Texas Commission on Environmental Quality

Austin, Texas

COMPLIANCE PLAN FOR INDUSTRIAL SOLID WASTE MANAGEMENT SITE issued under provisions of TEXAS HEALTH AND SAFETY CODE ANN. Chapter 361 and Chapter 26 of the Texas Water Code

COMPLIANCE PLAN NO. 50343
EPA ID. NO. TXD000820266
IHW NO. 31547

This Compliance Plan is issued in conjunction with Permit No. 50343

This Compliance Plan supersedes and replaces Compliance Plan No. 50343 issued June 20, 1994

First Issuance Date June 20, 1994

Name of Permittee:	Union Pacific Railroad Company 1416 Dodge Street Omaha, Nebraska 68179
Site Owner:	Union Pacific Railroad Company 1416 Dodge Street Omaha, Nebraska 68179
Registered Agent for Service:	Rick Walton General Solicitor Union Pacific Railroad Company 808 Travis Street, Suite 620 Houston, Texas 77002
Classification of Site:	Hazardous Industrial Solid Waste Post-Closure Care

The Permittee is required to conduct the Corrective Action and Ground-Water Monitoring Programs in accordance with limitations, requirements, and other conditions set forth herein. All references herein refer to the Compliance Plan unless the Permit is specifically referenced. This Compliance Plan is issued subject to the rules and other Orders of the Commission and laws of the State of Texas. This Compliance Plan does not exempt the Permittee from compliance with the Texas Clean Air Act.

This Compliance Plan remains in effect until amended or revoked by the Commission. This Compliance Plan will be reviewed upon expiration of Permit No. 50343 and modified as necessary to assure compliance with 30 TAC Chapters 305, 335 and 350, where applicable.

ISSUED: JUN 10 2005

For The Commission

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I. GENERAL INFORMATION (AND APPLICABILITY)

A. The industrial solid waste management facility is located on approximately 33 acres in Harris County, Texas, approximately 1 mile north northeast of the intersection of Interstate Highway 10 and Waco, on the south side of Liberty Road. The facility is in the drainage area of Segment No. 1007 of the San Jacinto River Basin (North Latitude 29° 47' 14", West Longitude 95° 19' 13").

The term "Uppermost Aquifer" as referenced in this Compliance Plan consists of a sand layer identified as the A-Transmissive Zone. At the Closed Surface Impoundment, the A-Transmissive Zone is encountered approximately 13 feet below ground surface (BGS) and averages 7 feet in thickness. The term "Lower Aquifer" as referenced in this Compliance Plan consists of a sand layer identified as the B-Transmissive Zone. The B-Transmissive Zone is encountered at the Closed Surface Impoundment approximately 30 feet BGS and averages 9 feet in thickness.

Language for both Corrective Action Program (30 TAC §335.166) and Compliance Monitoring Program (30 TAC §335.165) are included in this Compliance Plan for reference and as contingency for future changes in accordance with Section IV.F. Applicability of specific Corrective Action Program or Compliance Monitoring Program [Reserved] requirements depends on the status of the units, as defined in Section I.B., I.C. and Table I.

B. The Compliance Plan is specific to the waste management units listed in Table I (Parts A and B) and depicted in Attachment A, for which the ground-water Corrective Action Program and Compliance Monitoring Program [Reserved] apply, pursuant to 30 TAC §335.166 and §335.165, for releases from RCRA-regulated units.

C. The Compliance Plan is specific to the solid waste management units/areas of concern listed in Table I (Part C) and depicted in Attachment A, for which the Corrective Action Program applies pursuant to 30 TAC §335.167 for releases from the solid waste management units.

D. The Compliance Plan is specific to the solid waste management units (SWMUs) and/or Areas of Concern (AOCs) listed in Table II for which investigation and necessary corrective action applies pursuant to 30 TAC §335.167 and 30 TAC §350 and Section VIII of this Compliance Plan.

E. The Compliance Plan applies to any SWMU and/or AOC discovered subsequent to issuance of this Compliance Plan. The Permittee shall notify the executive director within fifteen (15) days of such discovery. Within sixty (60) days of discovering a SWMU or AOC, the Permittee shall submit a report for that unit or area, identifying releases or potential releases of hazardous waste, hazardous constituents or other constituents of concern from SWMUs or AOCs that may require corrective action. If the report indicates that there is a release or a potential for release that warrants further investigation, the Permittee shall conduct an affected property assessment and necessary corrective action based on 30 TAC Chapter 350 requirements, applicable guidance, and the approved schedules in accordance with Section VIII of the Compliance Plan.

[I.]

F. All dates in this Compliance Plan shall be referenced to the date of issuance of this Compliance Plan by the Texas Commission on Environmental Quality (TCEQ) unless otherwise specified. This Compliance Plan was developed based on the Compliance Plan Application dated December 22, 2003, which contained a Sampling and Analysis Plan revised May 13, 2004.

II. CORRECTIVE ACTION AND COMPLIANCE MONITORING [Reserved] SYSTEMS - Components and Functions Authorized

Corrective Action Systems are required for units specified in Table I, Parts A and C. The Permittee is authorized to install and operate the following Corrective Action System components specified in Sections II.A through II.G, subject to the limitations contained herein. Compliance Monitoring System components for units listed in Table I, Part B are specified below in Section II.H. [Reserved].

For Corrective Action Systems:

A. Ground-water monitoring system shall at a minimum consist of the following categories of wells, listed in Table V, to monitor ground-water quality.

1. Background Well(s) unaffected by the operation of the facility.

2. Point of Compliance Wells to demonstrate compliance with the Ground-Water Protection Standard (GWPS).

3. Point of Exposure Wells, if any such wells are designated in Table V, to demonstrate compliance with the GWPS and evaluate the effectiveness of the remediation program.

B. The Permittee is authorized to install and operate the following additional corrective action system wells to monitor ground-water quality and hydrogeological conditions of the aquifer.

1. Corrective Action Observation Wells to evaluate the lateral and vertical extent of ground-water contamination in the Uppermost Aquifer and evaluate the effectiveness of the remediation program.

2. Corrective Action System Wells to remediate and/or contain contaminated ground water.

C. Ground-water Corrective Action System to effect withdrawal, treatment, and/or containment of contaminated ground water and non-aqueous phase liquids (NAPLs) by means of recovery wells, interceptor trenches, bioremediation, air sparging and/or another alternate Corrective Action System design. Any alternate Corrective Action System designs proposed by the Permittee subsequent to issuance of this Compliance Plan that are equivalent to or exceed the performance of the Corrective Action Systems approved herein shall become part of the Compliance Plan upon approval by the executive director. The type of Corrective Action System in operation at the facility and an evaluation of system performance shall be reported in accordance with Section VII.C.2.

[II.]

D. Collection and conveyance system to store recovered ground water and non-aqueous phase liquids (NAPLs), if found, prior to disposal at authorized facilities. If the recovered ground water is characteristically hazardous and/or is contaminated with listed hazardous waste and the collection system does not meet the wastewater treatment unit exemption under 30 TAC §335.2(f) and §335.41(d), the collection system shall comply with the following regulations: 1) If the contaminated ground water is stored without a permit or interim status for less than ninety (90) days, then the container and tank collection systems shall comply with provisions of 30 TAC §335.69(a)(1) / 40 CFR Part 265 Subparts I and J; 2) If the contaminated ground water is stored for more than ninety (90) days, then the container and tank collection system shall comply with the provisions of 30 TAC §335.152(a)(7) & (8) / 40 CFR Part 264 Subparts I and J. The collection and conveyance system shall consist of the following components.

1. A ground-water corrective action system.

2. A ground-water storage system.

3. Appurtenances for the collection and conveyance of recovered contaminated ground water and non-aqueous phase liquids (NAPLs), if applicable.

E. Treatment system to reduce the concentration of hazardous constituents to the concentration specified in Table III in contaminated ground water by means of biological, physical, and chemical treatment processes.

F. Ground-water containment system to inhibit contaminated ground water above Table III concentration limits from migrating beyond the influence of the corrective action system.

G. Reinjection of fresh or recovered ground water, after treatment, into the contaminated aquifer in accordance with 30 TAC §331.9-10.

