

In accordance with the provisions of Kansas Statutes Annotated 65-3430 et. seq. permission is hereby granted to:

Facility Name: MRP Properties Company, LLC

Operator: MRP Properties Company, LLC

Owner: MRP Properties Company, LLC

Location: 1400 South M Street
Arkansas City, Kansas 67005

E.P.A. Identification Number: KSD087418695

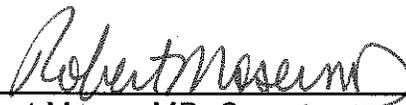
for closure, post-closure care, and groundwater corrective action and monitoring of hazardous waste disposal units.

This permit (Part I) is being issued in accordance with rules and regulations of the Department of Health and Environment and the following-named conditions and requirements to wit: The Permittee must comply with all terms and conditions in Section I through Section V of this permit. The permit consists of the conditions contained herein, including those in any attachments, the permit application and all applicable hazardous waste regulations contained in K.A.R. 28-31-4 through 28-31-279a in effect on the date of issuance of this permit. This permit shall remain in effect even if the Hazardous and Solid Waste Amendments permit (Part II) is terminated or expired.

This permit shall become effective at 12:01 a.m. on October 28, 2012 and shall remain in effect until September 28, 2022 unless revoked and reissued, or terminated or continued in accordance with K.A.R. 28-31-124b.

Done at Topeka, this 28 day of September 2012





Robert Moser, MD, Secretary
Kansas Department of Health and Environment

HAZARDOUS WASTE FACILITY PERMIT

**MRP PROPERTIES COMPANY, LLC
ARKANSAS CITY, KANSAS
EPA ID# KSD087418695**

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SECTION I - STANDARD PERMIT CONDITIONS

I.A. EFFECT OF PERMIT

MRP Properties Company, LLC, a wholly-owned subsidiary of Valero Energy Corporation, herein referred to as the Permittee, is required to perform closure of the Land Treatment Unit (LTU), post-closure care for the #1 Surface Impoundment, #2 Surface Impoundment, #3A Aerated Lagoon, and the Land Treatment Unit; compliance monitoring; and corrective action for the Waste Management Area at the facility as defined in the approved Permit Application, located at Arkansas City, Kansas, in accordance with the terms and conditions of this Permit and Kansas Administrative Regulations (K.A.R.) 28-31-4 through 28-31-279a. Any treatment, storage or disposal of hazardous waste not authorized in this Permit is strictly prohibited. This Permit consists of the terms and conditions contained herein, including those in any attachments; in the approved Permit Application (Part A and Part B); and the applicable regulations contained in 40 CFR Parts 124, 260 through 264, 268, and 270. Applicable regulations are those in effect on the date of issuance of this Permit. [40 CFR 270.32(c)] Federal regulations are referenced in Kansas Administrative Regulations (K.A.R.) 28-31-4 through 28-31-279a. Each reference in this permit to a federal regulation shall mean that federal regulation as adopted by reference in K.A.R. 28-31-124 through 28-31-279. All citations to federal regulations are for the sake of convenience. In the instance of inconsistent language or discrepancies between permit conditions, state regulations, or federal regulations, the language of the more stringent provision shall govern.

Subject to 40 CFR 270.4, compliance with this Permit constitutes compliance, for purposes of enforcement, with K.S.A. 65-3430 et seq. and K.A.R. 28-31-4 through 28-31-279a and Subtitle C of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA). Issuance of this Permit does not convey any property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance, with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 106(a), 104, or 107 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. 9606 et seq., commonly known as CERCLA), or any other law providing for the protection of public health or the environment. [40 CFR 270.4, 270.30(g)]

The Secretary and Director have agreed, as stated in Part II of this Permit, that KDHE will be the lead oversight agency for implementation and administration of this permit. Although not authorized, Kansas has adopted the requirements of 40 CFR 264.101. Therefore, the Permittee shall complete all requirements of Part II of the Permit in accordance with 40 CFR 264.101. [K.S.A. 65-3430 and K.A.R. 28-31-264] The

Permittee shall fulfill the requirements of Part II of the Permit under the oversight of KDHE as the lead agency.

Although KDHE is the lead agency for this Permit, EPA retains enforcement authority for the Hazardous and Solid Waste Amendments (HSWA) Part II requirements of the Permit.

I.B. PERMIT ACTIONS

I.B.1. Permit Modification, Revocation and Reissuance, and Termination

This Permit may be modified, revoked and reissued, or terminated for cause, as specified in 40 CFR 270.41, 270.42, and 270.43. If cause exists, the Secretary may modify or revoke and reissue this Permit in accordance with 40 CFR 270.41. When this Permit is modified, only the conditions subject to the modification are reopened. If this Permit is revoked and reissued, the entire Permit is reopened and subject to revision, and may be reissued for a new term.

The Secretary will, upon request by the Permittee, approve or deny modifications to this Permit in accordance with 40 CFR 270.42. The modification will become an enforceable part of this Permit. The filing of a request for permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any Permit condition. [40 CFR 270.4(a) and 270.30(f)]

I.B.2. Permit Renewal

This Permit may be renewed as specified in 40 CFR 270.30(b) and Permit Condition I.E.2. Review of any application for a Permit renewal shall consider improvements in the area of control and measurement technology, as well as changes in applicable regulations. [40 CFR 270.30(b), HSWA Sec.212]

I.B.3. Permit Review

The Permittee shall submit a report to the Secretary five (5) years after the effective date of this Permit. This report shall provide a detailed evaluation of the overall effectiveness of the groundwater corrective action program during the initial fifty-four (54) months of the permit. The evaluation shall also provide an assessment of the groundwater corrective action and compliance monitoring programs. Upon review of this report, the Secretary may require additional investigation and/or modify the permit as specified in Permit Condition IV.G.

I.C. SEVERABILITY

The provisions of this Permit are severable, and if any provision 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. [40 CFR 124.16(a)]

I.D. DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in K.S.A. 65-3430 and K.A.R. 28-31-264 and 28-31-264a, and in 40 CFR Parts 124, 260, 262, 264, 266, 268, and 270, unless this Permit specifically provides otherwise. When the same word is defined in the Kansas statutes or regulations and in the federal regulations and the definitions are not identical, the definition in the Kansas statutes or regulations shall control. [K.A.R. 28-31-260a(b)] “Secretary” means the Secretary of the Kansas Department of Health and Environment (KDHE), or a designee or authorized representative of KDHE. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.E. DUTIES AND REQUIREMENTS

I.E.1. Duty to Comply

The Permittee shall comply with all conditions of this Permit, except as to the extent and for the duration such noncompliance is authorized by an emergency permit. [40 CFR 270.61] Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application. [40 CFR 270.30(a)]

I.E.2. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee shall submit a complete application for a new permit at least one hundred and eighty (180) days before this Permit expires, unless permission for a later submission date has been granted by the Secretary. [40 CFR 270.10(h), 270.30(b)]

I.E.3. Permit Expiration

Pursuant to 40 CFR 270.50, this Permit shall be effective for a fixed term not to exceed ten (10) years. As long as KDHE is the permit-issuing authority, this Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete application (see

40 CFR 270.10, 270.13 through 270.29) and, through no fault of the Permittee, the Secretary has not issued a new Permit, as set forth in 40 CFR 270.51.

I.E.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.[40 CFR 270.30(c)]

I.E.5. Duty to Mitigate

In the event of noncompliance with the Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. [40 CFR 270.30(d)]

I.E.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit. [40 CFR 270.30(e)]

I.E.7. Duty to Provide Information

The Permittee shall furnish to the Secretary, within a time period specified by the Secretary, any relevant information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this Permit. [40 CFR 264.74(a), 270.30(h)]

I.E.8. Inspection and Entry

Pursuant to 40 CFR 270.30(i) and K.A.R. 28-31-12, the Permittee shall allow the Secretary, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- I.E.8.a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
- I.E.8.b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
- I.E.8.c. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- I.E.8.d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.E.9. Monitoring and Records

- I.E.9.a. Pursuant to 40 CFR 270.30(j)(1), samples and measurements taken, to comply with this Permit, for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the medium to be analyzed for a given hazardous constituent must be the appropriate method from Appendix I of 40 CFR Part 261 or equivalent method approved by the Secretary. Laboratory methods must be those specified in the latest revision of EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," or an equivalent method as specified in the Waste Analysis Plan contained in the approved Part B permit application. All constituent chemical analysis shall be performed by a laboratory certified by KDHE in accordance with K.A.R. 28-31-264a(f).
- I.E.9.b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, the certification required by 40 CFR 264.73(b)(9), 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 certification of application. This period may be extended by request of the Secretary at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the

facility, and for disposal facilities for the post-closure care period as well [40 CFR 264.74(b) and 270.30(j)(2)].

I.E.9.c. Records of monitoring information as required by Permit Condition I.E.9.b. shall include [40 CFR 270.30(j)(3)]:

- i. The dates, exact place, and times of sampling or measurements;
- ii. The individual(s) who performed the sampling or measurements;
- iii. The dates 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 including laboratory QA/QC documentation.

I.E.10. Reporting Planned Changes

The Permittee shall give notice to the Secretary twenty (20) days prior to any planned physical alterations or additions to the permitted facility. The replacement of worn or broken parts need not be reported as long as replacement is with an equivalent component, which does not adversely affect the designed operating procedures or performance of the facility. [40 CFR 270.30(l)(1)]

I.E.11. Reporting Anticipated Noncompliance

The Permittee shall give notice to the Secretary twenty (20) days prior to any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements. Such notification does not waive the Permittee's duty to comply with this permit pursuant to condition I.E.1. [40 CFR 270.30(l)(2)]

I.E.12. Transfer of Permit

Before transferring ownership or operation of the Facility or any part of the Facility, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270 and this Permit. At least ninety (90) calendar days prior to the anticipated date of transfer, the new owner and/or operator shall submit to the EPA and KDHE a certification that the new owner or operator has read this Permit, understand its requirements and will comply with the terms and conditions herein. If the property transfer involves subdividing the

property to more than one owner or operator, a map and legal description shall be provided to the Secretary that identifies the properties to be occupied by each new owner. [40 CFR 264.12(c)]

An owner or operator's failure to notify the new owner or operator of the requirements of this Permit in no way relieves the new owner or operator of his obligation to comply with all applicable requirements. [40 CFR 264.12]

The Permit will be modified or revoked and reissued in accordance with 40 CFR 270.40(b) or 270.41(b)(2) respectively. The Secretary may incorporate such other requirements as may be necessary under RCRA as part of the modification to this Permit [40 CFR 270.30(1)(3)].

In order to transfer the Facility or any part of the Facility, the new owner and/or operator shall submit a revised permit application no later than ninety (90) days prior to the scheduled change in ownership and/or operational control. A written agreement containing a specific date for transfer of permit responsibility between the Permittee and new Permittee(s) must also be submitted no later than ninety (90) days prior to the scheduled change in ownership and/or operational control. [40 CFR 270.40(b)]

I.E.12.a. Whenever this Permit is transferred to a new Permittee, the old Permittee shall maintain compliance with the requirements of 40 CFR 264 Subpart H, (Financial Requirements) until the new Permittee has demonstrated compliance with the requirements of that subpart. The new Permittee shall demonstrate compliance with 40 CFR 264 Subpart H, within six (6) months of the date of the transfer of this Permit. Upon the new Permittee's demonstration of compliance with 40 CFR 264, Subpart H, the Secretary shall notify the old Permittee that maintaining financial assurances pursuant to that subpart (40 CFR 270.40(b)) is no longer necessary.

I.E.12.b. Whenever this Permit is transferred to a new Permittee, the old Permittee shall maintain compliance with the requirements of Permit Condition II.M., until such time as the new Permittee has demonstrated compliance with these requirements. The new Permittee shall demonstrate compliance with the requirements of Permit Condition II.M. within six (6) months of the date of the transfer of this Permit. Upon the new Permittee's demonstration of compliance with Permit Condition II.M., the Secretary shall notify the old Permittee that maintaining financial assurances pursuant to Permit Condition II.M. is no longer required pursuant to Permit Condition II.M.

- I.E.12.c. In the case of bankruptcy of the Permittee pursuant to Title 11 of the United States Code, the bankruptcy Trustee shall provide the required notices to the Secretary and shall ensure the new owner and/or operator submits a revised permit application no later than ninety (90) days prior to the scheduled change in ownership and/or operational control. A written agreement containing a specific date for transfer of permit responsibility between the Court and/or the old Permittee and new Permittee(s) must also be submitted no later than ninety (90) days prior to the scheduled change in ownership and/or operational control. The new Permittee shall demonstrate compliance with 40 CFR 264 Subpart H and/or Permit Condition II.M. within six (6) months of the date of the transfer of this Permit. Upon the new Permittee's demonstration of compliance with 40 CFR 264 Subpart H and/or Permit Condition II.M., the Secretary shall notify the old Permittee that maintaining financial assurances pursuant to that subpart (40 CFR 270.40(b)) and/or Permit Condition II.M. is no longer necessary.

I.E.13. Twenty-Four Hour Reporting

- I.E.13.a. Pursuant to 40 CFR 270.30(l)(6), the Permittee shall report to the Secretary any noncompliance with the Permit which may endanger human health or the environment. Any such information shall be reported orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. The report shall include the following:
- i. Information concerning release of any hazardous waste which may cause an endangerment to public drinking water supplies; and
 - ii. Any information of a release or discharge of hazardous waste or of a fire or explosion from the hazardous waste management facility, which could threaten the environment or human health outside the facility.
- I.E.13.b. The description of the occurrence and its cause shall include:
- i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of materials involved;
 - v. The extent of injuries, if any;

- vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
- vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.13.c. A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Secretary may waive the five-day written notice requirement in favor of a written report within fifteen (15) days. [40 CFR 270.30(l)(6)]

I.E.14. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above in Permit Conditions I.E.10. thru I.E.13., at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition I.E.13. [40 CFR 270.30(l)(10)]

I.E.15. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in an application or in any report to the Secretary, the Permittee shall promptly submit such facts or information. [40 CFR 270.30(l)(11)]

I.E.16. Other Requirements

- I.E.16.a. The Permittee shall defend, indemnify, and hold harmless the State of Kansas, its officers, agents, and employees, officially or personally, against all actions, claims, and demands whatsoever which may arise from or on account of the issuance of this Permit or the construction or maintenance of any facilities hereunder.
- I.E.16.b. Within thirty (30) calendar days after receipt of the final Permit, the Permittee shall submit a certification that the applicant has read the Permit in its entirety and understands all the Permit Conditions contained herein.