Compliance Monitoring Systems:

H. [Reserved]

III. GENERAL DESIGN, CONSTRUCTION, AND OPERATION REQUIREMENTS

A. All plans submitted with the Compliance Plan Application referenced in Section I.F concerning the design, construction, and operation of the authorized components of the Corrective Action and Ground-Water Monitoring Programs and/or ground-water Compliance Monitoring Program are approved subject to the terms established by this Compliance Plan. All plans must comply with this Compliance Plan and TCEQ Rules. Any alternate Corrective Action System design proposed by the Permittee subsequent to issuance of this Compliance Plan that are equivalent to or exceed the performance of the Corrective Action Systems approved herein shall become part of the Compliance Plan upon approval by the executive director.

[III.]

B. The following handling methods are authorized for recovered ground water having concentrations of hazardous constituents exceeding the Ground-Water Protection Standard:

1. Treatment through an on-site wastewater treatment system and discharge via a permitted outfall in compliance with a current industrial wastewater discharge permit.

2. Treatment of recovered ground water by means of air stripping and carbon adsorption. The air stripper shall be maintained in compliance with applicable air quality regulations.

3. Disposal at permitted deep injection well facility.

4. Disposal at other authorized on-site facility or permitted off-site facility.

5. Any other treatment methods approved by the executive director.

The method(s) utilized for handling recovered ground water shall be reported in accordance with Section VII.C.2.

C. The Permittee shall maintain a list of disposal methods and volume of all recovered contaminated ground water pursuant to this Compliance Plan, including water purged from wells during sampling at each well, and make it available for inspection upon request.

D. Recovered NAPLs, if found, shall be managed (treatment, storage, and disposal), or recycled in an authorized on-site unit(s) or an off-site facility.

E. Well Construction, Installation, Certification, Plugging and Abandonment Procedures

1. For all wells to be constructed after issuance of this Compliance Plan that do not meet the well construction specifications identified in Attachment B, the Permittee shall submit to the executive director the proposed well location and construction diagram for approval at least ninety (90) days in advance of the anticipated date of installation or in accordance with an approved schedule for installation. These requirements may be met through submittal of a work plan by the Permittee and subsequent approval by the executive director. Well installation shall commence upon written approval of the executive director.

2. All wells shall be constructed and maintained so ground-water samples are representative of the aquifer's water quality. A record of drilling and construction details demonstrating compliance with the terms of this Section of this Compliance Plan shall be prepared in accordance with Attachment B. Wells constructed prior to issuance of this Compliance Plan may be utilized as ground-water monitoring wells if they meet the standards of Attachment B or are otherwise authorized by issuance of the Compliance Plan.

[III.E.]

3. The Permittee shall submit certification of well installation in accordance with Attachment B in the first report to be submitted pursuant to Section VII.C.2 after well installation is completed. If the Permittee or the executive director determines that the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of ground-water quality, then the Permittee shall replace the well.

4. Unless the Permittee proposes an alternate well design that will result in wells of equivalent performance, each well installed after issuance of this Compliance Plan shall follow the design specifications contained in Attachment B of this Compliance Plan.

5. Prior to installation of a Point of Compliance, Point of Exposure, or Background replacement well listed in Table V, the Permittee shall submit to the executive director for approval, the replacement well specifications and an explanation of why the well is being replaced. For any such well to be considered as a replacement well and not as a new well, the well shall have no substantive design changes from the well being replaced as determined by the executive director. The well shall be drilled within fifteen (15) feet of the well being replaced unless an alternate location is authorized by the executive director. The Permittee shall submit a replacement well certification to the executive director in accordance with Section VII.C.2 and Attachment B.

6. Plugging and abandonment of a Corrective Action System Background, POC, and/or POE wells in Section II.A shall be subject to the Compliance Plan modification provisions in 30 TAC §305 Subchapter D. Plugging and abandonment of Corrective Action Observation and or Corrective Action System wells in Section II.B, shall commence upon written approval of the executive director. The well shall be plugged and abandoned in accordance with Attachment B. The Permittee shall certify proper plugging and abandonment in accordance with Section VII.C.2 and Attachment B.

F. The Permittee shall not install or maintain any drinking water or supply wells that are screened within plumes of ground-water contamination at the facility.

IV. CORRECTIVE ACTION AND COMPLIANCE MONITORING [Reserved] OBJECTIVES AND THE GROUND-WATER PROTECTION STANDARD

Corrective Action Objectives are listed in Sections IV.A through IV.F. Compliance Monitoring Objectives are listed in Sections IV.G through IV.N. [Reserved].

Corrective Action Objectives for units specified in Table I, Parts A and C:

A. The Ground-Water Protection Standard (GWPS) defines the objective of ground-water quality restoration, with respect to hazardous constituents, which is to be achieved at the Point of Compliance (and Point of Exposure, if applicable) and beyond in accordance with Provision V.A by operation of the Corrective Action Program at this facility.

[IV.]

B. Point of Compliance (and Point of Exposure, if any) is designated in Attachment A and further defined for purposes of this Compliance Plan by Table V, which identifies Point of Compliance (and Point of Exposure, if any) wells for which ground-water monitoring procedures will apply (Section VI).

C. Hazardous constituents detected in ground water are specified in Column A of Table III.

D. Concentration limits are specified in Table III. These values shall be utilized as concentration limits of the Ground-Water Protection Standard (GWPS) and shall be the values for statistical comparisons unless Table III is amended in accordance with current guidance and regulations or any other accepted levels as promulgated by the TCEQ or the Environmental Protection Agency. The Table III values will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Table III. The executive director or the Permittee may request to replace concentration limits through a modification or amendment to this Compliance Plan in accordance with 30 TAC §305 Subchapter D.

E. Compliance Period for each unit is specified in Table VI.

F. Ground-Water Protection Standard Achieved

1. Achievement of the GWPS in accordance with Section V.A is defined by the results of the data evaluation of Section VI.D wherein the concentrations of hazardous constituents have been reduced by the Corrective Action Program (Section V) to concentrations that do not exhibit an increase when directly compared to the concentration limits of Table III or a statistically significant increase if statistical procedures are used.

2. If the GWPS is achieved at the RCRA-regulated units or waste management areas in accordance with Section V.A in the corrective action area during the Compliance Period, the Permittee may apply to modify or amend this Compliance Plan to revise the Corrective Action Program to the extent necessary to demonstrate by means of the Ground-Water Monitoring Program that the GWPS will not be exceeded during the remainder of the Compliance Period.

3. If the GWPS is not achieved at the RCRA-regulated units or waste management areas in accordance with Section V.A in the corrective action area during the Compliance Period, the Corrective Action Program must continue until the GWPS has not been exceeded in all wells for that corrective action area for three (3) consecutive years.

4. If the GWPS established in this Compliance Plan for the RCRA-regulated unit or waste management area have not been exceeded for three (3) consecutive years at the end of the Compliance Period, then the Permittee must, within ninety (90) days, submit an application for a Compliance Plan/Permit modification or amendment to establish a Compliance Monitoring Program or a Detection Monitoring Program for

[IV.F.4.]

the aquifer(s) during the remaining portion of the 30-year post-closure care period in accordance with 40 CFR Part 264.117. If the 30-year post-closure care period has expired, the Permittee may request ground-water monitoring for that RCRA-regulated unit or waste management area be discontinued. Until approval of the request, the Permittee shall continue ground-water monitoring under current Compliance Plan provisions for each RCRA-regulated unit or waste management area.

5. If the GWPS established in this Compliance Plan for a Solid Waste Management Unit have not been exceeded for three (3) consecutive years for all wells for that unit, then the Permittee may apply for a modification or amendment to the Compliance Plan to terminate the Corrective Action Program for that unit.

Compliance Monitoring Objectives for units specified in Table I, Part B:

G. through N. [Reserved]

V. CORRECTIVE ACTION PROGRAM

The Corrective Action Program applies to units specified in Table I, Parts A and C. The Corrective Action Program shall remediate, recover, and/or contain contaminated ground-water from the Uppermost Aquifer and any interconnected lower aquifers, if applicable. The Corrective Action Program shall consist of the system components of Section II, to be operated according to the specifications of this Compliance Plan. The Permittee shall conduct the Corrective Action Program until the performance standards of Section V.A are met. The Permittee shall initiate the Corrective Action Program immediately upon issuance of this Compliance Plan, except where other specific TCEQ response deadlines may apply.

A. Performance Standard

The Permittee shall conduct the Corrective Action Program to remedy the quality of ground water by removing or treating in place the hazardous constituents so as to achieve the concentration limits specified in the Ground-Water Protection Standard (GWPS) of Section IV of this Compliance Plan in accordance with the following:

1. At the Point of Compliance (and Point of Exposure, if any) and between the Point of Compliance (and Point of Exposure, if any) and the downgradient facility property line;

2. Beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the executive director that, despite the Permittee's best efforts, the necessary permission from the property owner(s) was not received to undertake such action. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied;

[V.A.]

3. Operate the Corrective Action System so as to intercept, contain and/or treat the contamination in the Uppermost Aquifer unless the system is under repair or maintenance; and,

4. Recommend changes to the configuration of the Corrective Action System at any time that it is determined that the contamination present in the Uppermost Aquifer, deeper zone, or any interconnected lower aquifers is not being effectively contained and/or remediated.

5. The Permittee is required to actively remove NAPLs from the Uppermost Aquifer and any interconnected aquifers wherever found, to the extent technically practicable.

B. The Corrective Action Program shall consist of the system components of Section II.A through II.G, to be operated according to the plans and specifications as approved in Section III.A and the specifications of this Compliance Plan.

1. If ground-water recovery wells are utilized in the Corrective Action System, the flow rate at each Recovery Well shall be set and recorded once a week. This weekly flow rate data shall be used to calculate a semiannual total flow which shall be reported in accordance with Section VII.C.2.h of this Compliance Plan.

2. All Corrective Action System components shall be maintained in a functional and leak-free condition. All above ground collection system pipes shall be inspected weekly. In addition, the area surrounding the wells shall be inspected weekly for visible signs indicating leaks in buried sections of the collection system. If a release, of reportable quantity, is detected in any part of the collection system, it must be reported within twenty-four (24) hours to the local TCEQ Region Office, and immediate action must be taken to stop the release and resolve the problem.

3. The Permittee shall notify the executive director of any scheduled or non-scheduled periods of Corrective Action System shutdown, Corrective Action System malfunction, or treatment system shutdown for maintenance lasting more than thirty (30) days. The Permittee shall notify the executive director in writing no later than seven (7) days following the date the Permittee determines that the shutdown will last more than thirty (30) days. All shutdowns and malfunctions, irrespective of duration, shall be recorded in the facility's inspection log.

VI. GROUND-WATER MONITORING PROGRAM

The Permittee shall install, operate and maintain the Ground-Water Monitoring System to evaluate the compliance status of the waste management units under the Compliance Monitoring Program [Reserved], or to evaluate the effectiveness of the Corrective Action Program for those units undergoing remediation, as applicable. The Ground-Water Monitoring System, at a minimum, shall be composed of wells specified in Table V, and shall include Background, Point of Compliance, Point of Exposure (if applicable) and other wells as necessary which have been approved by the executive director.

[VI.]

A. Waste Management Area Specific Background Ground-Water Quality

The Permittee may submit to the executive director for review and approval a plan to determine waste management area specific background values of the naturally-occurring hazardous constituents of Table III (for Corrective Action) or Table IVA (for Compliance Monitoring [Reserved]) in lieu of the concentration limits given in these Tables. The plan shall include appropriate background well locations and screened intervals, well sampling schedules, and methodology for determining and expressing background values in a form appropriate for the statistical evaluation of the monitoring results. Once background values have been established, the Permittee shall submit a modification or amendment request to the executive director in accordance with 30 TAC §305 Subchapter D to replace the concentration limits of Table III (for Corrective Action) or Table IVA (for Compliance Monitoring) [Reserved] with the background values.

B. Sampling and Analysis Plan

1. Wells shall be sampled according to the Sampling and Analysis Plan referenced in Section I.F. The Sampling and Analysis Plan is hereby incorporated into the Compliance Plan by reference as if set out fully herein. The Permittee or the executive director shall propose modifications as necessary to the Sampling and Analysis Plan. Any and all revisions to the plan shall become conditions of this Compliance Plan at the beginning of the first quarter following approval by the executive director.

2. An up-to-date and approved Sampling and Analysis Plan shall be maintained at Union Pacific Railroad's offices in Spring, Texas and made available for inspection upon request.

3. The collected samples shall be analyzed in accordance with the current edition of U.S. EPA Publication SW-846, Test Methods for Evaluating Solid Waste and American Society for Testing and Materials (ASTM) Standard Test Methods or any other methods accepted by the TCEQ. Ground-water analyses required by this Compliance Plan shall utilize laboratory methods which are capable of measuring the concentration of each hazardous constituent at a concentration equal to or less than the corresponding value specified in Table III or IVA.

C. Sampling and Analysis Frequencies and Parameters

1. Frequencies of sampling are defined below:

a. "Week" and "month" shall be based upon a calendar week and month;

b. "Quarter" shall be based on divisions of the calendar year (i.e., January through March, April through June, July through September, October through December);

[VI.C.1.]

c. "Semiannual" shall be based on divisions of the calendar year (i.e., January through June, July through December) and consist of two consecutive quarters;

d. "Annual" or "Year" shall be four consecutive quarters, beginning with the first quarter. Years shall be designated consecutively, beginning with the "first year", "second year", etc; and,

e. "Calendar year" shall be based on divisions of the calendar (i.e. January through December).

2. Sampling of wells shall commence during the first complete quarter after issuance of this Compliance Plan. Thereafter, samples shall be collected on a semiannual basis during the first thirty (30) days of each first and third quarter. Data evaluations shall be completed within sixty (60) days of collection of the last sample unless QA/QC procedures show that data is unacceptable and reanalyses or resampling must be performed. In such cases, the executive director will be notified as soon as it becomes apparent that the 60-day time limit will not be met.

3. In the first and subsequent years of ground-water monitoring, the wells shall be sampled and analyzed according to the following schedules:

a. Corrective Action Monitoring for units specified in Table I, Parts A and C

i. Each Background Well, Point of Compliance (POC) (and Point of Exposure (POE), if applicable) Well, Corrective Action Observation Well, and Corrective Action System Well shall be sampled and analyzed semiannually for the constituents of Table IV until the achievement of the Ground-Water Protection Standards (GWPS) in accordance with Section IV.F.

ii. Each Corrective Action Observation Well and Corrective Action System Well shall continue to be sampled according to Section VI.C until any changes to these groups of wells are approved by the executive director pursuant to Section II.C.

iii. Each POC (and POE, if any) Well of Table V shall be sampled for the constituents of Table IV according to Section VI.C until analytical results satisfy the GWPS of Table IV for all POC (and POE, if any) Wells of that unit or area for two consecutive sampling events. All POC (and any POE) Wells shall then be sampled and analyzed semiannually for the constituents of Table III until all constituents of Table III are below the GWPS for all POC (and any POE) Wells of that unit or area in accordance with Section IV.F.