I.F. SIGNATORY REQUIREMENT

All applications, reports, or other information submitted to or requested by the Secretary, a designee, or authorized representative, shall be signed and certified in accordance with 40 CFR 270.11 and 270.30(k).

I.G. WASTE MINIMIZATION

I.G.1 Pursuant to 40 CFR 264.73(b)(9), and Section 3005(h) of RCRA, 42, USC 6925(h), the Permittee must record and maintain in the facility operating record, at least annually, a waste minimization certification that:

I.G.1.a. Specifies the Permittee has a program in place to reduce the volume and toxicity of all hazardous waste and/or hazardous constituents generated by the facility's operation to the degree determined by the Permittee to be economically practicable; and

I.G.1.b. The proposed method of treatment, storage or disposal is the practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

I.G.2. The Permittee shall maintain copies of this certification and supporting documents in the facility operating record as required by Permit Condition I.J.4. and 40 CFR 264.73(b)(9).

I.H. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE SECRETARY

One copy (1) of all reports, notifications, or other submissions which are required by this Permit shall be reported or sent directly to the following:

**Chief of the Hazardous Waste Permits Section
Kansas Department of Health and Environment
Bureau of Waste Management
1000 SW Jackson, Suite 320
Topeka, Kansas 66612-1366
Telephone Number (785) 296-1600**

In addition, one (2) copies of all reports, notifications or other submissions shall be submitted to:

**U.S. Environmental Protection Agency Region 7
Attn: Chief, Waste Remediation and Permitting Branch
Air and Waste Management Division**

**901 N. 5th Street
Kansas City, Kansas 66101**

I.I. CONFIDENTIAL INFORMATION

In accordance with 40 CFR 270.12 and K.S.A. 65-3447, the Permittee may claim confidential any information required to be submitted by this Permit. This claim must be asserted at the time of submission.

I.J. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, until (1) closure is completed and certified by a Kansas professional engineer or Kansas licensed geologist and the owner, and (2) the post-closure care period is completed and certified by a Kansas professional engineer and the owner, the following documents and amendments, revisions and modifications to these documents:

- I.J.1. A copy of this Permit, including all approved permit modifications.
- I.J.2. A copy of the approved Part A and approved Part B Post-Closure Permit Application including, but not limited to the following:
 - I.J.2.a. Waste Analysis Plan, as required by 40 CFR 264.13 and this Permit.
 - I.J.2.b. Inspection schedules and documents, as required by 40 CFR 264.15(b) and this Permit.
 - I.J.2.c. Approved Groundwater Monitoring Plan as required by 40 CFR 270.14(c)(5) and this Permit.
 - I.J.2.d. Corrective Action Plan and Engineering Feasibility Plan as required by 40 CFR 270.14(c)(8) and this Permit.
 - I.J.2.e. Contingency Plan, as required by 40 CFR 264.53(a) and this Permit.
 - I.J.2.f. Closure Plan, as required by 40 CFR 264.112(a) and this Permit.
 - I.J.2.g. Post-Closure Plan(s) as required by 40 CFR 264.118(a) and 270.14(b)(13) and this Permit.
 - I.J.2.h. Waste Characterization as required by 40 CFR 270.14(b)(2) and (3), and this Permit.

- I.J.3. Personnel training documents and records as required by 40 CFR 264.16(d) and (e) and this Permit. The training records on former employees must be kept for at least five (5) years from the date the employee last worked at the facility.
- I.J.4. Operating record, as required by 40 CFR 264.73 and this Permit.
- I.J.5. Annually adjusted cost estimate for facility closure, post-closure care, and corrective action as required by 40 CFR 264.142(d), K.S.A. 28-31-264(c)(9), and Permit Condition II.M.1.b.
- I.J.6. All other documents required by Permit Condition I.E.9.
- I.J.7. Documentation that notices have been filed as required under 40 CFR 264.119 and 40 CFR 270.14(b)(14) and as required by this Permit.

I.K. PENALTIES

Failure to comply with the terms of this Permit may subject the Permittee to an administrative and/or civil penalty, a criminal penalty and/or an action to suspend or revoke this Permit. Failure to minimize or mitigate any adverse impact on the environment resulting from noncompliance may serve to increase the severity of such penalties. [K.S.A. 65-3444 and 65-3446]

I.L. DISPUTE RESOLUTION

If the Permittee takes exception to any disapproval, modification, or other decision or directive made by the Secretary pursuant to provisions of the Permit, the Permittee shall follow the dispute resolution procedures outlined in Permit Conditions I.L.1 and I.L.2.

- I.L.1. If the Permittee disagrees, in whole or in part, with any disapproval, modification, or other decision or directive made by the Secretary pursuant to provisions of this permit, the Permittee shall notify the Secretary in writing of any objections and basis for them within fifteen (15) calendar days of receipt of the Secretary's disapproval, decision, or directive. The notice shall set forth specific points of the dispute, the position the Permittee maintains should be adopted as consistent with the requirements of this permit, the factual and legal basis for the Permittee's position, and all matters the Permittee considers necessary for the Secretary's determination. The Secretary and Permittee shall then have an additional thirty (30) calendar days from the Secretary's receipt of the Permittee's objection to attempt to resolve the dispute. If agreement is reached, the resolution will be reduced to writing by the Secretary and shall become part of this permit. If the parties are unable to reach agreement within this 30-day period, the Secretary shall issue its final decision on the dispute, in writing. The Permittee reserves its right to appeal any decision to the Secretary in accordance with K.S.A. 65-3440,

and the Secretary shall notify the Permittee in writing of the final resolution of the dispute, and the reasons for this resolution. The final resolution of such dispute shall be incorporated into and made an enforceable part of this permit.

- I.L.2. The existence of a dispute as defined herein and the Secretary's consideration of such matters as placed in dispute shall not excuse, toll, or suspend any obligation or deadline required pursuant to this permit, that is not the subject of dispute, during pendency of the dispute resolution process.

SECTION II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

The Permittee shall design, construct, maintain, and operate the facility to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment (40 CFR 264.31). This includes adherence to operating conditions and procedures, and emergency shutdown procedures specified in the permit application and in this Permit.

II.B. REQUIRED NOTICES

II.B.1. Transferring Ownership or Operation

Before transferring ownership or operation of the facility during closure and/or post-closure period, the owner or operator must notify the new owner or operator in writing of the requirements of K.A.R. 28-31-124a(b), 40 CFR Parts 264 and 270, and this Permit. [40 CFR 264.12(c)]

II.B.2. Notice in Deed to Property

Pursuant to K.A.R 28-31-264a(b), the facility property owner shall record, in accordance with Kansas law, a notice with the register of deeds in the county where the property is located. The notice shall include the following information:

II.B.2.a. The land has been used to manage hazardous waste.

II.B.2.b. All records regarding permits, closure, or both are available for review at the department.

II.C. GENERAL WASTE ANALYSIS

The Permittee shall follow the procedures described in the approved Part B Permit Application. Waste analysis shall comply with the requirements of 40 CFR 270.14(b)(2) and (3) and this Permit. The Permittee shall record the waste characterization analysis and any relevant analytical results for the hazardous waste applied to the Land Treatment Unit, and the closed #1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon obtained during closure and the post-closure period and maintain this information in the operating record [40 CFR 264.73(b)(3)]. This information must be maintained until the post-closure period is complete as specified by Permit Condition I.J.

II.D. SECURITY

The Permittee shall comply with the security provisions of 40 CFR 264.14(b)(2) and (c) and the Security Plan, Section 5 of the approved Part B Permit Application.

II.D.1. Prevention of Unknown Entry

The Permittee must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the grounds of the facility. A twenty-four (24) hour surveillance system or an artificial or natural barrier which completely surrounds the facility and a means to control entry through gates or other entrances to the facility must be maintained at all times.

II.D.2. Posting of Signs

In addition, the Permittee must post signs bearing the legend “Danger-Authorized Personnel Only” at each entrance to the facility and at other locations in sufficient numbers to be seen from any approach to each portion of the facility in compliance with 40 CFR 264.14(c). This legend must be written in English and any other language predominant in the area surrounding the facility and must be legible from a distance of at least twenty-five (25) feet.

II.D.3. Notification of Unauthorized Entry

The Permittee will advise the Secretary if unauthorized entry occurred at the facility which caused hazardous waste to be discharged, the nature of the problems, if any, that resulted from this occurrence, and corrective action taken by the facility to prevent future happenings. This includes any tampering, destruction, or loss at the facility that caused release of hazardous waste.

II.E. GENERAL INSPECTION REQUIREMENTS

The Permittee shall follow the inspection schedule set out in Inspection Schedule, Section 6 of the approved Part B Permit Application. The Permittee shall remedy any deterioration or malfunction discovered by an inspection, as required by 40 CFR 264.15(c). Records of inspection shall be kept, as required by 40 CFR 264.15(d).

II.E.1. Inspections for Malfunctions and Deterioration

The Permittee shall inspect the facility as required by 40 CFR 264.15 and the approved Part B Permit Application for malfunctions and deterioration, operator errors and discharges which may be causing or may lead to (1) release of hazardous waste constituents to the environment, in particular, the Walnut River, or (2) a threat to human health.

II.E.2. Schedule of Inspections

The Permittee shall follow the written schedule in the Inspection Schedule, Section 6 of the approved Part B Permit Application for the inspection of monitoring and remediation equipment, safety and emergency equipment, security devices, and operating, remediation, and structural equipment that are for the purpose of preventing, detecting, or responding to environmental or human health hazards. The Permittee shall keep this schedule at the facility.

II.E.3. Records of Inspections

The Permittee shall record inspections required by Permit Condition II.E.2. in an inspection log or summary. The log or summary shall be kept for at least three (3) years from the date of inspection. At a minimum, the items to be inspected must include those identified in the approved Part B Permit Application. The logs must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

II.E.4. Remedial Action Resulting from Inspections

The Permittee shall remedy any observed deterioration or malfunction of equipment or structures to ensure that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

II.F. PERSONNEL TRAINING

The Permittee shall conduct personnel training as required by 40 CFR 264.16 for all facility personnel involved in implementing the post-closure activities specified in the permit. This training shall be in accordance with Personnel Training, Section 11 of the approved Part B Permit Application. The Permittee shall maintain training documents and records, as required by 40 CFR 264.16(d) and (e).

II.G. LOCATION STANDARDS

The Permittee shall maintain the facility to prevent washout of any hazardous waste by a 100-year flood, as required by 40 CFR 264.18(b)(1) and as specified in the Location Information, Section 10 of the approved Part B Permit Application.

The facility is located in Cowley County, Kansas, which is not listed in Appendix VI of 40 CFR 264. Therefore, no further demonstration for the seismic standard of 264.18(a) is required.

II.H. PREPAREDNESS AND PREVENTION

II.H.1. Required Equipment

At a minimum, the Permittee shall maintain at the facility the safety and emergency equipment set forth in the Contingency Plan, Appendix G of the approved Part B Permit Application, as required by 40 CFR 264.32.

II.H.2. Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.H.1, as necessary, to assure its proper operation in time of emergency, as required by 40 CFR 264.33.

II.H.3. Access to Communications or Alarm System

The Permittee shall maintain access to the communications or alarm system, as required by 40 CFR 264.34 and as specified in Emergency Preparedness and Prevention, Section 8 of the approved Part B Permit Application.

II.H.4. Arrangements with Local Authorities

The Permittee shall maintain arrangements with state and local authorities, as required by 40 CFR 264.37. If state or local officials refuse to enter into preparedness and prevention arrangements, the Permittee must document the refusal in the operating record.

II.I. CONTINGENCY PLAN

II.I.1. Implementation of Plan

The Permittee shall immediately carry out the provisions of the Contingency Plan, Appendix G of the approved Part B Permit Application, whenever there is a fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment.

II.I.2. Copies of Plan

Copies of the contingency plan and all revisions to the plans must be:

II.I.2.a. Maintained at the facility; and

II.I.2.b. Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services. [40 CFR 264.53]

II.I.3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the Contingency Plan, as required by 40 CFR 264.54. Amendments to the Contingency Plan are subject to the permit modification requirements of 40 CFR 270.41 and 270.42.

II.I.4. Emergency Coordinator

A trained Emergency Coordinator shall be available at all times in case of an emergency, as required by 40 CFR 264.55. The Emergency Coordinator shall have the authority to commit the resources needed to carry out the contingency plan.

The names, addresses, and telephone numbers of all persons qualified to act as Emergency Coordinators shall be listed in the Contingency Plan. [40 CFR 264.52(d)]

II.I.5. Emergency Procedures

Whenever there is an imminent or actual emergency situation, the Permittee shall immediately comply with the requirements of 40 CFR 264.56.

II.J. RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall do the following:

II.J.1. Operating Record

The Permittee shall maintain a written operating record at the facility, in accordance with 40 CFR 264.73.

II.J.2. Availability, Retention, and Disposition of Records

The Permittee shall comply with the maintenance, retention, and disposition of all records in accordance with the requirements of 40 CFR 264.74.

II.J.3. Biennial Report

The Permittee shall comply with the biennial report requirements of 40 CFR 264.75 and 270.30(1)(9) and any other annual reporting requirement of the Secretary.

II.J.4. Manifests

Whenever a shipment of hazardous waste is initiated from the facility, the Permittee shall comply with the generator requirements in 40 CFR 264.71(c).

II.K. GENERAL CLOSURE REQUIREMENTS

II.K.1. Performance Standard

The Permittee shall close the Land Treatment Unit, as required by 40 CFR 264.111, 264.112(a) and (b), 264.280 and in accordance with the Land Treatment Unit Closure Plan, Appendix I of the approved Part B Permit Application.

II.K.2. Amendment to Closure Plan

The Permittee shall amend the Closure Plan, in accordance with 40 CFR 264.112(c), whenever necessary. Amendment of the closure plan is subject to the permit modification requirements of 40 CFR 270.42

II.K.3. Notification of Closure

The Permittee shall notify the Secretary in writing at least sixty (60) days prior to the date on which they expect to begin final closure of the Land Treatment Unit or final closure of the facility, as required by 40 CFR 264.112(d).