[VI.C.3.]

iv. If the GWPS is achieved in all Wells (Background, POC, POE, Corrective Action Observation and Corrective Action System Wells) in accordance with Section IV.F.1, then the Permittee may apply to modify or amend the Compliance Plan according to Section IV.F.2., Section IV.F.4., or Section IV.F.5.

v. Any well with non-aqueous phase liquids (NAPLs) detected in the wellbore shall be considered as non-compliant with the GWPS and is not required to be analyzed for the constituents of Table III or Table IV.

b. Compliance Monitoring for units specified in Table I, Part B

i. and ii. [Reserved]

4. Field Determination Requirements - All Wells Specified in Section VII.C.2.c.

a. Water level measurements relative to Mean Sea Level shall be measured to within 0.01 ft and shall be performed during each sampling event effective immediately with issuance of this Compliance Plan. Measurements shall be taken in all monitor wells specified in this Compliance Plan.

b. Field determinations of pH, Temperature and Specific Conductivity are required for all Background, POC (and POE, if any), Corrective Action Observation and Corrective Action System Wells, excluding wells containing NAPLs. Turbidity in nephelometric turbidity units (NTUs) is required if micropurging techniques are utilized during sample collection.

c. Field observations including descriptions of appearance (clarity, color, etc.) shall be recorded semiannually for all Background, POC (and POE, if any), Corrective Action Observation and Corrective Action System Wells, excluding wells containing NAPL.

d. The total depth of each well which is not equipped with a dedicated pump, shall be measured during each sampling event. Total depth of each well which is equipped with a dedicated pump, shall be measured when: 1) pumps are removed for maintenance; or 2) the ground-water production rate of the dedicated pump decreases by 25% from the initial production rate when the pump was installed. The measured total depth shall be compared to the total depth recorded on the well construction log. Should a comparison of the measured and the recorded total depth reveal that greater than 20% of the well screen has been silted in, the Permittee shall perform such actions necessary (redevelopment, replacement, etc.) to enable the well to function properly.

[VI.C.4.]

e. All wells specified in Section VII.C.2.c shall be inspected during each sampling event in accordance with specifications in the Sampling and Analysis Plan. Repairs or a proposal for replacement for any affected well shall be performed within ninety (90) days of the routine sampling event inspection which identified the problem well.

D. Data Evaluation Procedures

Data evaluation in accordance with this Section shall be performed for all wells within sixty (60) days of collection of the last sample for the duration of the Corrective Action Monitoring and Compliance Monitoring [Reserved] programs. When evaluating the monitoring results of each well pursuant to Section VI for the constituents of Tables III or IV for corrective action monitoring, or Tables IIIA or IVA for compliance monitoring [Reserved], the Permittee shall either:

1. For corrective action monitoring: Directly compare the value of each constituent to the respective concentration limit of Table III or Table IV and determine if it is less than, equal to, or greater than the concentration limit. If the values for all the constituents are less than or equal to the respective concentration limits, then the well shall be considered compliant with the Ground-Water Protection Standard (GWPS) for the sampling event. If one or more constituent value is greater than the respective concentration limit, then the well shall be considered non-compliant with the GWPS for the sampling event; or,

   For compliance monitoring: [Reserved]

2. Compare the value of each constituent to its respective concentration limit of Table III or IV for corrective action monitoring, or Table IIIA or IVA for compliance monitoring [Reserved], using one of the following procedures:

   a. The Confidence Interval Procedure for the mean concentration based on a normal, log-normal, or non-parametric distribution. The 95 percent confidence coefficient of the t-distribution will be used in constructing the confidence interval (Seetion 6.2.1 of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Interim Final Guidance, U.S. EPA, April 1989) and the Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance (July 1992). The confidence interval upper limit for each constituent shall be compared with the corresponding concentration limit in Table III or IV for corrective action monitoring, or Table IIIA or IVA for compliance monitoring [Reserved]. To be considered in compliance, the confidence interval upper limit for a well in question must not exceed the tabled concentration limit. A confidence interval upper limit above the tabled concentration limit shall be considered as evidence of statistically significant contamination; or,

[VI.D.2.]

b. An alternative statistical method proposed by the Permittee and approved by the TCEQ. Any proposed alternative method must be appropriate with respect to distributional assumptions and must provide reasonable control of both false positive and false negative error rates.

3. Within thirty (30) days of an initial data evaluation that determines concentration limits have been exceeded in a well pursuant to Sections VI.D.1 or VI.D.2, the Permittee may resample and repeat the analysis to verify concentration limits have been exceeded. If the second analysis indicates that the sample does not exceed the concentration limits, then the well shall be considered compliant with the concentration limits for the sampling event.

VII. RESPONSE AND REPORTING

A. Corrective Action Monitoring for units specified in Table I, Parts A and C.

1. If the Permittee or the executive director determines that the Corrective Action Program required by this Compliance Plan no longer satisfies the requirements of 30 TAC §335.166 or §335.167, the Permittee must, within ninety (90) days of either the Permittee's determination or executive director's notification, submit an application for a Compliance Plan modification or amendment to make any appropriate changes to the Corrective Action Program which will satisfy the regulations.

2. If the executive director determines that the lateral or vertical extent of ground-water contamination is not delineated, the Permittee must, within ninety (90) days of the date of the executive director's notification unless otherwise directed, initiate an investigation to determine the extent of the contamination based on the Practical Quantitation Limits (PQLs) of 40 CFR Part 264 Appendix IX or other applicable standard as required or approved by the executive director.

3. This section applies only if Points of Exposure are defined in Table V and a GWPS is assigned at the Points of Exposure. If the Ground-Water Protection Standard (GWPS) is exceeded at the Point of Exposure during two (2) consecutive sampling events, then within ninety (90) days of completing the data evaluation of the second sampling event, the Permittee must:

a. Install ground-water recovery wells or alternate Corrective Action System design to mitigate the downgradient migration of the contaminant plume; and/or,

b. Reevaluate the criteria originally used to establish the GWPS in accordance with Section IV.D and submit an application to modify or amend the Compliance Plan to address the GWPS exceedance.

[VII.]

B. Compliance Monitoring for units specified in Table I, Part B.

1. through 3. [Reserved]

C. Reporting Requirements for Corrective Action and Compliance Monitoring [Reserved].

1. Water table maps shall be prepared from the ground-water data collected pursuant to Section VI and shall be evaluated by the Permittee with regard to the following parameters:

   a. Development and maintenance of a cone of depression during operation of the system;

   b. Direction and gradient of ground-water flow;

   c. Effectiveness of hydrodynamic control of the contaminated zone during operation; and,

   d. Estimation of the rate and direction of ground-water contamination migration.

2. For Corrective Action Programs: The Permittee shall submit a report to each recipient listed in Section XII.C by January 21 and July 21 of each year and shall include the following information determined since the previously submitted report, if those items are applicable.

   For Compliance Monitoring Programs: [Reserved]

   a. The Corrective Action System(s) authorized under Section II.C in operation during the reporting period and a narrative summary of the evaluations made in accordance with Sections V, VI, and VII of this Compliance Plan for the preceding reporting period. The reporting periods shall be January 1 through June 30 and July 1 through December 31 for Corrective Action Monitoring. The period for Compliance Monitoring [Reserved] shall be based on the calendar year;

   b. The method(s) utilized for management of recovered/purged ground water shall be identified in accordance with Section III.B;

   c. An updated table and map of all monitoring and corrective action system wells. The wells to be sampled shall be those wells proposed in the Compliance Plan Application referenced in Section I.F and any changes subsequently approved by the executive director pursuant to Section II.C. Provide in chronological order, a list of those wells which have been added

[VII.C.2.]

to, or deleted from, the ground-water monitoring and remediation systems since original issuance of the Compliance Plan. Include the date of TCEQ approval for each entry;

d. The results of the chemical analyses, submitted in a tabulated format acceptable to the executive director which clearly indicates each parameter that exceeds the GWPS. Copies of the original laboratory report for chemical analyses showing detection limits and quality control and quality assurance data shall be provided if requested by the executive director;

e. Tabulation of all water level elevations required in Section VI.C.4.a, depth to water measurements, and total depth of well measurements collected since the data that was submitted in the previous monitoring report;

f. Potentiometric surface maps showing the elevation of the water table at the time of sampling, delineation of the radius of influence of the Corrective Action System, and the direction of ground-water flow gradients outside any radius of influence;

g. A notation of the presence or absence of NAPLs, both light and dense phases, in each well during each sampling event since the last event covered in the previous monitoring report and tabulation of depth and thickness of NAPLs, if detected;

h. Quarterly tabulations of quantities of recovered ground-water and NAPLs, and graphs of monthly recorded flow rates versus time for the Recovery Wells during each reporting period. A narrative summary describing and evaluating the NAPL recovery program shall also be submitted;

i. Tabulation of the total contaminant mass recovered from each recovery system for each reporting period;

j. Tabulation of all data evaluation results pursuant to Section VI.D and status of each well with regard to compliance with the Corrective Action objectives and compliance with the GWPS;

k. Maps of the contaminated area depicting concentrations of Table IV (or IVA [Reserved]) constituents and any newly detected Table III constituents as isopleth contours or discrete concentrations if isopleth contours cannot be inferred.

Areas where concentrations of constituents exceed the GWPS should be clearly delineated;

l. Maps indicating the extent and thickness of the LNAPLs and DNAPLs, if detected;

[VII.C.2.]

m. An updated schedule summary as required by Section X;

n. Summary of any changes made to the monitoring/corrective action program and a summary of well inspections, repairs, and any operational difficulties;

o. A table of all modifications and amendments made to this Compliance Plan with their corresponding approval dates by the executive director or the Commission and a brief description of each action;

p. Corrective Measures Implementation (CMI) Report to be submitted in accordance with Section VIII.F, if necessary;

q. Tabulation of well casing elevations in accordance with Attachment B No. 16;

r. Recommendation for any changes;

s. Certification and well installation diagram for any new well installation or replacement and certification for any well plugging and abandonment;

t. A summary of any activity within an area subject to institutional control; and,

u. Any other items requested by the executive director.

D. The Permittee shall enter all monitoring, testing, analytical, and inspection data obtained or prepared pursuant to the requirements of this Compliance Plan, including graphs and drawings, in the operating record at the facility. The operating record at the facility shall be made available for review by the staff of the TCEQ upon request.

VIII. CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

A. Corrective Action Obligations

The Permittee shall conduct corrective action as necessary to protect human health and the environment for all releases of hazardous waste, hazardous constituents and other constituents of concern from any Solid Waste Management Unit (SWMU) and/or AOC according to 30 TAC 335.167. The Permittee shall fulfill this obligation by conducting an Affected Property Assessment (APA), determination of protective concentration levels, selection of a remedy standard (if necessary), development and implementation of a response action (if necessary) according to 30 TAC 350, and submittal of required reports. The APA should determine whether hazardous waste or hazardous constituents listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264, Appendix IX and/or other constituents of concern have been released into the environment. If it is determined that hazardous waste, hazardous constituents or other constituents of concern have been or are being released into the environment, then the Permittee may be required to conduct ISM and additional corrective actions listed above.

[VIII.A.]

Upon executive director's review of Corrective Action obligations, the Permittee may be required to perform any or all of the following:

1. Conduct investigation(s);

2. Provide additional information;

3. Investigate additional SWMU(s) and/or AOC(s); and/or,

4. Submit an application for a modification/amendment to a Compliance Plan to implement corrective measures.

Any additional requirements must be completed within the time frame(s) specified by the executive director.

B. The Permittee shall conduct an APA for the SWMUs and/or AOCs listed in Table II in accordance with Section I.D, and for the new SWMUs and/or AOCs discovered after the issuance of this Compliance Plan in accordance with Section I.E.

C. Variance From Investigation

The Permittee may elect to certify that no hazardous waste or hazardous constituents listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264, Appendix IX or other constituents of concern are or never have been present/managed in a SWMU and/or AOC referenced in Section VIII.B in lieu of performing the investigation required in Sections VIII.A and VIII.D, provided that confirming data is submitted for the current and past waste(s) managed in the respective unit. The Permittee shall submit such information and certification(s) on a unit-by-unit basis in the time frame required in Section VIII.D for review and approval by the executive director of the TCEQ. If the Permittee cannot demonstrate and certify that hazardous waste, hazardous constituents or other constituents of concern are not or were not present in a particular unit, the investigation required in Sections VIII.A and VIII.D shall be performed for the unit.

D. Affected Property Assessment

Within sixty (60) days from the date of issuance of this Compliance Plan and/or within sixty (60) days of approval of the Assessment Report which recommends further investigation of a SWMU and/or AOC in accordance with Section I.E, the Permittee shall submit a schedule for completion of the RFI(s), or Affected Property Assessment (APA) for the SWMUs and/or AOCs referenced in Section VIII.B to the executive director for review and approval. The Permittee shall initiate the investigations in accordance with the approved schedule and shall address all of the items for RFI Workplan and RFI Report contained in the U.S. EPA publication EPA/520-R-94-004, OSWER Directive 9902.3-2A, RCRA Corrective Action Plan (Final), May 1994 or in accordance with 30 TAC Chapter 350 requirements and guidance acceptable to the executive director. The results of the APA must be submitted to the executive director for approval in the form of an APA Report within the time frame

[VIII.D.]

established in the approved schedule. The APA Report must appropriately document results of the investigation(s). The APA Report shall be considered complete when the full nature and extent of the contamination, the Quality Assurance/Quality Control procedures and the Data Quality Objectives are documented to the satisfaction of the executive director. The Permittee shall propose or conduct Stabilization/Interim Corrective Measures, as necessary, to protect human health and the environment.

E. Baseline Risk Assessment (BLRA)/Corrective Measures Study (CMS)

Upon approval of APA Report, if it is determined that there has been a release of hazardous waste or hazardous constituents (listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264 Appendix IX) or other constituents of concern into the environment, which poses a potential risk to human health and the environment, then the Permittee shall propose a remedy in accordance with the TCEQ Texas Risk Reduction Program (TRRP) rules or as otherwise authorized by the executive director. For projects conducted under TRRP, the risk assessment process shall be addressed in the APAR and the evaluation of corrective measures shall be conducted as part of the remedy standard selection process.

F. Corrective Measures Implementation (CMI)

If on the basis of the APA Report, it is determined that there is a risk to the human health and environment, then the Permittee shall submit for approval a Response Action Plan (RAP) within one-hundred-eighty (180) days of receipt of approval of the APA Report unless otherwise extended by the executive director. The RAP shall contain detailed final proposed engineering design, monitoring plans and time frames necessary to implement the selected remedy and assurances of financial responsibility for completing the corrective action. Following review and approval of the RAP, and upon installation of the approved corrective action system, the Permittee shall submit a Response Action Effectiveness Report/Response Action Completion Report (RAER/RACR) which includes as-built drawings of the corrective action system. The RAER/RACR shall address all the applicable items in Title 30 TAC Chapter 350.

If the RAP proposes a final remedy, then the RAP shall be included in an application to modify/amend the Compliance Plan within the timeframes specified by the executive director. All the requirements of the previous paragraph apply to the corrective measures implemented through the Compliance Plan. Implementation of the corrective measure(s) shall be addressed through issuance of a modified/amended Compliance Plan.

To report the progress of the corrective measures, the Permittee shall submit periodic RAERs to the TCEQ in accordance with the schedule specified in the Compliance Plan, or as otherwise directed.

IX. INTERIM STABILIZATION MEASURES (ISMs) PROGRAM

A. Applicability

The Interim Stabilization Measures (ISM) Program applies to waste management units or areas of concern (AOCs) under investigation for which a final Corrective Action Program has not been authorized by the Compliance Plan. ISM also applies to units/AOCs that are discovered after issuance of this Compliance Plan.

B. ISMs Program Objectives

The objectives of the ISM Program are to remove, decontaminate, and/or stabilize the source (i.e., waste and waste residues) and contaminated media to protect human health and the environment. The Permittee shall modify the ISM Program, as necessary, to achieve these objectives.

C. ISMs Program Authorized

The Permittee is authorized to design, construct, operate and maintain a ISM Program for waste management units/AOCs for which interim measures are necessary to protect human health and the environment. The ISM Program shall be operated until final corrective measures established in accordance with Section VIII.F are authorized in the Compliance Plan. At a minimum, the ISM Program shall consist of the following:

1. Specific performance goals to protect human health and the environment;

2. A monitoring system to evaluate the ISM and determine if the objectives outlined in Section IX.B are being met. All ISM wells must comply with the requirements of Section III.E and Attachment B of this Compliance Plan;

3. An implementation schedule to initiate ISMs;

4. Submittal of a report specifying the design of the ISM upon installation. During implementation of the ISM, periodic ISM Status Reports shall be submitted which documents that the objectives of Section IX.B are being achieved. Two copies of the periodic ISM Status Report shall be submitted to the executive director for review; and,

5. A procedure to modify the design, as necessary, to achieve the objectives outlined in Section IX.B of this Compliance Plan.