II.K.4. Time Allowed for Closure

After receiving the final volume of hazardous waste, the Permittee shall treat or remove from the unit or facility, all hazardous waste and shall complete closure activities, in accordance with 40 CFR 264.113 and the schedules specified in the Land Treatment Unit Closure Plan, Appendix I of the approved Part B Permit Application.

II.K.5. Disposal or Decontamination of Equipment, Structures, and Soils

The Permittee shall decontaminate and/or dispose of all contaminated equipment, structures, and soils, as required by 40 CFR 264.114 and the Land Treatment Unit Closure Plan, Appendix I of the approved Part B Permit Application.

II.K.6. Certification of Closure

The Permittee shall certify that the facility has been closed in accordance with the specifications in the Land Treatment Unit Closure Plan, Appendix I of the approved Part B Permit Application, as required by 40 CFR 264.115.

II.K.7. Survey Plat

The Permittee shall submit a survey plat no later than the submission of certification of closure of the Land Treatment Unit, in accordance with 40 CFR 264.116 and K.A.R. 28-31-264a

II.L. GENERAL POST-CLOSURE REQUIREMENTS

II.L.1. Post-Closure Care Period

The Permittee shall perform post-closure care for each unit closed (#1 Surface Impoundment, #2 Surface Impoundment, #3A Aerated Lagoon, and Land Treatment Unit) throughout the post-closure care period. The post-closure care period will begin the date of certification of closure, and shall continue for thirty (30) years after that date, unless otherwise specified by the Secretary. The post-closure care period shall be automatically extended for the duration of any unresolved groundwater corrective action. Post-closure care shall be in accordance with 40 CFR 264.117, the requirements of the approved Part B Permit Application, and this permit.

II.L.2. Post-Closure Security

The Permittee shall maintain security at the facility during the post-closure care period, in accordance with the approved Part B Permit Application and 40 CFR 264.117(b).

II.L.3. Amendment to Post-Closure Plan

The Permittee shall amend the Post-Closure Plan in accordance with 40 CFR 264.118(d).

II.L.4. Post-Closure Notices

II.L.4.a. No later than sixty (60) days after certification of closure of the Land Treatment Unit, the Permittee shall submit records of the type, location, and quantity of hazardous waste disposed within each cell or disposal unit, in accordance with 40 CFR 264.119(a).

- II.L.4.b. Within sixty (60) days of certification of closure of the Land Treatment Unit, the Permittee shall do the following:
- i. Record a notation on the deed to the facility property, in accordance with 40 CFR 264.119(b)(1) and K.A.R. 28-31-264a.
 - ii. Submit a certification that a notation in accordance with Permit Condition II.L.4.b.i. has been recorded.
- II.L.4.c. The Permittee shall request and obtain a Permit modification prior to post-closure removal of hazardous wastes, hazardous waste residues, liners, or contaminated soils in accordance with 40 CFR 264.119(c).

II.L.5. Certification of Completion of Post-Closure Care

The Permittee shall certify that the post-closure care was performed in accordance with the specifications in all approved Post-Closure Plans and all other requirements for post-closure care. The certification must be signed by the Permittee and a Kansas professional engineer within sixty (60) days after completion of the established post-closure care period pursuant to 40 CFR 264.120.

II.M. FINANCIAL REQUIREMENTS

II.M.1. Cost Estimate for Closure, Post-Closure Care, and Corrective Action

- II.M.1.a. The Permittee's current cost estimate for closure, post-closure care, and groundwater corrective action prepared in accordance with 40 CFR 264.142(a) and 264.144(a), is contained in the Cost Estimates for Closure and Post-Closure, Appendix L of the approved Part B Permit Application. The cost estimate must be based on the plan implementation cost, in current dollars, assuming that a third party performs the work.
- II.M.1.b. The Permittee shall adjust the cost estimates annually for inflation within sixty (60) days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with 40 CFR 264.143 and 264.145. [40 CFR 264.142(b), 264.144(b), and K.S.A. 28-31-264(c)(9)]

If using the financial test and corporate guarantee demonstration, the Permittee shall adjust the closure cost estimate for inflation within thirty (30) days after the close of the firm's fiscal year and before submission of updated information to the Secretary.

The adjustment shall be made by either recalculating the maximum cost of closure or by using an inflation factor derived from the most current quarterly Implicit Price Deflator for Gross Domestic Product published by the U.S. Department of Commerce in its Survey of Current Business. [40 CFR 264.142(b) and 264.144(b)]

- II.M.1.c. The Permittee shall revise the cost estimate in the approved Part B permit application whenever there is a change in the facility's closure and/or post-closure care plan as required by 40 CFR 264.142(c) and 264.144(c). This type of revision is subject to the permit modification requirements of 40 CFR 270.41 and 270.42 and Permit Condition I.B.1.
- II.M.1.d. The Permittee shall keep at the facility the latest adjusted closure cost estimate as required by 40 CFR 264.142(d), 264.144(d), and Permit Condition I.J.5.

II.M.2. Liability Requirements

II.M.2.a. Sudden and Non-Sudden Accidental Occurrences

The Permittee shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden and non-sudden accidental occurrences arising from operations of the facility. The Permittee shall maintain liability coverage for sudden accidental occurrences in the amount of at least one million dollars (\$1,000,000) per occurrence with an annual aggregate of at least two million dollars (\$2,000,000), exclusive of legal defense costs and non-sudden accidental occurrences in the amount of at least three million dollars (\$3,000,000) per occurrence with an annual aggregate of at least six million dollars (\$6,000,000), exclusive of legal defense costs. [40 CFR 264.147(a) and (b)]

II.M.3. Financial Assurance for Facility Closure, Post-Closure, and Corrective Action

The Permittee shall demonstrate continuous compliance by providing documentation of financial assurance, as required by 40 CFR 264.143, 264.145, and 264.147, in at least the amount of the cost estimates required by Permit Condition II.M.1. and II.M.2. The Permittee shall maintain documentation demonstrating the Permittee's financial assurance in the approved Part B Permit Application, in accordance with 40 CFR 264.143, 264.145, and 264.147.

Changes in financial assurance mechanisms and coverage amount must be approved by the Secretary pursuant to 40 CFR 264.143, 264.145, and 264.147.

In accordance with K.A.R. 28-31-264(c), modifications shall be made to 40 CFR 264. Additional state financial assurance requirements must be met as established in K.A.R. 28-31-264a(a).

II.M.4. Incapacity of Owners or Operators, Guarantors, or Financial Institutions

The Permittee shall comply with 40 CFR 264.148 whenever necessary.

II.M.5. Permit Fees

II.M.5.a. The Permittee shall submit \$10,000 annually in permitting fees in accordance with K.S.A. 65-3431(v)(1). This annual amount is due on or before the first day of April for the duration of this Permit. The fee is based on resources required for implementation of this Permit. The Secretary will review the permitting fees annually to determine if an adjustment is necessary. Additional costs or credits associated with the resources required for administration of this Permit will be applied to next year. The fees established shall not exceed \$175,000 for duration of this Permit.

II.M.5.b. This permit fee shall not affect the requirements established in K.A.R. 28-31-10 for the hazardous waste monitoring fees.

SECTION III – CLOSURE AND POST-CLOSURE CARE

III.A. GENERAL CONDITIONS

The Permittee shall provide closure for the Land Treatment Unit (LTU) and post-closure care for closed units in accordance with the terms and conditions of this Permit. This closure and post-closure care shall be in accordance with the Land Treatment Unit Closure Plan and Post-Closure Plan, Section 12 and 13 of the approved Part B Permit Application and 40 CFR 264.110.

The conditions of Section III of this Permit apply to the following hazardous waste management units:

Table 1 – Hazardous Waste Management Units

UNIT NAME	STATUS
#1 Surface Impoundment	Post-Closure
#2 Surface Impoundment	Post-Closure
#3A Aerated Lagoon	Post-Closure
Land Treatment Unit	Closure

III.B. CLOSURE REQUIREMENTS FOR THE LAND TREATMENT UNIT

III.B.1. Performance Standard

The Permittee shall close the LTU as required by 40 CFR 264.111 and this Permit in accordance with the Land Treatment Unit Closure Plan, Section 12 of the approved Part B Permit Application. The completion of the closure of the LTU will constitute final closure of the former Total Petroleum refinery pursuant to the RCRA facility operating permit portion of this permit.

III.B.2.LTU Closure Plan

III.B.2.a. The Permittee shall close the LTU according to the procedures in the Land Treatment Unit Closure Plan, Section 12 of the approved Part B Permit Application, and shall perform the following as part of the closure: [40 CFR 264.280]

- i. The Permittee shall continue all operations (including pH control) that are necessary to maximize degradation, transformation, or immobilization of hazardous constituents

within the treatment zone, in accordance with the Land Treatment Unit Closure Plan, Section 12 of the approved Part B Permit Application, except to the extent such measures are inconsistent with Permit Condition III.B.2.a.v., during the closure period;

- ii. The Permittee shall continue all operations in the treatment zone to minimize run-off of hazardous constituents during the closure period;
- iii. The Permittee shall maintain the run-on control during the closure period;
- iv. The Permittee shall maintain the run-off management system during the closure period;
- v. The Permittee shall continue to comply with prohibition or conditions concerning growth of food-chain crops during the closure period; and

III.B.2.b. After final closure, The Permittee shall follow the plans and procedures in the Post-Closure Plan, Section 13 of the approved Part B Permit Application and Section III of this Permit.

III.B.3. Amendments to the LTU Closure Plan

- III.B.3.a. The Permittee shall comply with the requirements for amendment of the LTU Closure Plan as per 40 CFR 264.112.
- III.B.3.b. Amendments to the LTU Closure Plan are subject to the permit modification requirements of 40 CFR 270.41 and 270.42.

III.B.4. Notification of Closure

The Closure Timetable in the approved closure plan commenced on August 1, 1998, per the "Notification of Intent to Close the Land Treatment Unit" letter submitted to the KDHE on November 6, 1997 in accordance with 40 CFR 264.112(d).

III.B.5. Time Allowed for Closure

The Permittee shall complete all closure activities in accordance with the closure activity schedule specified in the LTU Closure Plan and 40 CFR 264.113. The Permittee shall continue to take all steps to prevent threats to human health and the environment during the extended closure period, including compliance with the closure activities specified in the Land Treatment Unit Closure Plan, Section 12 of the approved Part B Permit Application.

III.B.6. Disposal or Decontamination

The Permittee shall properly decontaminate and/or dispose of any contaminated soil or equipment generated or removed during closure, as required by 40 CFR 264.114 and the Land Treatment Unit Closure Plan, Section 12 of the approved Part B Permit Application.

III.B.7. Certification of Closure of the LTU

When closure is completed, the Permittee shall submit to the Secretary certification signed by the Permittee and a Kansas professional engineer that the facility has been closed in accordance with the specifications in the Land Treatment Unit Closure Plan, Section 12 of the approved Part B Permit Application and 40 CFR 264.115. In lieu of a Kansas professional engineer, the Permittee may substitute certification by a Kansas licensed geologist.

III.B.8. Survey Plat

The Permittee shall submit to the local zoning authority, or the authority with jurisdiction over the local land use, and to the Secretary a survey plat indicating the location and dimension of the hazardous waste disposal unit (the LTU) with respect to permanently surveyed benchmarks. This plat shall be prepared by a professional land surveyor. If the closure methodology does not result in “clean closure” and significant levels of hazardous constituents remain at the LTU at the time of Certification of Closure, the survey plat filed will contain a notification to restrict disturbance of the hazardous waste disposal unit indicated, in accordance with the applicable 40 CFR 264, Subpart G regulations.

III.C POST-CLOSURE PROCEDURES AND USE OF PROPERTY

The Permittee operated three surface impoundments (#1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon) and a Land Treatment Unit, which are subject to post-closure care in accordance with 40 CFR 264.117 through 264.120. These units have been

incorporated into one Waste Management Area (WMA) in accordance with 40 CFR 264.95(b)(2) and 264.97(b). The post-closure care period begins on the date final closure certification is accepted by the Secretary, and shall continue for thirty (30) years after that date unless otherwise specified by the Secretary. The post-closure care period for an individual regulated unit shall be automatically extended for the duration of any unresolved corrective action for that unit. Permit Table 2 lists the dates for closure certifications of the units.

Table 2 – Closure Certification Dates of Units

UNIT NAME	DATE OF CLOSURE CERTIFICATION
#1 Surface Impoundment	July 25, 1988
#2 Surface Impoundment	July 25, 1988
#3A Aerated Lagoon	February 6, 1998
Land Treatment Unit	Closure not certified

During the post-closure care period, the following activities will be performed by the Permittee: (1) post-closure care in accordance with Section III of this Permit, (2) groundwater corrective action and monitoring in accordance with Section IV of this Permit, and (3) groundwater compliance monitoring in accordance with Section V of this Permit.

Typical waste streams disposed at the LTU were: slop oil emulsion solids, heat exchanger bundle cleaning sludge, tank bottoms, API separator sludge, oily coke deposits, cooling tower sludges, dissolved air flotation (DAF) sludge, activated charcoal, bauxite, mole sieve, attapulugus clay, and oily contaminated soils. The #3A Aerated Lagoon wastewater exhibited the toxicity characteristic (TC) for benzene. The waste streams for the #1 Surface Impoundment and #2 Surface Impoundment were hazardous due to hexavalent chromium and lead toxicity.

III.C.1. Post-Closure Care Period

The Permittee shall conduct post-closure care for each hazardous waste management unit listed in Permit Condition III.C., to begin after final closure certification and continue for thirty (30) years after that date, except that the 30-year post-closure care period may be shortened upon application and demonstration approved by the Secretary that the facility is secure, or may be extended if the Secretary finds this is necessary to protect human health and the environment. [40 CFR 264.117(a)]

III.C.2. Groundwater Monitoring during Post-Closure

The Permittee shall maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of 40 CFR 264 Subpart F during

the post-closure period. Groundwater monitoring shall be performed in accordance with Sections IV and V of this Permit. [40 CFR 264.117(a)(1)]

III.C.3. Post-Closure Care of Surface Impoundments

The Permittee shall comply with the post-closure care for #1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon as follows: [40 CFR 264.228(b)]

- III.C.3.a. Maintain the integrity and effectiveness of the final covers, including making repairs to the caps, as necessary, to correct the effects of settling, subsidence, erosion, or other events;
- III.C.3.b. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of 40 CFR 264 Subpart F; and
- III.C.3.c. Prevent run-on and run-off from eroding or otherwise damaging the final covers.