X. COMPLIANCE SCHEDULE

A. Within sixty (60) days of issuance of this Compliance Plan, the Permittee shall submit to the executive director a schedule summarizing all activities required by the Compliance Plan. The schedule shall list the starting dates of all routine activities. The Permittee shall include an updated schedule in the semiannual report. The schedule shall list the activity or report,

[X.A.]

the Compliance Plan Section which requires the activity or report and the calendar date the activity or report is to be completed or submitted (if this date can be determined).

B. Within ninety days of issuance of this Compliance Plan, the Permittee shall submit to the executive director a report summarizing the results of an additional investigation to determine whether hazardous constituents concentrations in the aquifers (dibenzofuran and naphthalene in the A-Transmissive Zone, and dibenzofuran, 2-methylnaphthalene, and naphthalene in the B-Transmissive Zone) downgradient of the POC wells for the Closed Surface Impoundment exceed their respective GWPSs in Table III.

XI. FINANCIAL ASSURANCE

The Permittee shall provide financial assurance for operation of the Ground-Water Monitoring and Corrective Action Programs, as applicable, in accordance with this Compliance Plan in a form acceptable to the executive director in an initial amount not less than $231,000 within sixty (60) days of issuance of this Compliance Plan. The financial assurance shall be secured, maintained, and adjusted in compliance with TCEQ regulations on hazardous waste financial requirements (30 TAC Chapter 37 Subchapter P).

XII. GENERAL PROVISIONS

A. Deed Recordation Requirements

For waste and contaminated media approved to remain in place above background or health-based concentration levels after completion of the corrective action and/or ground-water monitoring programs, the Permittee shall record an instrument in the county deed records for the facility to specifically identify the areas of contamination exceeding background or health-based values. The deed certification shall follow the requirements of 30 TAC §335.560 and §335.569 or 30 TAC §350.111, where applicable.

B. Notification Requirements

The Permittee shall notify the local TCEQ region office at least ten (10) days prior to any well installation or sampling activity required by the Compliance Plan in order to afford Region personnel the opportunity to observe these events and collect samples. This notification requirement will not apply to the routine semiannual or annual ground-water sampling events specified in this Compliance Plan.

C. Distribution of Copies

The Permittee shall submit all schedules, plans, and reports required by this Compliance Plan according to the following distribution list:

1. An original and one copy to the Corrective Action Section, Mail Code MC-127, Remediation Division, Texas Commission on Environmental Quality in Austin, Texas; and,

[XII.C.]

2. One copy to the Waste Program, Texas Commission on Environmental Quality Region 12 Office in Houston, Texas.

D. Compliance Plan Modification or Amendment

Any application to modify or amend the Compliance Plan shall be accomplished in accordance with the provisions of 30 TAC 305 Subchapter D and submitted in accordance with the Compliance Plan Application's general instructions.

E. Any changes to the Corrective Action or Ground-Water Monitoring Systems are subject to executive director's approval.

XIII. FORCE MAJEURE

The Permittee's non-compliance with one or more of the provisions of this Compliance Plan may be justified only to the extent and for the duration that non-compliance is caused by a "Force Majeure" event. For purposes of this Compliance Plan, "Force Majeure" is defined as an event that is caused by an Act of God, labor strike, or work stoppage, or other circumstance beyond the Permittee's control that could not have been prevented by due diligence, and that makes substantial compliance with the applicable provision or provisions of this Compliance Plan impossible.

The occurrence of a "Force Majeure" event that justifies the missing of one deadline shall not automatically justify the missing of later deadlines unless there is a cumulative effect due to such an event. The Permittee shall keep a record of any delaying events.

If the Permittee anticipates or experiences an inability to comply with any of the provisions of this Compliance Plan due to a "Force Majeure" event, the Permittee shall notify the executive director (TCEQ) immediately (within 24 hrs). A written notice must be submitted to the TCEQ within ten (10) days, which describes the nature, cause, and anticipated length of the delay and all steps which the Permittee has taken and will take, with a schedule for their implementation, to avoid or minimize the delay. In the event that performance of any of the activities required by this Compliance Plan is affected by a "Force Majeure" event, then the Permittee shall propose a plan for the executive director's (TCEQ) approval, for achieving the objectives of the Compliance Plan by alternative means in the most timely manner.

TABLE I
Waste Management Units Subject to Ground-water
Corrective Action and Compliance Monitoring

The Compliance Plan is specific to the following waste management units or areas for which the ground-water Corrective Action and Compliance Monitoring Programs apply, pursuant to 30 TAC §335.166 and 30 TAC §335.165, respectively, for releases from RCRA-regulated units. The Compliance Plan is also specific to waste management units listed below for which the Corrective Action Program applies pursuant to 30 TAC §335.167 for releases from the solid waste management units.

A. RCRA-REGULATED UNITS SUBJECT TO THE CORRECTIVE ACTION PROGRAM (See also Attachment A, Sheet 1):

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU 01)

B. RCRA-REGULATED UNITS SUBJECT TO THE COMPLIANCE MONITORING PROGRAM:

1. None

C. SOLID WASTE MANAGEMENT UNITS SUBJECT TO THE CORRECTIVE ACTION PROGRAM:

1. None

TABLE II
Solid Waste Management Units and Areas of Concern
Addressed in Section VIII

The Compliance Plan is specific to the following units for which the Corrective Action Program applies pursuant to 30 TAC §335.167 for releases from solid waste management units (SWMUs) and Areas of Concern (AOCs). The SWMUs and AOCs are depicted in Attachment A, Sheets 1 and 2:

SWMU No.	AOC No.	Description
2		Northern and Southern Drainage Ditches
4		Recent Process Area
5		Original Process Area
6		Water Treatment and Boiler System
7/NOR 002		Tank Car Storage Area/Tank Car
8		Aboveground Storage Tank Area
9		Location of Former Underground Storage Tank No. 44-023-05
10		Location of Former SAP Water Treatment Tank
11		Oil/Water Separators
12		Railroad Tie Storage Area
NOR 003		Subsurface Tank
NOR 004		Container Storage Area
NOR 005		Waste Pile
NOR 006		Misc. Storage Container
	1	Diesel Storage Tank
	3	Contaminated Portion of City Water Line
	4	Location of Former Incinerator
	5	City Storm Sewer
	6	Inactive Wastewater Lagoon
	7	Location of Former Underground Storage Tank No. 44-023-21

NOR Notice of Registration

TABLE III - CORRECTIVE ACTION PROGRAM
Table of Detected Hazardous and Solid Waste Constituents and
Concentration Limits for the Ground-Water Protection Standard

Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)

A-Transmissive Zone		B-Transmissive Zone	
COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)	COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)
Acenaphthene	1.5[PCL]	Acenaphthene	1.5[PCL]
Acenaphthylene	1.5[PCL]	Acenaphthylene	1.5[PCL]
Anthracene	7.3[PCL]	Anthracene	7.3[PCL]
Dibenzofuran	0.098[PCL]	Dibenzofuran	0.098[PCL]
Bis(2-ethylhexyl)phthalate	0.006[PCL]	Bis(2-ethylhexyl)phthalate	0.006[PCL]
Fluoranthene	0.98[PCL]	Fluoranthene	0.98[PCL]
Fluorene	0.98[PCL]	Fluorene	0.98[PCL]
2-Methylnaphthalene	0.098[PCL]	Di-n-butyl phthalate	2.4[PCL]
Naphthalene	0.49[PCL]	Naphthalene	0.49[PCL]
Phenanthrene	0.73[PCL]	Phenol	7.3[PCL]
Pyrene	0.73[PCL]	Pyrene	0.73[PCL]

PCL Alternate Concentration Limit pursuant to 30 TAC §335.160(b) based upon the Protective Concentration Level determined under 30 TAC Chapter 350 for Residential Land Use. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

TABLE IV - CORRECTIVE ACTION PROGRAM
Table of Indicator Parameters and Concentration Limits for
the Ground-Water Protection Standard

Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)