III.C.4. Post-Closure of the Land Treatment Unit

The Permittee shall comply with the post-closure care for the Land Treatment Unit as follows: [40 CFR 264.280(c)]

- III.C.4.a. Continue all operations (including pH control) necessary to enhance degradation, transformation, or immobilization of hazardous constituents within the treatment zone to the extent that such measures are consistent with other post-closure care activities;
- III.C.4.b. Maintain a vegetative cover over the closed portions of the LTU;
- III.C.4.c. Maintain the run-on control system required under 40 CFR 264.273(c);
- III.C.4.d. Maintain the run-off management system required under 40 CFR 264.273(d);
- III.C.4.e. Control wind dispersal of hazardous waste as required under 40 CFR 264.273(f);
- III.C.4.f. Continue to comply with any prohibitions or conditions concerning growth of food-chain crops required under 40 CFR 264.276; and

III.C.4.g. Continue biennial unsaturated zone monitoring required under 40 CFR 264.278.

III.C.5. Security Requirements

The Permittee shall comply with all security requirements, as specified in the Security Plan, Section 5 of the approved Part B Permit Application. [40 CFR 264.117(b)]

III.C.6. Integrity of Final Cover

The Permittee shall not allow any use of the units designated in Permit Condition III.C. which will disturb the integrity of the final covers, liners, any components of the containment systems, or the function of the facility's monitoring systems during the post-closure care period. [40 CFR 264.117(c)]

III.C.7. Implementation of Post-Closure Plan

The Permittee shall implement the Post-Closure Plan, Section 13 of the approved Part B Permit Application. [40 CFR 264.117(d)] All post-closure activities must be conducted in accordance with 40 CFR 264.118(b) and this Permit.

III.D. INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the Inspection Schedule, Section 6 of the approved Part B Permit Application. [40 CFR 264.117(a)(1)(ii)]

III.E. NOTICES AND CERTIFICATION

III.E.1. Submittal to Local Zoning Authority

No later than sixty (60) days after certification of closure of each hazardous waste management unit, the Permittee shall submit to the local zoning authority, or the authority with jurisdiction over land use, and to the Secretary a record of the type, location, and quantity of each hazardous waste disposed of within each disposal unit of the facility. [40 CFR 264.119(a)]

III.E.2. Notice in Deed Requirement

Within sixty (60) days of certification of closure of the last hazardous waste disposal unit, the Permittee shall:

- III.E.2.a. Record, in accordance with Kansas law, a notice with the county register of deeds where the property is located that the land has been used to manage hazardous waste. [K.A.R. 28-31-264a(b)] The notice on the deed to the facility property will in perpetuity notify any potential purchaser of the property that:
- i. The land has been used to manage hazardous wastes,
 - ii. Its use is restricted under 40 CFR 264 Subpart G regulations; and
 - iii. The survey plat and record of the type, location, and quantity of hazardous waste disposed of within each unit or other hazardous waste disposal unit of the facility has been filed with the Secretary and county register of deeds.
- III.E.2.b. Submit a certification to the Secretary, signed by the Permittee, that he has recorded the notation specified in Permit Condition II.E.2.a., including a copy of the document in which the notation has been placed. [40 CFR 264.119(b)]

III.E.3. Future Removal of Hazardous Waste

If the Permittee or any subsequent owner or operator of the land upon which the closed units subject to post-closure are located, wishes to remove hazardous wastes and hazardous waste residues, liners, if any, or contaminated soils from any unit, then they shall request a modification to this post-closure Permit in accordance with the applicable requirements in 40 CFR Parts 124 and 270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of 40 CFR 264.117(c). [40 CFR 264.119(c)]

III.E.4. Certification of Completion of Post-Closure Care

No later than sixty (60) days after completion of the established post-closure care period for the hazardous waste management units, the Permittee shall submit to the Secretary, by registered mail, a certification that the post-closure care for the hazardous waste management units was performed in accordance with the specifications in the approved Post-Closure Plans. The certification must be signed by the Permittee and a Kansas professional engineer. Documentation supporting the Kansas professional engineer's certification must be furnished to the Secretary upon request until the Secretary releases the Permittee from the

financial assurance requirements for post-closure care under 40 CFR 264.145(i).
[40 CFR 264.120]

III.F. FINANCIAL ASSURANCE

The Permittee shall maintain financial assurance during the closure, post-closure, and corrective action period and comply with all applicable requirements of Permit Condition II.M. and 40 CFR 264 Subpart H. [40 CFR 264.145]

III.G. POST-CLOSURE PERMIT MODIFICATIONS

The Permittee shall request a Permit modification to authorize a change in the Post-Closure Plan(s) of the approved Part B Permit Application. This request must be in accordance with applicable requirements of 40 CFR Parts 124 and 270 and Permit Condition I.B.1., and must include a copy of the proposed amended Post-Closure Plan(s) for approval by the Secretary. The Permittee shall request a Permit modification whenever changes in operating plans or facility design affect the approved Post-Closure Plan(s) or other events occur during the life of the facility that affect the Post-Closure Plan(s). The Permittee shall submit a written request for a Permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the Post-Closure Plan(s). [40 CFR 264.118(d)]

SECTION IV –GROUNDWATER CORRECTIVE ACTION

The Permittee shall implement and maintain a groundwater corrective action program to address all releases to groundwater at and beyond the point of compliance defined in Permit Condition IV.B.5., as described in the approved Part B Permit Application, Engineering Feasibility Plan, and as specified in this permit. The groundwater corrective action program shall meet all applicable requirements of 40 CFR 264.100. The Permittee shall demonstrate the adequacy of the groundwater corrective action program in accordance with 40 CFR 264.100(d).

IV.A. BACKGROUND AND DESCRIPTION OF AREA

The hazardous waste management units at the facility which are subject to corrective action, in accordance with 40 CFR 264.100, are identified as #1 Surface Impoundment, #2 Surface Impoundment, #3A Aerated Lagoon, and the Land Treatment Unit. In accordance with 40 CFR 264.95(b)(2) and 264.97(b), these four hazardous waste management units have been incorporated into a single waste management area for the purpose of groundwater monitoring and corrective action. The Waste Management Area (WMA) as shown in Permit Attachment A, is defined as the area encompassing the Land Treatment Unit to the west and the #1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon to the east extending to the Walnut River.

The #1 Surface Impoundment and #2 Surface Impoundments were used to recover oil and oil emulsions from refinery process wastewater prior to further wastewater treatment. Grit, sediment, and heavy emulsions that sank to the bottom of the impoundments, similar to API Separator Sludge, was periodically dredged and placed in the Land Treatment Unit.

The #3A Aerated Lagoon was operated as an aggressive biological treatment unit for petroleum refinery wastewater. The wastewater exhibited benzene toxicity (hazardous code D018).

The Land Treatment Unit treated hazardous and non-hazardous refinery wastes using biodegradation. Typical hazardous wastes applied to the Land Treatment Unit included slop oil emulsion solids, heat exchanger bundle cleaning sludge, tank bottoms, API oil-water separator sludge, oily coke deposits, cooling tower sludge, and dissolved air floatation (DAF) sludge. Non-hazardous wastes managed in the Land Treatment Unit have included activated charcoal, bauxite, mole sieve, attapulgus clay, oily impacted soils, oily coke deposits, and tank bottoms. Sludges from closure activities of the #1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon were applied to the Land Treatment Unit.

IV.B. GROUNDWATER PROTECTION STANDARD

IV.B.1. Hazardous Constituents and Concentration Limits

The Groundwater Protection Standard (GWPS) establishes the maximum concentration limits during the compliance period for hazardous constituents in the groundwater at and beyond the point of compliance. [40 CFR 264.92] The hazardous constituents and maximum concentration limits specified in Permit Attachment B constitute the GWPS for the uppermost aquifer underlying the WMA. The GWPS constituents are derived from the Skinner's List, a subset of the Appendix IX constituents that the United States Environmental Protection Agency (USEPA) has determined are specific to the refining industry, and additional constituents which have been detected at the facility. The listed hazardous constituents of Permit Attachment B have been detected in the groundwater beneath and beyond the WMA, or are reasonably expected to be in or derived from waste disposed in the units.

IV.B.2. Basis for Groundwater Protection Standard

The maximum concentration limits for the hazardous constituents listed in Permit Attachment B are based on protection of human health and the environment and were derived from several different sources as explained in the footnotes of Permit Attachment B.

IV.B.3. GWPS Detection Limit

To demonstrate protection of human health and the environment, the detection limit for each hazardous waste constituent shall be less than or equal to the corresponding GWPS concentration limit. If the detection limit cannot be achieved due to matrix interference or other analytical limitations (provided that appropriate supporting documentation is provided to the Secretary) the affected sample and associated chemical analysis may be exempted from this requirement. Such an exemption does not, however, in any way relieve the Permittee from complying with the GWPS concentration limits.

IV.B.4. Demonstration of Alternate Concentration Limits

The Permittee may make a demonstration to the Secretary, at any time during the term of this Permit, for establishment of Alternate Concentration Limits (ACLs) in lieu of the GWPS concentration limits contained herein. Any such demonstration shall ensure that any ACL proposed in lieu of the GWPS concentration limits are protective of human health and the environment in

accordance with the requirements of 40 CFR 264.94(b). In proposing the ACL(s), the Permittee shall consider and formally address the factors listed in 40 CFR 264.94(b)(1) and (2). Any ACLs approved by the Secretary shall require a Permit modification in accordance with 40 CFR 270.42.

IV.B.5.Point of Compliance

At the ground surface, the point of compliance is defined as the northeast boundary of the Waste Management Area as depicted in Permit Attachment A. In the subsurface, the point of compliance is defined as a vertical surface located at the hydraulically downgradient limit of the Waste Management Area that extends perpendicularly downward from the northeast edge into the uppermost aquifer underlying the facility. [40 CFR 264.95] Groundwater contamination at and beyond the point of compliance which exceeds the GWPS concentration limits shall be subject to corrective action pursuant to 40 CFR 264.100.

IV.B.6.Compliance Period

The compliance period for which the GWPS applies to the Waste Management Area shall be the number of years equal to the active life of the Waste Management Area. [40 CFR 264.96] The active life includes any waste management activities prior to permitting and the closure period. The active life of the Waste Management Area commenced in 1956 when the #1 Surface Impoundment and #2 Surface Impoundment were placed into operation and will conclude with the closure certification of the Land Treatment Unit. Therefore, the compliance period shall be no less than 56 years. The compliance period shall begin once the closure certification for the Land Treatment Unit has been accepted by the Secretary.

If the GWPS concentration limits are being exceeded at the end of the compliance period at or beyond the point of compliance, the Permittee's groundwater corrective action program shall continue until the Permittee demonstrates that these limits have not been exceeded at and beyond the point of compliance for a period of three consecutive years.

IV.B.7.Implementation of Groundwater Corrective Action

The Permittee shall implement a groundwater corrective action program to ensure compliance with the groundwater protection standard [40 CFR 264.100(a)]. The overall objectives of the groundwater corrective action program include:

- i. Protect human health and the environment,

- ii. Achieve media clean-up standards, and
- iii. Control the source(s) of release so as to reduce or eliminate, to the extent practicable, further releases of hazardous waste or hazardous constituents that may pose a threat to human health and the environment.

IV.C. GROUNDWATER CORRECTIVE ACTION PROGRAM

The Waste Management Area, as defined in Permit Condition IV.A., is subject to the corrective action program requirements of 40 CFR 264.100, as incorporated by reference in K.A.R. 28-31-264, and this Permit until corrective action requirements contained in 40 CFR Part 264 Subpart F and this Permit have been satisfied. The corrective action program for the Waste Management Area shall consist of a program to ensure that groundwater quality will achieve compliance with the GWPS within a reasonable amount of time, as determined by the Secretary. This program shall consist of continuous operation of the groundwater containment and recovery system and groundwater monitoring in accordance with Permit Condition IV.D. The recovery system shall continue to operate until the GWPS established in Permit Condition IV.B. has not been exceeded for a period of three (3) consecutive years at and beyond the point of compliance. [40 CFR 264.100]

IV.C.1. Groundwater Corrective Action System

- IV.C.1.a. The corrective action system for the Waste Management Area shall consist of continuous operation of the groundwater containment and recovery system. This system consists of the wells listed in Permit Table 3 as follows:

Table 3 - Groundwater Containment and Recovery System

Recovery Wells (9)	RW-35	RW-60
	RW-40	RW-65
	RW-45	RW-70
	RW-50	RW-75
	RW-55	

- IV.C.1.b. The corrective action system for the Land Treatment Unit shall consist of continuous operation of the groundwater containment and recovery system listed in Permit Condition IV.C.1.a.
- IV.C.1.c. The Permittee shall maintain an NPDES Permit, issued by the Secretary, for treatment and discharge of the recovered groundwater. The system identified in the Engineering Feasibility Plan to be used

for treatment of the groundwater consists of two bioreactor tanks (Tank R-7101 and Tank R-7102), the #3B Aerated Lagoon, and a series of four (4) oxidation ponds. If the Permittee does not maintain the NPDES Permit for treatment and discharge of the recovered groundwater, the Permittee shall submit a permit modification in accordance with 40 CFR 270.42.

- IV.C.1.d. The Permittee shall maintain Tank V-7106 for storage of recovered light non-aqueous phase liquid (LNAPL) as specified in the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application.

IV.C.2.Prevention of Releases to the Walnut River

- IV.C.2.a. The Permittee shall implement a corrective action program that prevents any releases of hazardous constituents above the GWPS, included in the approved Permit Attachment B, to the Walnut River. [40 CFR 264.100]
- IV.C.2.b. To prevent any release, The Permittee shall continuously operate the recovery wells listed in Permit Condition IV.C.1. (Table 3) to create a reverse hydraulic gradient (capture zone) between the Walnut River and the recovery wells.
- IV.C.2.c. The Permittee must demonstrate that a reverse hydraulic gradient is maintained between the recovery wells and the Walnut River. Reverse hydraulic gradient shall be demonstrated by comparing the groundwater elevations between the following capture zone monitoring well pairs: (CMW-1 to RCRA-7), (CMW-2 to 113), (CMW-3 to 118), and (CMW-4 to MW-1002). This demonstration shall be done quarterly, in accordance with procedures contained in the Sampling and Analysis Plan, Appendix P, and the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application. At a minimum, 0.2 ft of head differential, corrected for free product, must be maintained.
- IV.C.2.d. If gradient reversal control cannot be demonstrated by using groundwater level measurements during a quarterly evaluation, the Permittee shall implement the following:
 - i. Notify the Secretary within seven (7) days of the quarterly groundwater level measurement.