A-Transmissive Zone		B-Transmissive Zone	
COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)	COLUMN A Hazardous Constituents	COLUMN B Concentration Limits (mg/l)
Acenaphthene	1.5[PCL]	Acenaphthene	1.5[PCL]
Acenaphthylene	1.5[PCL]	Acenaphthylene	1.5[PCL]
Anthracene	7.3[PCL]	Anthracene	7.3[PCL]
Dibenzofuran	0.098[PCL]	Dibenzofuran	0.098[PCL]
Bis(2-ethylhexyl)phthalate	0.006[PCL]	Bis(2-ethylhexyl)phthalate	0.006[PCL]
Fluoranthene	0.98[PCL]	Fluoranthene	0.98[PCL]
Fluorene	0.98[PCL]	Fluorene	0.98[PCL]
2-Methylnaphthalene	0.098[PCL]	Di-n-butyl phthalate	2.4[PCL]
Naphthalene	0.49[PCL]	Naphthalene	0.49[PCL]
Phenanthrene	0.73[PCL]	Phenol	7.3[PCL]
Pyrene	0.73[PCL]	Pyrene	0.73[PCL]

PCL Alternate Concentration Limit pursuant to 30 TAC §335.160(b) based upon the Protective Concentration Level determined under Remedy Standard A or B of 30 TAC Chapter 350. The PCL value, Column B, will change as updates to the rule are promulgated. Changes to the rule automatically change the concentration value established in Column B in this table.

TABLE V
Designation of Wells by Function

POINT OF COMPLIANCE WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
A-Transmissive Zone: MW-01A, MW-02, MW-07, MW-10A, and MW-11A
B-Transmissive Zone: MW-10B, MW-11B, and P-10

5A
3B

POINT OF EXPOSURE WELLS

1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
None

BACKGROUND WELLS

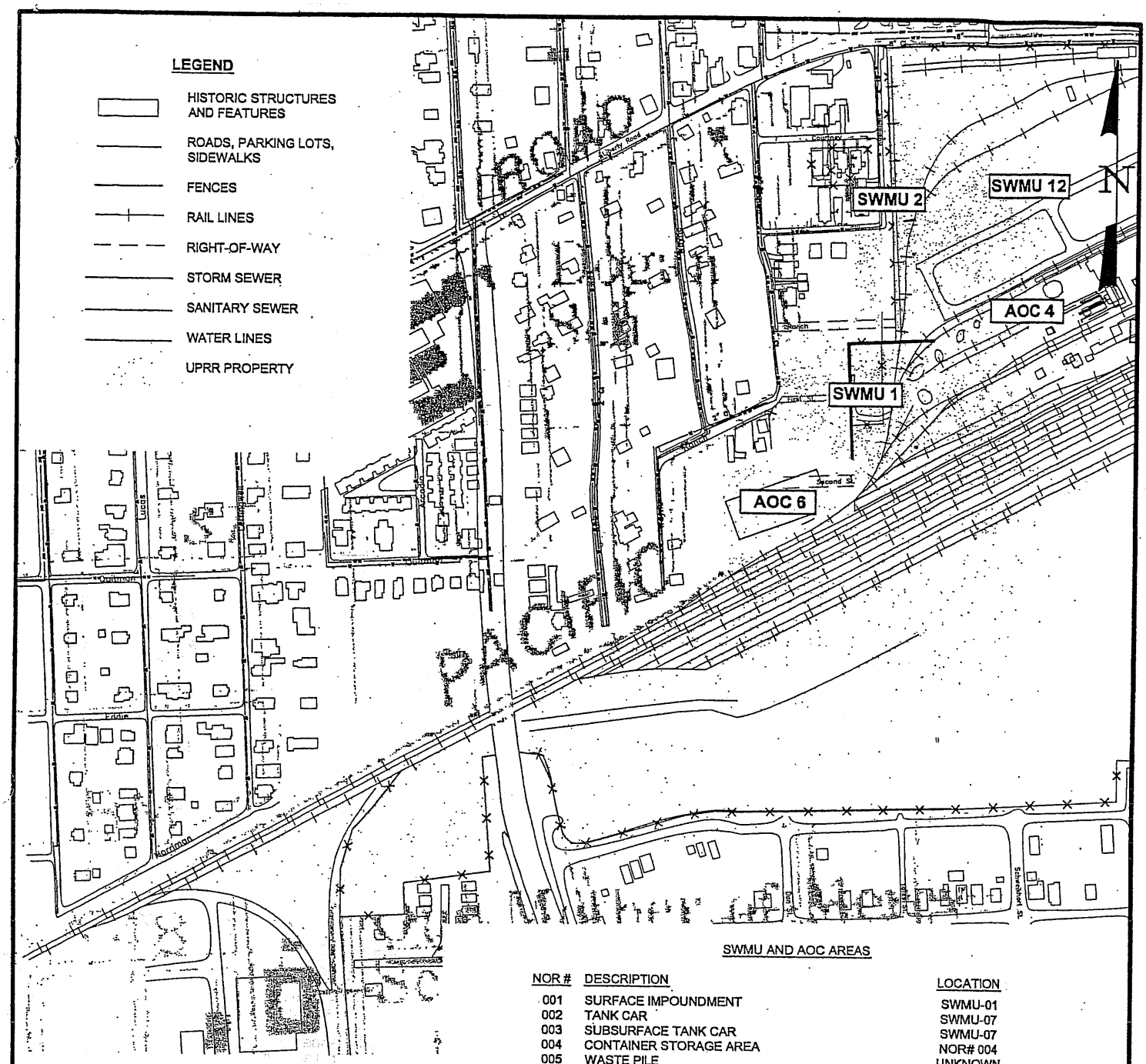
1. Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)
A-Transmissive Zone: MW-8
B-Transmissive Zone: P-12

1A
1B

Note: Wells and piezometers identified on Attachment A maps that are not listed in this table are subject to change, upon approval by the executive director, without modification to the Compliance Plan. The wells and piezometers for the Closed Surface Impoundment are depicted on Attachment A, Sheets 3 and 4.

TABLE VI
Compliance Period

Closed Surface Impoundment (NOR Unit No. 001, SWMU No. 01)	
Year Waste Management Activities Initiated	1979
Year Closed	1984
Compliance Period	5 Years
Compliance Period Began	1994