- ii. Implement procedures to reestablish the gradient reversal in accordance with Section 15.4 of the approved Part B Permit Application.
 - iii. Collect groundwater samples within thirty (30) days of the quarterly groundwater level measurement and every thirty (30) days thereafter as long as a gradient reversal cannot be demonstrated and analyze for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) in wells CMW-1, CMW-2, CMW-3, and CMW-4 to evaluate the potential of a release to the Walnut River.
 - iv. Discontinue sampling of wells CMW-1, CMW-2, CMW-3, and CMW-4 after a satisfactory demonstration of the reestablishment of the gradient reversal has been submitted to the Secretary.
 - v. Submit the laboratory report to the Secretary within forty (40) days of the sample collection date. This submittal must include a written notification of any exceedance of the GWPS (Permit Attachment B).
 - vi. If the groundwater sample analysis indicates that a potential exceedance of the GWPS has occurred, a resampling verification may be performed. The Permittee must conduct the resampling verification within thirty (30) days of the potential exceedance sampling date.
 - vii. If the resampling verification confirms that the GWPS has been exceeded, the Permittee shall submit, within forty-five (45) days of the verification sample collection date, an application for a permit modification to make appropriate changes to the corrective action program in accordance with 40 CFR 264.100(h) and 270.42 to prevent further releases to the Walnut River.
 - viii. If gradient reversal cannot be reestablished within ninety (90) days from the quarterly measurement, the Permittee shall submit, within fifteen (15) days, an application for a permit modification to make appropriate changes to the corrective action program in accordance with 40 CFR 264.100(h) and 270.42.
- IV.C.2.e. If one or more of the recovery wells established in Permit Condition IV.C.1. fails to operate continuously for greater than seven (7) days

and gradient reversal cannot be demonstrated, the Permittee shall implement the following procedures:

- i. Within twenty-one (21) days, initiate sampling of Capture Zone Monitoring Wells CMW-1, CMW-2, CMW-3, and CMW-4 for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) hazardous constituents.
 - ii. Continue sampling of Capture Zone Monitoring Wells CMW-1, CMW-2, CMW-3, and CMW-4 for BTEX every thirty (30) days thereafter as long as one or more recovery wells is inoperable.
 - iii. If the BTEX constituents exceed the GWPS and the recovery well system is not fully operational within sixty (60) days, the Permittee shall implement the Corrective Action Contingency Plan of the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application.
 - iv. If the recovery well system is returned to full operations within sixty (60) days and the GWPS has not been exceeded, the Permittee may discontinue sampling of the Capture Zone Monitoring Wells.
 - v. If the GWPS was exceeded during the period in which the recovery wells were inoperable, the Permittee shall submit a report to the Secretary evaluating the potential and/or volume of hazardous constituents released to the Walnut River.
 - vi. Submit reports to the Secretary in accordance with Permit Condition I.E.13., Twenty-four Hour Reporting.
- IV.C.2.f. If the Permittee is required to implement sampling and analyses to fulfill the requirement of Permit Condition IV.C.2.d. and IV.C.2.e. concurrently, sampling and analyses performed for either Permit Condition IV.C.2.d. or IV.C.2.e. will satisfy the requirement of either Permit Condition IV.C.2.d. or IV.C.2.e.

IV.C.3. Removal of Hazardous Constituents

The Permittee shall conduct a corrective action program to remove any hazardous constituents that exceed the GWPS in groundwater between the compliance point and the downgradient facility property boundary, in accordance with the

procedures specified in the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application. [40 CFR 264.100(e)]

- IV.C.3.a. The corrective action program to remove and/or treat in place the hazardous constituents that exceed the GWPS limits in the groundwater shall consist of the recovery wells listed in Permit Table 3.
- IV.C.3.b. The groundwater containment and recovery system will be operated in accordance with the parameters specified in the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application.
- IV.C.3.c. The groundwater from the recovery wells will be sampled at the influent sampling port of the bioreactor at least quarterly as part of the monitoring to evaluate the performance of the corrective action program. The Permittee shall report this information to the Secretary in accordance with Permit Condition IV.E.
- IV.C.3.d. Sampling and analysis of the hazardous constituents in the groundwater, in accordance with Permit Condition IV.D., will be used to monitor and evaluate the progress and effectiveness of the corrective action system. The Permittee shall report this information to the Secretary in accordance with Permit Condition IV.E.
- IV.C.3.e. If the recovery and containment system fails to operate within the parameters listed in Permit Condition IV.C.3.b., the Permittee shall implement the Corrective Action Contingency Plan of the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application.

IV.C.4.Maintenance and Inspection of Groundwater Containment and Recovery System

- IV.C.4.a. The Permittee shall maintain and inspect the groundwater containment and recovery system specified in Permit Condition IV.C. at the locations specified in the Groundwater Monitoring Plan, Section 15, and the Engineering Feasibility Plan, Section 15.4 of the approved Part B Permit Application.
- IV.C.4.b. The Permittee shall maintain the groundwater containment and recovery system for use as identified in Permit Condition IV.C. and inspect in accordance with the Operation and Maintenance Plan for the

Groundwater Corrective Action and Engineering Feasibility Plan,
Section 15.4 of the approved Part B Permit Application.

- IV.C.4.c. The Permittee shall maintain the recovery and containment system in optimum condition necessary to create a gradient reversal to comply with Permit Condition IV.C.2. The Permittee shall provide an annual demonstration of the recovery and containment system efficiency as a part of the groundwater reporting requirements of Permit Condition IV.E.

IV.C.5. Modifications to Groundwater Containment and Recovery System

Any modification in the number and/or location of the wells established in Permit Condition IV.C.1 for the Waste Management Area shall require a Permit modification in accordance with 40 CFR 270.42 and Permit Condition IV.G. In addition, the Permittee shall meet the following requirements:

- IV.C.5.a. Any new recovery well(s) installed by the Permittee to meet the requirements of this Permit shall be designed and installed in accordance with well-specific plans and specifications approved by the Secretary.
- IV.C.5.b. New or additional wells shall be inspected and maintained in accordance with procedures outlined in Permit Condition IV.C.4.
- IV.C.5.c. All wells deleted from the recovery and treatment system shall be plugged and abandoned in accordance with Kansas Regulatory requirements contained in K.S.A. 82a-1213 and K.A.R. 28-30-7. Well plugging and abandonment methods and certification shall be submitted to the Secretary within thirty (30) days from the date the wells are removed from the corrective action program.
- IV.C.5.d. The Permittee shall contact the Secretary at least five (5) working days prior to conducting any field work associated with the construction or modification of the recovery or treatment system required by this Permit. The Secretary may choose to provide oversight of any portion of the system's construction or modification.

IV.C.6.Extension of Corrective Action Beyond Term of Permit

If corrective action is required beyond the term of this Permit, the term of this Permit and the corrective action shall be extended until the GWPS has not been exceeded for three (3) consecutive years.

IV.D. GROUNDWATER CORRECTIVE ACTION MONITORING PROGRAM

During the term of this Permit, the Permittee shall establish and maintain a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Groundwater monitoring shall be conducted to comply with the requirements specified below in accordance with those portions of 40 CFR 264.97 applicable to groundwater monitoring programs conducted in accordance with 40 CFR 264.100 and the following additional requirements.

IV.D.1 Groundwater Monitoring System

The groundwater corrective action monitoring system consists of two (2) upgradient wells, eight (8) corrective action performance wells, two (2) supplemental wells, and eight (8) capture zone monitoring wells as specified in Permit Table 4.

Table 4 - Corrective Action Monitoring Network

Well Number	Monitoring Frequency	Compliance Well Association	Gradient Location
CMW-1	Quarterly	Capture Zone Monitoring	Downgradient
CMW-2	Quarterly	Capture Zone Monitoring	Downgradient
CMW-3	Quarterly	Capture Zone Monitoring	Downgradient
CMW-4	Quarterly	Capture Zone Monitoring	Downgradient
113	Quarterly	Capture Zone Monitoring	Downgradient
118	Quarterly	Capture Zone Monitoring	Downgradient
MW-1002	Quarterly	Capture Zone Monitoring	Downgradient
RCRA-7	Quarterly	Capture Zone Monitoring	Downgradient
WN-5B	Semiannually	Corrective Action Performance	Downgradient
WN-6A	Semiannually	Corrective Action Performance	Downgradient
WN-6B	Semiannually	Corrective Action Performance	Downgradient
WN-7B	Semiannually	Corrective Action Performance	Cross gradient
WN-8B	Semiannually	Corrective Action Performance	Cross gradient

MW- 6	Semiannually	Corrective Action Performance	Down gradient
MW-13	Semiannually	Corrective Action Performance	Downgradient
MW-17	Semiannually	Corrective Action Performance	Downgradient
MW-12	Semiannually	Supplemental Information Well	Downgradient
RCRA-4	Semiannually	Supplemental Information Well	Downgradient
WN-1A	Semiannually	Background	Upgradient
WN-1B	Semiannually	Background	Upgradient

- IV.D.1.a The sampling locations specified in Permit Table 4 and depicted in Figure 2 of the Groundwater Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application will serve as the groundwater corrective action monitoring system.
- IV.D.1.b. Should the Secretary determine that the wells designated to monitor groundwater passing the point of compliance are not adequate, the Permittee shall propose a Permit modification in accordance with 40 CFR 270.42 to install/establish additional and/or alternate monitoring wells.
- IV.D.1.c. The Permittee shall report the surveyed elevation of the monitoring wells to the nearest 0.01 foot when the wells are installed. The total depth of wells and elevation of the following should be reported: top of casing reference mark, ground surface and/or concrete apron, the protective casing, and the top and bottom of the well screen, gravel pack, and well seals.
- IV.D.1.d. All groundwater monitoring wells at the facility shall be maintained. This includes those wells which have been excluded from the groundwater monitoring program, but used for supplemental information and capture zone evaluation.

IV.D.2.Groundwater Monitoring System Objectives

- IV.D.2.a. The groundwater corrective action monitoring system shall consist of a set of monitoring wells designed, installed, and operated to collect samples from the underlying aquifer and that meet the following objectives:
 - i. Is adequate to support collection of representative groundwater samples for comparison to the GWPS;

- ii. Is adequate to detect significant evidence of increased/decreased contamination at sampling locations within the Waste Management Area, at the point of compliance, and downgradient of the facility including groundwater that discharges into the Walnut River;
- iii. Is adequate to detect the rate of migration and three-dimensional extent of all groundwater contaminant plumes on and off-site of the Waste Management Area;
- iv. Adequately demonstrates the effectiveness of the groundwater corrective action program in terms of contaminant containment, removal, destruction, and/or treatment in accordance with 40 CFR 264.100(d); and
- v. Is adequate to monitor the progress of the corrective action within the Waste Management Area.

IV.D.2.b. If the Secretary or Permittee determines that the groundwater monitoring program does not adequately meet the objectives as specified by Permit Condition IV.D.2.a., the Permittee shall implement the following:

- i. Submit, within ninety (90) days of the date of the determination that Permit Condition IV.D.2.a has not been met, an application for a permit modification to make appropriate changes to the groundwater corrective action monitoring program in accordance with 40 CFR 264.100(h) and 270.42.
- ii. The Permittee must continue to monitor in accordance with the groundwater corrective action monitoring program established in Permit Condition IV.D.1.a. until the permit modification is approved.

IV.D.3. Inspection and Maintenance of Monitoring System

IV.D.3.a. The Permittee shall implement an inspection and maintenance program for the groundwater monitoring system identified in Permit Condition IV.D.1. The wells specified in Permit Table 4 are to be inspected and maintained in accordance with Permit Conditions IV.D.3.b through IV.D.3.g. This program shall be designed to ensure the structural integrity of all wells during the post-closure period.

- IV.D.3.b. Above ground well integrity inspections shall be performed at the time of each sampling event and shall be documented in the inspection log. The evaluation for each monitoring well shall include a visual inspection of the outer protective casing, inner casing riser, concrete apron, well cap, and locking mechanism to document any damage or deterioration. The ground surface in the immediate vicinity of each monitoring well and the annular space between the outer protective casing and inner casing riser shall be inspected for visible anomalies (e.g., collection or ponding of water, ground subsidence, etc.).
- IV.D.3.c. Subsurface well integrity inspections shall be performed annually for all wells, in accordance with the provisions contained in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application and shall be documented in the inspection log. Subsurface well integrity inspections shall consist of one or more of the following: total well depth measurements, groundwater turbidity measurements, in-situ hydraulic conductivity tests, casing caliper logs, down-hole video camera surveys, and/or other methods capable of verifying the subsurface integrity of the well casing and screen.
- IV.D.3.d. The Permittee shall perform an annual wellbore siltation evaluation to assess downwell siltation and well screen occlusion for all monitoring wells. This evaluation shall be designed to ensure the representative nature of the required groundwater sample analysis and field measurement results through minimization of sampling and measurement interferences (e.g., turbidity, excessive well screen occlusion, etc.).
- IV.D.3.e. Wells demonstrating well screen occlusion equal to or in excess of 10% of the well screen length shall be redeveloped prior to the next scheduled sampling event.
- IV.D.3.f. The Permittee shall perform well-specific surface and subsurface integrity inspections within seven (7) days following any contact of wells by flood waters.
- IV.D.3.g. Monitoring well repairs shall be undertaken within thirty (30) days of identification of any surface or subsurface well integrity problem. If adverse weather or site conditions preclude the Permittee from gaining access to and repairing wells within thirty (30) days, then the Permittee shall take appropriate action with respect to this requirement as soon as practicable. Written justification for any delay, completed well

inspection log sheets, a narrative description of any well repairs and before/after photographic documentation (in case of visible surface well repairs) shall be provided to the Secretary as part of the Annual Groundwater Corrective Action Reports required by Permit Condition IV.E.

IV.D.4.Modifications to Monitoring System

- IV.D.4.a Any modification in the number and/or location of the monitoring wells established in Permit Condition IV.D. for the Waste Management Area shall require a Permit modification approved by the Secretary in accordance with 40 CFR 270.42 and Permit Condition IV.G.
- IV.D.4.b. Any new groundwater monitoring well(s) installed by the Permittee to meet the requirements of this Permit shall be designed and installed in accordance with the requirements of 40 CFR 264.97, the objectives of the groundwater monitoring programs specified in Permit Condition IV.D.2.a., and well-specific plans and specifications approved by the Secretary.
- IV.D.4.c. The Permittee shall contact the Secretary at least five (5) working days prior to conducting any field work associated with the construction or modification of the groundwater monitoring system required by this Permit. The Secretary shall have the option of observing any portion of the system's construction or modification.
- IV.D.4.d. New or additional wells shall be inspected and maintained in accordance with procedures outlined in Permit Condition IV.D.3., the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application, and 40 CFR 264.97.
- IV.D.4.e. All wells deleted from the monitoring system shall be plugged and abandoned in accordance with Kansas Regulatory requirements contained in K.S.A. 82a-1213 and K.A.R 28-30-7. Well plugging and abandonment methods and certification shall be submitted to the Secretary within thirty (30) days from the date the wells are removed from the monitoring system.

IV.D.5.Sampling and Analysis Procedures

IV.D.5.a. The Permittee shall perform groundwater sampling and analysis and field measurement of the groundwater-related parameters listed in Permit Table 5 to evaluate groundwater corrective action at monitoring wells in the Waste Management Area and to detect potential releases to the Walnut River according to the schedule in Permit Table 5.

Table 5 – Corrective Action Monitoring, Sampling, Analysis, and Parameter Measurements Schedule

Parameters	Type of Measurement	Frequency	Monitoring Wells
Appendix IX (*)	Analytical Lab Data	Every Five Years	3 CAP Wells (*)
GWPS Constituents	Analytical Lab Data	Every Three Years	All CAP Wells
BTEX	Analytical Lab Data	Semi-annual	CAP, Supp, Back
pH	Field Measurement	Semi-annual	CAP, Supp, Back
Specific Conductance	Field Measurement	Semi-annual	CAP, Supp, Back
Turbidity	Field Measurement	Semi-annual	CAP, Supp, Back
Temperature	Field Measurement	Semi-annual	CAP, Supp, Back
Dissolved Oxygen	Field Measurement	Semi-annual	CAP, Supp, Back
ORP	Field Measurement	Semi-annual	CAP, Supp, Back
Static Water Levels ⁽²⁾	Field Measurement	Quarterly	All Wells (Table 4)
Total Well Depth	Field Measurement	Annual	All Wells (Table 4)
Immiscible Layer	Field Measurement	Quarterly	All CZM Wells

(*) Sample and analyze groundwater from three corrective action performance monitoring wells, see IV.D.5.g

(1) Permit Attachment B

(2) Groundwater potentiometric surface measurements shall be collected at the time of each regularly scheduled sampling event from all monitoring wells at the facility, including those which are not being sampled regularly.

ORP – Oxidation-Reduction Potential Supp – Supplemental Well Back – Background Well
CZM – Capture Zone Monitoring Well CAP – Corrective Action Performance Well

IV.D.5.b. The Permittee shall determine the groundwater surface elevation and total well depth at each well listed in Permit Table 4 in accordance with procedures in the Sampling and Analysis Plan, Appendix P, and Engineering and Feasibility Plan Section 15.4 of the approved Part B Permit Application and the following:

- i. The Permittee shall obtain groundwater surface elevations and immiscible layer measurements quarterly and total well depths

annually for the capture zone monitoring wells established in Permit Condition IV.D.

- ii. The Permittee shall obtain groundwater surface elevation and immiscible layer measurements semi-annually and total well depth measurements annually for the corrective action performance wells, supplemental information wells, and background wells established in Permit Condition IV.D.
- iii. The Permittee shall obtain measurements of immiscible layer, groundwater surface elevation, and total well depth prior to purging any well.

IV.D.5.c. The Permittee shall use the following techniques and procedures when collecting and analyzing samples from the groundwater monitoring wells described in Permit Condition IV.D.

- i. Samples shall be collected by the techniques described in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- ii. Samples shall be preserved and shipped for analysis, in accordance with the procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- iii. Samples shall be analyzed according to the procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- iv. Samples shall be tracked and controlled using the chain-of-custody procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- v. All constituent chemical analyses shall be performed by a laboratory certified by KDHE in accordance with K.A.R. 28-31-264a(e).

IV.D.5.d. The Permittee shall determine the concentration of the BTEX hazardous constituents listed in the GWPS (Permit Attachment B) for the corrective action performance wells, supplemental information wells, and background wells specified in Permit Table 4, at least semi-

annually, to meet the objectives of the groundwater corrective action monitoring program outlined in Permit Condition IV.D.2.a.

- IV.D.5.e The Permittee shall determine the concentrations for BTEX hazardous constituents listed in the GWPS (Permit Attachment B) from the capture zone monitoring wells when the corrective action program fails to meet the requirements of Permit Condition IV.C.2.
- IV.D.5.f. The Permittee shall sample and analyze groundwater from the corrective action performance wells every three (3) years to determine the concentrations of all hazardous constituents listed in the GWPS (Permit Attachment B), commencing with the effective date of this permit.
- IV.D.5.g. Within five (5) years of the effective date of this permit and every five (5) years thereafter, the Permittee shall sample and analyze groundwater from three corrective action performance monitoring wells for all hazardous constituents listed in the GWPS (Permit Attachment B) and 40 CFR 264, Appendix IX to determine the concentrations of hazardous constituents present in the uppermost aquifer. The wells to be sampled will be chosen by the Permittee and approved by the Secretary.
- i. If the Permittee finds additional hazardous constituents present (i.e., not listed in Permit Attachment B), their concentrations shall be reported to the Secretary in writing within seven (7) days from completion of the analyses. The results of the analyses must be submitted to the Secretary within sixty (60) days of the sample collection date.
 - ii. If hazardous constituents are identified in the groundwater, which are not currently specified in the GWPS, the Permittee may resample the groundwater to confirm detection within thirty (30) days from notifying the Secretary. The results of the resample analyses must be submitted to the Secretary within sixty (60) days of the sample collection date. If the Permittee's subsequent groundwater analyses confirm the presence of additional hazardous constituents, then the Permittee shall have thirty (30) days from the date KDHE receives the results to propose a Permit modification in accordance with 40 CFR 270.42 to add the confirmed hazardous constituents to the GWPS (Permit Attachment B) and the groundwater monitoring program.

IV.D.5.h. The Permittee shall statistically analyze the contaminant trend from year to year to evaluate the effectiveness of the corrective action program. This statistical analysis shall be performed in accordance with procedures specified in the Engineering and Feasibility Plan, Section 15.4 of the approved Part B Permit Application and the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application. This statistical analysis shall be performed in accordance with the requirements of 40 CFR 264.97, shall utilize a statistical method which is appropriate for the distribution of the data undergoing analysis, and ensure, to the greatest degree possible, protection of human health and the environment.

IV.E. GROUNDWATER REPORTING REQUIREMENTS

IV.E.1. Annual Groundwater Reporting Requirements

- IV.E.1.a. The Permittee shall prepare and submit on an annual basis for the preceding calendar year, a Groundwater Monitoring Report providing a comprehensive evaluation of the groundwater monitoring and corrective action program including a narrative discussion of the nature and evolution of the program as well as the overall adequacy of the programs. Any conclusions concerning inadequacies in the groundwater monitoring and corrective action program shall be accompanied by a discussion of proposed amendments. Specific details concerning any proposed amendments should be further developed outside the scope of these reports and/or as otherwise specified in this Permit. The Permittee's Annual Groundwater Monitoring report shall be submitted to the Secretary by March 1 for each preceding calendar year. [40 CFR 264.100(g)]
- IV.E.1.b. The Permittee's Annual Groundwater Monitoring Reports shall evaluate the adequacy of the groundwater monitoring program including, but not limited to, the following:
- i. A comparison of the levels of each hazardous constituent measured at each sampling location during the previous calendar year, to the associated concentration limit. The hazardous constituents and concentration limits required by the Groundwater Protection Standard (GWPS) are specified in Permit Attachment B.

- ii. A comparison of groundwater elevations measured between capture zone monitoring well pairs during the previous calendar year, to the established head differential limit. The head differential limit required to demonstrate that a reverse hydraulic gradient is being maintained between the recovery wells and the Walnut River is specified in Permit Condition IV.C.2.
- iii. An evaluation of the rate and direction of groundwater movement in the underlying aquifers and potential effect on any corrective action measures being designed or implemented at the facility for removal, containment, or control of the groundwater contaminant plume(s).
- iv. An evaluation of the horizontal and vertical extent and concentrations of any hazardous constituents in groundwater throughout the contaminant plume(s) as determined from the data obtained from the Permittee's groundwater monitoring system.
- v. An evaluation of the analytical results from samples collected from the influent sampling ports of the bioreactor during the quarterly sampling events. This data shall be included in contaminant trend analyses from year to year to help evaluate the effectiveness of the corrective action program.
- vi. A summary and conclusions regarding the comparison of analytical results from groundwater extraction and discharge monitoring, regulated under the Permittee's NPDES Permit, to compare detected levels of hazardous constituents to the maximum concentration limits allowed for discharge to the Walnut River, regulated by the NPDES Permit.
- vii. The quantity of light non-aqueous phase liquid (LNAPL) and groundwater extracted from the subsurface as part of the operation of the corrective action system, future stabilization activities, and/or as part of the groundwater monitoring program. This information shall be reported both as a total amount and per well or extraction location.
- viii. An analysis of trends in the levels of hazardous constituents from year to year based on sampling results to determine whether there is significant evidence of increased contamination. If there

is an increasing trend for any of the hazardous constituents at any well, the report must contain an evaluation of the source of the increased contamination and provide conclusions as to whether a new release from a regulated unit has occurred.

- ix. An evaluation of surface and/or subsurface monitoring well integrity including identification of any actual or potential problems that may influence the groundwater data or efficiency of the groundwater monitoring program.

IV.E.1.c. The Annual Reports shall comprehensively address all of the technical requirements of 40 CFR Part 264 Subpart F and this Permit. The Permittee shall summarize relevant groundwater monitoring information and shall present this information in the form of narrative discussions, groundwater flow calculations, and/or diagrammatic illustrations (i.e., tabular groundwater and statistical data summaries, hydrogeologic and potentiometric contour maps/cross-sections, chemical parameter trend graphs, calculated rate(s) of contaminant migration, contaminant isoconcentration maps/cross-sections, fence/isometric diagrams, groundwater flow nets, etc.), and other information as appropriate.

IV.E.1.d. During the implementation of the groundwater corrective action monitoring program, the Annual Reports shall contain a demonstration of the effectiveness of the groundwater containment and recovery systems and of the groundwater treatment system to help evaluate the effectiveness of the groundwater corrective action in removing subsurface contaminants, in maintaining a reverse hydraulic gradient required by Permit Condition IV.C.2., to track the overall progress/trends in remediating the groundwater, and to provide the basis for future decisions regarding cessation of groundwater corrective action activities.

IV.E.2.Semi-Annual Groundwater Reporting Requirements

IV.E.2.a. In addition to annual reporting requirements, the Permittee shall prepare and submit a Semi-Annual Groundwater Monitoring Report by March 1 and September 1 for the sampling events completed during the preceding months of January through June and July through December.

The semi-annual groundwater monitoring reports shall be submitted to the Secretary by March 1 and September 1 of each calendar year for the preceding calendar half-year. All information included in the March 1 semi-annual report may be combined with the Annual Groundwater Monitoring Report.

- IV.E.2.b. The Semi-Annual Monitoring Reports shall provide sampling results including, but not limited to, the following:
- i. A summary of the monitoring activities and operation and maintenance performed including recommendations, if necessary, for the groundwater monitoring system,
 - ii. Semi-annual groundwater monitoring laboratory analytical reports including Quality Assurance/Quality Control data,
 - iii. Quarterly Bioreactor influent sampling analytical results including Quality Assurance/Quality Control data,
 - iv. Quarterly groundwater monitoring well water level measurements and demonstration of the reverse hydraulic gradient between the recovery wells and the Walnut River,
 - v. Average pumping rate of recovery wells and total quantities of groundwater and free product recovered during reporting period,
 - vi. Photocopies of the field forms and laboratory chain of custody forms,
 - vii. A digital copy of the Semi-Annual Groundwater Monitoring Report including tables, figures, and appendices.

IV.E.3. Groundwater Monitoring Well Installation Reporting Requirements

- IV.E.3.a. The Permittee shall submit a well installation report to the Secretary within sixty (60) days from the date the field activities were completed with the following information:
- i. A discussion summarizing the field activities,
 - ii. Detailed boring logs with descriptions of soils and geologic formations encountered during the drilling activities,

- iii. Detailed as-built monitoring well diagrams,
- iv. Well records,
- v. A copy of the report submitted by the Registered Land Surveyor;
and
- vi. A copy of the field notes documentation.

IV.E.3.b. The Permittee shall provide a summary of all well installation activities performed during the year in the Annual Groundwater Monitoring Report.

IV.E.4. Recordkeeping

The Permittee shall enter all monitoring, testing, and analytical data collected according to Permit Condition IV, in the operating record. The data must include all computations, calculated means, variances, and results of the statistical tests that the Secretary has specified. [40 CFR 264.73(b)(6)]

IV.F. REQUIREMENTS IF THE GROUNDWATER PROTECTION STANDARD IS MET DURING THE COMPLIANCE PERIOD

If the Permittee concludes that the requirements of 40 CFR 264.100(e) and this Permit have been fulfilled during the term of this Permit for groundwater corrective action of the Waste Management Area, the Permittee may begin to initiate compliance monitoring in accordance with Section V of this Permit. The Permittee shall notify the Secretary ninety (90) days prior to initiating the compliance monitoring program with appropriate documentation supporting such action. Based on KDHE's review of the above, the Secretary shall have the authority of prohibiting the Permittee from the implementation of the compliance monitoring program in lieu of corrective action monitoring program.

IV.G. REQUEST FOR PERMIT MODIFICATION

If the Permittee or the Secretary determines that the groundwater corrective action program established by this Permit is no longer adequate, the Permittee shall submit an application for a permit modification within ninety (90) days from the date of this determination to make any necessary changes to the program. [40 CFR 264.100(h)] The request for permit modification must be made in accordance with Permit Condition I.B.1.

SECTION V – GROUNDWATER COMPLIANCE MONITORING

The Permittee shall maintain the compliance monitoring program established by this Permit, described in the Groundwater Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application, and implemented as required by 40 CFR 270.14(c). The compliance monitoring program shall meet all applicable requirements of 40 CFR 264.99.

V.A. UNIT DESCRIPTION

The hazardous waste management units which are subject to compliance monitoring regulations, in accordance with 40 CFR 264.99, are identified as #1 Surface Impoundment, #2 Surface Impoundment, #3A Aerated Lagoon, and the Land Treatment Unit. In accordance with 40 CFR 264.95(b)(2) and 264.97(b), these four hazardous waste management units have been incorporated into a single waste management area for the purpose of groundwater monitoring. The Waste Management Area (WMA) as shown in Permit Attachment A, is defined as the area encompassing the Land Treatment Unit to the west and the #1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon to the east extending to the Walnut River.

The #1 Surface Impoundment and #2 Surface Impoundment were used to recover oil and oil emulsions from refinery process wastewater prior to further wastewater treatment. Grit, sediment, and slop oil emulsion solids that sank to the bottom, classified as API Separator Sludge, were periodically dredged and placed in the Land Treatment Unit.

The #3A Aerated Lagoon was operated as an aggressive biological treatment unit for petroleum refinery wastewater. The wastewater exhibited benzene toxicity (hazardous code D018).

The Land Treatment Unit treated hazardous and non-hazardous refinery wastes using biodegradation. Typical hazardous wastes applied to the Land Treatment unit included slop oil emulsion solids, heat exchanger bundle cleaning sludge, tank bottoms, API oil-water separator sludge, oily coke deposits, cooling tower sludge, and dissolved air floatation (DAF) sludge. Non-hazardous wastes managed in the Land Treatment Unit have included activated charcoal, bauxite, mole sieve, attapulgus clay, oily impacted soils, oily coke deposits, and tank bottoms. Sludges from closure activities of the #1 Surface Impoundment, #2 Surface Impoundment, and #3A Aerated Lagoon were applied to the Land Treatment Unit.

V.B. GROUNDWATER PROTECTION STANDARD

V.B.1. Hazardous Constituents and Concentration Limits

The Groundwater Protection Standard (GWPS) establishes the maximum concentration limits during the compliance period for hazardous constituents in the groundwater at and beyond the point of compliance. [40 CFR 264.92] The hazardous constituents and maximum concentration limits specified in Permit Attachment B constitute the GWPS for the uppermost aquifer underlying the WMA. The GWPS constituents are derived from the Skinner's List, a subset of the Appendix IX constituents that the United States Environmental Protection Agency (USEPA) has determined are specific to the refining industry, and additional constituents which have been detected at the facility. The listed hazardous constituents of Permit Attachment B have been detected in the groundwater beneath and beyond the WMA, or are reasonably expected to be in or derived from waste disposed in the units.

V.B.2. Basis for Groundwater Protection Standard

The maximum concentration limits for the hazardous constituents listed in Permit Attachment B are based on protection of human health and the environment and were derived from several different sources as explained in the footnotes of Permit Attachment B.

V.B.3. GWPS Detection Limit

To demonstrate protection of human health and the environment, the detection limit for each hazardous waste constituent shall be less than or equal to the corresponding GWPS concentration limit. If the detection limit cannot be achieved due to matrix interference or other analytical limitations (provided that appropriate supporting documentation is provided to the Secretary) the affected sample and associated chemical analysis may be exempted from this requirement. Such an exemption does not, however, in any way relieve the Permittee from complying with the GWPS concentration limits.

V.B.4. Demonstration of Alternate Concentration Limits

The Permittee may make a demonstration to the Secretary, at any time during the term of this Permit, for establishment of Alternate Concentration Limits (ACLs) in lieu of the GWPS concentration limits contained herein. Any such demonstration shall ensure that any ACL proposed in lieu of the GWPS concentration limits are protective of human health and the environment in

accordance with the requirements of 40 CFR 264.94(b). In proposing the ACL(s), the Permittee shall consider and formally address the factors listed in 40 CFR 264.94(b)(1) and (2). Any ACLs approved by the Secretary shall require a Permit modification in accordance with 40 CFR 270.42.

V.B.5. Point of Compliance

At the ground surface, the point of compliance is defined as the east boundary of the Waste Management Area as depicted in Permit Attachment A. In the subsurface, the point of compliance is defined as a vertical surface located at the hydraulically downgradient limit of the Waste Management Area that extends perpendicularly downward from the east edge into the uppermost aquifer underlying the facility. [40 CFR 264.95] Groundwater contamination at and beyond the point of compliance which exceeds the GWPS concentration limits shall be subject to corrective action pursuant to 40 CFR 264.100.

Based on current hydrogeologic conditions at the Waste Management Area, the wells specified in Table 6 will serve as point-of-compliance monitoring wells as depicted in Permit Attachment A and the Groundwater Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.

Table 6 – Point-of-Compliance Monitoring Wells

WELL NO.
CMW-1
CMW-2
CMW-3
CMW-4

Should the Secretary or Permittee determine that the above sampling points do not adequately monitor groundwater passing the point of compliance, the Permittee shall propose a Permit modification to install/establish additional and/or alternate monitoring wells in accordance with 40 CFR 270.42.

V.B.6. Compliance Period

The compliance period for which the GWPS applies to the Waste Management Area shall be the number of years equal to the active life of the Waste Management Area. [40 CFR 264.96] The active life includes any waste management activities prior to permitting and the closure period. The active life of the Waste Management Area commenced in 1956 when the #1 Surface Impoundment and #2 Surface Impoundment were placed into operation and will

conclude with the closure certification of the Land Treatment Unit. Therefore, the compliance period shall be no less than 56 years. The compliance period shall begin once the closure certification for the Land Treatment Unit has been accepted by the Secretary.

V.C. GROUNDWATER COMPLIANCE MONITORING PROGRAM

During the term of this Permit, the Permittee shall establish and maintain a groundwater monitoring program to demonstrate compliance with the GWPS. Groundwater monitoring shall be conducted to comply with the requirements specified below which are in compliance with that portion of 40 CFR 264.97 applicable to groundwater monitoring programs conducted in accordance with 40 CFR 264.99.

V.C.1 Groundwater Monitoring System

The groundwater compliance monitoring system consists of two (2) background monitoring wells and four (4) compliance monitoring wells as specified in Permit Table 7.

Table 7 – Compliance Monitoring Well Network

Well Number	Monitoring Frequency	Compliance Well Association	Gradient Location
CMW-1	Quarterly	Compliance	Downgradient
CMW-2	Quarterly	Compliance	Downgradient
CMW -3	Quarterly	Compliance	Downgradient
CMW-4	Quarterly	Compliance	Downgradient
WN-1A	Quarterly	Background	Upgradient
WN-1B	Quarterly	Background	Upgradient

V.C.1.a The sampling locations specified in Permit Table 7 and depicted in Figure 3 of the Groundwater Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application will serve as the groundwater compliance monitoring system.

V.C.1.b. Should the Secretary determine that the wells designated to monitor groundwater passing the point of compliance are not adequate, the Permittee shall propose a Permit modification in accordance with 40 CFR 270.42 to install/establish additional and/or alternate monitoring wells.

- V.C.1.c. The Permittee shall report the surveyed elevation of the monitoring wells to the nearest 0.01 foot when the wells are installed. The total depth of wells and elevation of the following should be reported: top of casing reference mark, ground surface and/or concrete apron, the protective casing, and the top and bottom of the well screen, gravel pack, and well seals.
- V.C.1.d. All groundwater monitoring wells at the facility shall be maintained at locations specified in the Groundwater Monitoring Plan, Section 15 of the Part B Permit Application. This includes those wells which have been excluded from the groundwater compliance monitoring program, but used for capture zone and corrective action performance monitoring and supplemental information established in Section IV, Table 4, of this Permit.

V.C.2.Groundwater Monitoring System Objectives

- V.C.2.a. The groundwater compliance monitoring system shall consist of a set of monitoring wells designed, installed, and operated to collect samples from the uppermost aquifer and that meet the following objectives:
 - i. Is adequate to support collection of representative groundwater samples for comparison to the GWPS;
 - ii. Is adequate to detect significant evidence of increased/decreased contamination of groundwater at the point of compliance, and downgradient of the facility including groundwater that discharges into the Walnut River;
 - iii. Is adequate to detect the rate of migration and three-dimensional extent of all groundwater contaminant plumes at and beyond the point of compliance (including beyond the facility property boundary, if necessary).
- V.C.2.b. If the Secretary or Permittee determines that the groundwater monitoring program does not adequately meet the objectives as specified by Permit Condition V.C.2.a., the Permittee shall implement the following:
 - i. Submit, within ninety (90) days of the date of the determination that Permit Condition V.C.2.a has not been met, an application

for a permit modification to make appropriate changes to the groundwater compliance monitoring program in accordance with 40 CFR 264.99(j) and 270.42.

- ii. The Permittee must continue to monitor in accordance with the groundwater compliance monitoring program established in Permit Condition V.C.1.a. until the permit modification is approved.

V.C.3. Inspection and Maintenance of Monitoring System

- V.C.3.a. The Permittee shall implement an inspection and maintenance program for the groundwater monitoring system identified in Permit Condition V.C.1. These wells are to be inspected and maintained in accordance with Permit Conditions V.C.3.b through V.C.3.g. This program shall be designed to ensure the structural integrity of all wells during the post-closure period.
- V.C.3.b. Above ground well integrity inspections shall be performed at the time of each sampling event and shall be documented in the inspection log. The evaluation for each monitoring well shall include a visual inspection of the outer protective casing, inner casing riser, concrete apron, well cap, and locking mechanism to document any damage or deterioration. The ground surface in the immediate vicinity of each monitoring well and the annular space between the outer protective casing and inner casing riser shall be inspected for visible anomalies (e.g., collection or ponding of water, ground subsidence, etc.).
- V.C.3.c. Subsurface well integrity inspections shall be performed annually for all wells, in accordance with the provisions contained in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application and shall be documented in the inspection log. Subsurface well integrity inspections shall consist of one or more of the following: total well depth measurements, ground water turbidity measurements, in-situ hydraulic conductivity tests, casing caliper logs, down-hole video camera surveys, and/or other methods capable of verifying the subsurface integrity of the well casing and screen.
- V.C.3.d. The Permittee shall perform an annual wellbore siltation evaluation to assess downwell siltation and well screen occlusion for all monitoring wells. This evaluation shall be designed to ensure the representative nature of the required groundwater sample analysis and field

measurement results through minimization of sampling and measurement interferences (e.g., turbidity, excessive well screen occlusion, etc.).

- V.C.3.e. Wells demonstrating well screen occlusion equal to or in excess of 10% of the well screen length shall be redeveloped prior to the next scheduled sampling event.
- V.C.3.f. The Permittee shall perform well-specific surface and subsurface integrity inspections within seven (7) days following any contact of wells by flood waters.
- V.C.3.g. Monitoring well repairs shall be undertaken within thirty (30) days of identification of any surface or subsurface well integrity problem. If adverse weather or site conditions preclude the Permittee from gaining access to and repairing wells within thirty (30) days, then the Permittee shall take appropriate action with respect to this requirement as soon as practicable. Written justification for any delay, completed well inspection log sheets, a narrative description of any well repairs and before/after photographic documentation (in case of visible surface well repairs) shall be provided to the Secretary as part of the Annual Groundwater Corrective Reports required by Permit Condition V.D.

V.C.4.Modifications to Monitoring System

- V.C.4.a Any modification in the number and/or location of the monitoring wells established in Permit Condition V.B. for the Waste Management Area shall require a Permit modification approved by the Secretary in accordance with 40 CFR 270.42 and Permit Condition V.F.
- V.C.4.b. Any new groundwater monitoring well(s) installed by the Permittee to meet the requirements of this Permit shall be designed and installed in accordance with the requirements of 40 CFR 264.97, the objectives of the groundwater monitoring programs specified in Permit Condition V.C.2.a., and well-specific plans and specifications approved by the Secretary.
- V.C.4.c. The Permittee shall contact the Secretary at least five (5) working days prior to conducting any field work associated with the construction or modification of the groundwater monitoring system required by this Permit. The Secretary shall have the option of observing any portion of the system's construction or modification.

V.C.4.d. New or additional wells shall be inspected and maintained in accordance with procedures outlined in Permit Condition V.C.3., the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application, and 40 CFR 264.97.

V.C.4.e. All wells deleted from the monitoring system shall be plugged and abandoned in accordance with Kansas Regulatory requirements contained in K.S.A. 82a-1213 and K.A.R 28-30-7. Well plugging and abandonment methods and certification shall be submitted to the Secretary within thirty (30) days from the date the wells are removed from the monitoring system.

V.C.5.Sampling and Analysis Procedures

V.C.5.a. The Permittee shall perform groundwater sampling and analysis and field measurement of the groundwater-related parameters listed in Permit Table 7 to monitor compliance with the GWPS in the Waste Management Area and potential releases to the Walnut River according to the schedule in Permit Table 8.

Table 8 – Compliance Monitoring, Sampling, Analysis, and Parameter Measurements Schedule

Parameters	Type of Measurement	Frequency
Appendix IX	Analytical Lab Data	Every Five Years
GWPS Constituents ⁽¹⁾	Analytical Lab Data	When any constituent from the Shortened GWPS List exceeds the GWPS ⁽³⁾
Shortened GWPS List	Analytical Lab Data	Quarterly
pH	Field Measurement	Quarterly
Specific Conductance	Field Measurement	Quarterly
Turbidity	Field Measurement	Quarterly
Temperature	Field Measurement	Quarterly
Dissolved Oxygen	Field Measurement	Quarterly
ORP	Field Measurement	Quarterly
Static Water Levels ⁽²⁾	Field Measurement	Quarterly
Total Well Depth	Field Measurement	Annual
Immiscible Layer	Field Measurement	Quarterly

(1) Permit Attachment B

(2) Groundwater potentiometric surface measurements shall be collected at the time of each

regularly scheduled sampling event from all monitoring wells at the facility, including those which are not being sampled regularly.

⁽³⁾ In accordance with Permit Condition V.E.2.

ORP – Oxidation-Reduction Potential

V.C.5.b. The Permittee shall determine the groundwater surface elevation, total well depths, and immiscible layer measurements at each of the existing wells listed in Permit Table 7 in accordance with procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application and the following:

- i. The Permittee shall obtain groundwater surface elevations and immiscible layer measurements quarterly and total well depths annually for the monitoring wells established in Permit Condition V.C.
- ii. The Permittee shall obtain measurements of immiscible layer, groundwater surface elevation, and total well depth prior to purging any well.

V.C.5.c. The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from groundwater monitoring wells described in Permit Condition V.C.1.

- i. Samples shall be collected by the techniques described in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- ii. Samples shall be preserved and shipped for analysis, in accordance with the procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- iii. Samples shall be analyzed according to the procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.
- iv. Samples shall be tracked and controlled using the chain-of-custody procedures specified in the Sampling and Analysis Plan, Appendix P of the approved Part B Permit Application.

- v. All constituent chemical analyses shall be performed by a laboratory certified by KDHE in accordance with K.A.R. 28-31-264a(e).
- V.C.5.d. The Permittee shall determine the concentrations of the shortened GWPS list of hazardous constituents (noted in Permit Attachment B) specified in Permit Condition V.B., throughout the compliance period and any extensions due to corrective action implementation, to demonstrate conformance with the groundwater protection standard. The Permittee shall determine the concentration of the shortened GWPS list of hazardous constituents in groundwater for each sampling location specified in Permit Table 7, at least quarterly.
- V.C.5.e The Permittee shall analyze samples from all monitoring wells listed in Permit Table 7 for all hazardous constituents listed in the GWPS (Permit Attachment B) every three (3) years or when the GWPS has been exceeded for any one of the shortened GWPS list of constituents during a quarterly sampling event.
- V.C.5.f. Within five (5) years of the start of the Compliance Monitoring and every five (5) years thereafter, the Permittee shall sample and analyze groundwater from all monitoring wells listed in Permit Table 7 for all hazardous constituents listed in the GWPS (Permit Attachment B) and 40 CFR 264, Appendix IX to determine the concentrations of hazardous constituents present in the uppermost aquifer.
- i. If the Permittee finds additional hazardous constituents present (i.e., not listed in Permit Attachment B), their concentrations shall be reported to the Secretary in writing within seven (7) days from completion of the analyses. The results of the analyses must be submitted to the Secretary within sixty (60) days of the sample collection date.
 - ii. If hazardous constituents are identified in the groundwater, which are not currently specified in the GWPS, the Permittee may resample the groundwater to confirm detection within thirty (30) days from notifying the Secretary. The results of the resample analyses must be submitted to the Secretary within sixty (60) days of the sample collection date. If the Permittee's subsequent groundwater analyses confirm the presence of additional hazardous constituents, then the Permittee shall have thirty (30) days from the date KDHE receives the results to

propose a Permit modification in accordance with 40 CFR 270.42 to add the confirmed hazardous constituents to the GWPS (Permit Attachment B) and the groundwater monitoring program.

- V.C.5.g. The Permittee shall statistically compare the measured concentration of each monitored hazardous constituent with its concentration limit in the GWPS each time groundwater quality is determined in accordance with the Groundwater Monitoring Plan, Section 15, and the Sampling and Analysis Plan, Appendix P, of the approved Part B Permit Application. When evaluating the monitoring results to determine compliance with the GWPS, the Permittee shall determine whether there is statistically significant evidence of an exceedance or compliance with the GWPS at each monitoring well at the completion of each sampling analysis. Statistical procedures must comply with the requirements of 40 CFR 264.99 and 40 CFR 264.97(h). The Permittee shall perform the statistical evaluation within thirty (30) days from the completion of the sampling analysis. The sampling analysis must be completed within forty (40) days of the sample collection date. The Permittee shall notify the Secretary in writing within seven (7) days of completion of the analysis if the groundwater protection standard has been exceeded at any monitoring well.

V.D. GROUNDWATER REPORTING REQUIREMENTS

V.D.1. Annual Groundwater Reporting Requirements

- V.D.1.a. The Permittee shall prepare and submit on an annual basis for the preceding calendar year, a Groundwater Monitoring Report providing a comprehensive evaluation of the groundwater monitoring program including a narrative discussion of the nature and evolution of the program as well as the overall adequacy of the program. Any conclusions concerning inadequacies in the groundwater monitoring program shall be accompanied by a discussion of proposed amendments. Specific details concerning any proposed amendments should be further developed outside the scope of these reports and/or as otherwise specified in this Permit. The Permittee's Annual Groundwater Monitoring report shall be submitted to the Secretary by March 1 for each preceding calendar year.[40 CFR 264.97(j)]
- V.D.1.b. The Permittee's Annual Groundwater Monitoring Reports shall evaluate the adequacy of the groundwater compliance program including, but not limited to, the following:

- i. A comparison of the levels of each hazardous constituent measured at each sampling location during the previous calendar year, to the associated concentration limit. The hazardous constituents and concentration limits required by the Groundwater Protection Standard (GWPS) are specified in Permit Attachment B.
 - ii. An evaluation of the rate and direction of groundwater movement in the underlying aquifer and potential effects on any component of the compliance monitoring program to determine compliance with the GWPS.
 - iii. An evaluation of the horizontal and vertical extent and concentrations of any hazardous constituents in groundwater throughout the Waste Management Area as determined from the data collected from the Permittee's groundwater monitoring system.
 - iv. An analysis of trends in the levels of hazardous constituents from year to year based on sampling results to determine whether there is significant evidence of increased contamination. If there is an increasing trend for any of the hazardous constituents at any well, the report must contain an evaluation of the source of the increased contamination and provide conclusions as to whether a new release from a regulated unit has occurred.
 - v. An evaluation of surface and/or subsurface monitoring well integrity including identification of any actual or potential problems that may influence the groundwater data or efficiency of the groundwater monitoring program.
- V.D.1.c. The Annual Reports shall comprehensively address all of the technical requirements of 40 CFR Part 264 Subpart F and this Permit. The Permittee shall summarize relevant groundwater monitoring information and shall present this information in the form of narrative discussions, groundwater flow calculations, and/or diagrammatic illustrations (i.e., tabular groundwater and statistical data summaries, hydrogeologic and potentiometric contour maps/cross-sections, chemical parameter trend graphs, calculated rate(s) of contaminant migration, contaminant isoconcentration maps/cross-sections, fence/isometric diagrams, groundwater flow nets, etc.), and other information as appropriate.

- V.D.1.d. The Annual Monitoring Reports shall provide sampling results including, but not limited to, the following:
- i. A description of the monitoring activities and operation and maintenance performed including recommendations, if necessary, for the groundwater monitoring system,
 - ii. Quarterly groundwater monitoring laboratory analytical reports, including quality assurance/quality control data,
 - iii. Quarterly groundwater static water level measurements,
 - iv. Photocopies of the field forms and laboratory chain of custody forms,
 - v. A digital copy of the Annual Groundwater Monitoring Report including tables, figures, and appendices.

V.D.2.Groundwater Monitoring Well Installation Reporting Requirements

- V.D.2.a. The Permittee shall submit a well installation report to the Secretary within sixty (60) days from the date the field activities were completed with the following information:
- i. A discussion summarizing the field activities,
 - ii. Detailed boring logs with descriptions of soils and geologic formations encountered during the drilling activities,
 - iii. Detailed as-built monitoring well diagrams,
 - iv. Well records,
 - v. A copy of the report submitted by the Registered Land Surveyor; and
 - vi. A copy of the field notes documentation.
- V.D.2.b. The Permittee shall provide a summary of all well installation activities performed during the year in the Annual Groundwater Monitoring Report.

V.D.3. Recordkeeping

The Permittee shall enter all monitoring, testing, and analytical data collected according to Permit Condition V.C.5., in the operating record. The data must include all computations, calculated means, variances, and results of the statistical tests that the Secretary has specified. [40 CFR 264.73(b)(6)]

V.E. REQUIREMENTS IF THE GROUNDWATER PROTECTION STANDARD IS EXCEEDED

V.E.1. Notification to the Secretary

The Permittee shall notify the Secretary in writing within seven (7) days of the groundwater protection standard exceedance at any groundwater compliance monitoring well. The notification must identify the hazardous constituent(s), the concentration(s), and the monitoring wells where the groundwater protection standard has been exceeded. [40 CFR 264.99(h)(1)] The Permittee may include a request to demonstrate that exceedance of the groundwater protection standard was due to sources other than the Waste Management Area or errors in sampling, analysis, or evaluation. [40 CFR 264.99(i)(1)]

V.E.2. Demonstration of Other Sources

- V.E.2.a. The Permittee must submit a report to the Secretary, within ninety (90) days, that demonstrates a source other than the regulated units caused exceedance of the groundwater protection standard or was a result of an error in sampling, analysis, or evaluation. [40 CFR 264.99(i)(2)]
- V.E.2.b. If the Permittee demonstrates the exceedance of the groundwater protection standard was due to a source other than the regulated units or was a result of an error in sampling, analysis, or evaluation, the Permittee may continue groundwater compliance monitoring; otherwise, the Permittee shall re-initiate the Groundwater Corrective Action Program specified in Permit Condition V.E.3.
- V.E.2.c. The Permittee must continue to monitor in accordance with the compliance monitoring program established in Permit Section V until the Secretary determines the demonstration specified in Permit Condition V.E.3.c. is acceptable. [40 CFR 264.99(i)(4)]

V.E.3. Corrective Action

If an exceedance is confirmed, the Permittee shall immediately re-initiate the Groundwater Corrective Action Program for the Waste Management Area as specified in Permit Section IV. The Permittee shall notify the Secretary within thirty (30) days of the initiation of all groundwater corrective action activities.

V.F. REQUEST FOR PERMIT MODIFICATION

If the Permittee or the Secretary determines that the groundwater compliance monitoring program established by this Permit no longer satisfies the requirements of 40 CFR 264.99, the Permittee shall submit an application for a permit modification within ninety (90) days of the date of this determination detailing changes to the compliance monitoring program.[40 CFR 264.99(j)] The request for permit modification must be made in accordance with Permit Condition I.B.1.



EXPLANATION

- RW-35 ■ GROUNDWATER CONTAINMENT AND RECOVERY WELL
- WN-6B ▲ SHALLOW ALLUVIAL MONITORING WELL
- WN-6A ▼ DEEP ALLUVIAL MONITORING WELL
- CMW-3 ● CAPTURE ZONE MONITORING WELL
- (light blue) DIRECTION OF SURFACE WATER FLOW
- (dark blue) DIRECTION OF GROUNDWATER FLOW
- - - - - SITE PROPERTY BOUNDARY



DATE	DESIGN BY	DRAWN BY	REVIEWED BY
6/19/2012	RPB	CCL	JFM

AERIAL PHOTO: MARCH 12, 2005

TITLE:

SITE MAP ATTACHMENT A TO PERMIT

PROJECT:

**MRP PROPERTIES COMPANY, LLC
ARKANSAS CITY, KANSAS**

Figure No.:

ATTACHMENT B: GROUNDWATER PROTECTION STANDARD ANALYTES

Constituent	Concentration Limit (µg/l)
Antimony*	6 ^a
Arsenic*	10 ^a
Barium*	2000 ^a
Beryllium*	4 ^a
Cadmium	5 ^a
Chromium*	100 ^a
Cyanide*	200 ^a
Lead*	15 ^a
Mercury*	2 ^a
Nickel*	2040 ^b
Selenium*	50 ^a
Silver*	508 ^b
Vanadium	80 ^c
Zinc*	30500 ^b
Acenaphthene	521 ^b
Anthracene	2500 ^b
Benzene***	5 ^a
Benzo (a) anthracene	0.75 ^b
Benzo (b) & Benzo (k) fluoranthene	0.537 ^b
Benzo (a) pyrene	0.2 ^a
Bis (2-ethylhexyl) phthalate	6 ^b
Butyl benzyl phthalate	1120 ^b
Carbon disulfide*	1660 ^b
Chlorobenzene	100 ^a
Chloroform	80 ^b
Chrysene	75 ^b
2-Methylphenol	4780 ^b
3 & 4-Methylphenol	478 ^b
Dibenzo (a,h) anthracene	0.0270 ^b
Dibenzofuran	8.6 ^b
Dibutyl phthalate	8400 ^b
1,2-Dichlorobenzene	600 ^b
1,4-Dichlorobenzene	75 ^b

Constituent	Concentration Limit (µg/l)
1,2-Dichloroethane	5 ^a
1,1-Dichloroethylene	7 ^b
2,4-Dimethylphenol	1860 ^b
7,12-Dimethylbenz(a)anthracene	10 ^c
2,4-Dinitrotoluene	8.98 ^b
Di-n-octyl phthalate	89.4 ^b
1,4-Dioxane	259 ^b
Ethylbenzene***	700 ^a
Ethylene dibromide	0.05 ^a
Fluoranthene	1370 ^b
Fluorene*	341 ^b
Indeno (1,2,3-cd) pyrene	0.392 ^b
Methyl ethyl ketone	11800 ^b
Methyl tert-butyl ether	262 ^b
1-Methylnaphthalene	10 ^c
2-Methylnaphthalene	34.6 ^b
Naphthalene*	2.11 ^b
Nitrobenzene	1.85 ^b
Phenanthrene	10 ^c
Phenol	29500 ^b
Pyrene	1090 ^b
Pyridine	9.28 ^b
Styrene*	100 ^a
Tetrachloroethylene	5 ^a
Toluene***	1000 ^a
Trichloroethylene*	5 ^a
1,1,1-Trichloroethane	200 ^b
1,2,4-Trimethylbenzene	17.4 ^b
1,3,5-Trimethylbenzene	88.4 ^b
Xylenes (Total)***	10000 ^a

Notes:

a – MCL – Maximum Contaminant Level, established under the National Primary Drinking Water Regulations

b – KDHE Risk-Based Standards for Kansas, October 2010

c – 40 CFR 264, Appendix IX PQL^c

µg/l – micrograms per liter

* - Shortened GWPS constituents list to be sampled during quarterly Compliance Monitoring

** - BTEX constituents to be sampled during semi-annual Corrective Action Monitoring