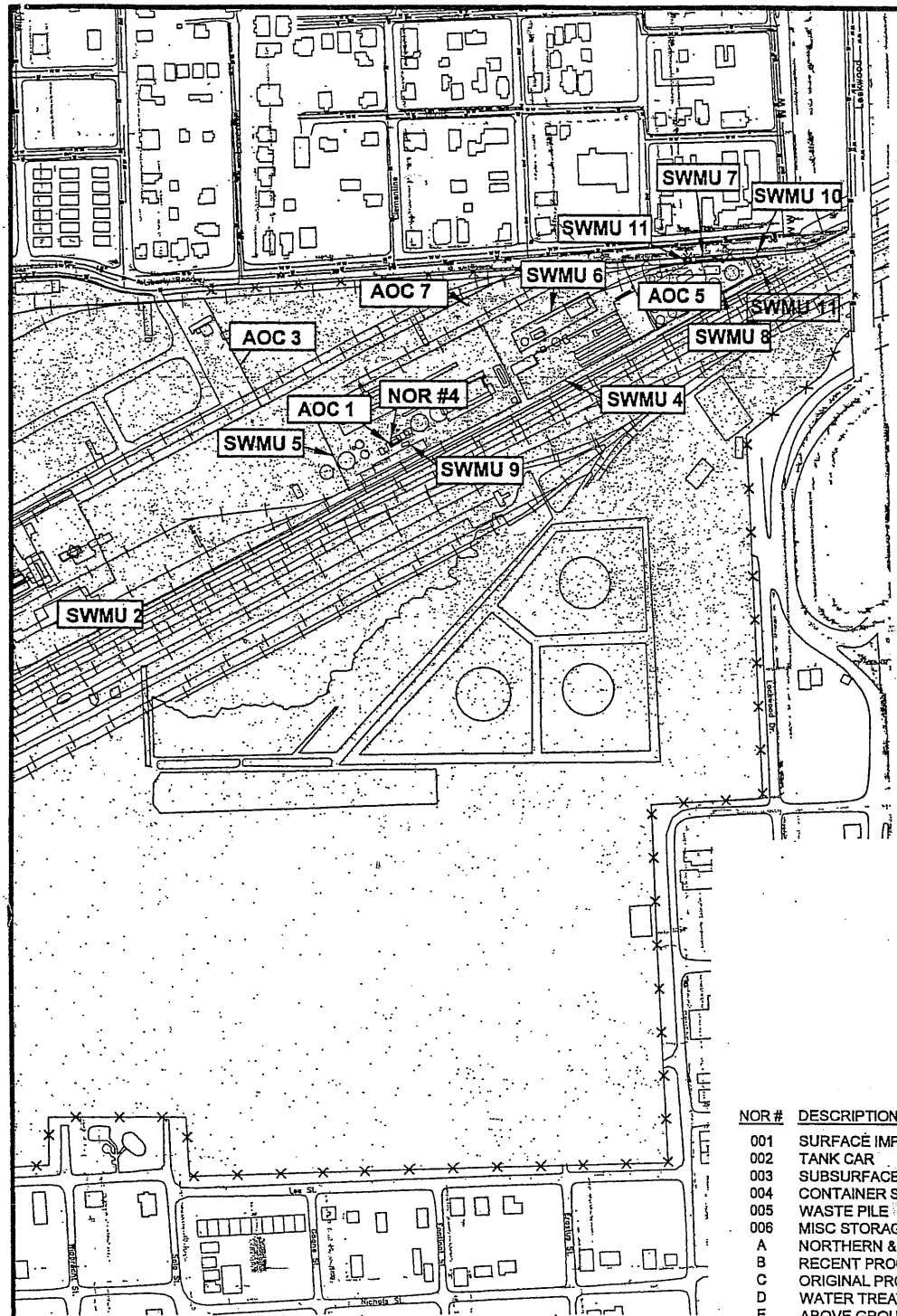
SWMU AND AOC AREAS

NOR #	DESCRIPTION	LOCATION
001	SURFACE IMPOUNDMENT	SWMU-01
002	TANK CAR	SWMU-07
003	SUBSURFACE TANK CAR	SWMU-07
004	CONTAINER STORAGE AREA	NOR# 004
005	WASTE PILE	UNKNOWN
006	MISC.STORAGE CONTAINER	SWMU-12
A	NORTHERN & SOUTHERN DRAINAGE DITCHES	SWMU-02
B	RECENT PROCESS AREA	SWMU-04
C	ORIGINAL PROCESS AREA	SWMU-05
D	WATER TREATMENT AND BOILER SYSTEM	SWMU-06
E	ABOVE GROUND STORAGE TANK AREA	SWMU-08
F	LOCATION OF FORMER UST NO. 44-023-05	SWMU-09
G	LOCATION OF FORMER SAP WATER TREATMENT TANK	SWMU-10
H	OIL WATER SEPARATOR	SWMU-11
I	RAILROAD TIE STORAGE AREA	SWMU-12
J	DIESEL STORAGE TANK	AOC 1
K	CONTAMINATED PORTION OF CITY WATERLINE	AOC 3
L	LOCATION OF FORMER INCINERATOR	AOC 4
M	CITY STORM SEWER	AOC 5
N	INACTIVE WASTEWATER LAGOON	AOC 6
O	LOCATION OF FORMER UST NO. AA-023-21	AOC-7

NOTE:
1. A REVIEW OF HISTORICAL DOCUMENTS INCLUDING THE RFA AND RFI WORK PLAN DID NOT INDICATE THAT SWMU-03 and AOC-2 EXISTED

0 400 800
SCALE FEET

ATTACHMENT A, SHEET 1 OF 4
SWMU AND AOC LOCATIONS
COMPLIANCE PLAN NO. CP-50343
UNION PACIFIC RAILROAD COMPANY



N

LEGEND

- HISTORIC STRUCTURES AND FEATURES
- ROADS, PARKING LOTS, SIDEWALKS
- FENCES
- RAIL LINES
- RIGHT-OF-WAY
- STORM SEWER
- SANITARY SEWER
- WATER LINES
- UPRR PROPERTY

SWMU AND AOC AREAS

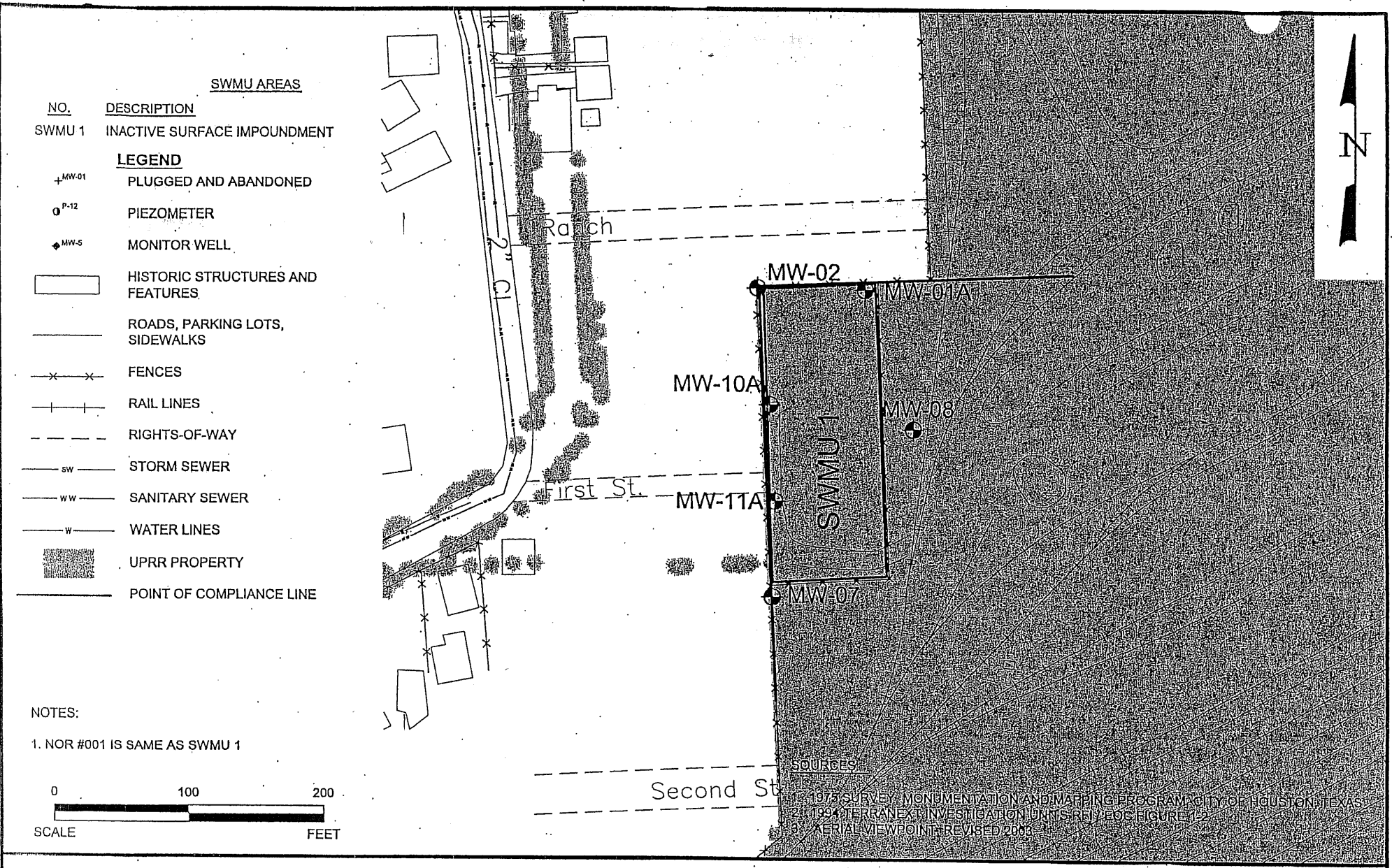
NOR #	DESCRIPTION	LOCATION
001	SURFACE IMPOUNDMENT	SWMU-01
002	TANK CAR	SWMU-07
003	SUBSURFACE TANK CAR	SWMU-07
004	CONTAINER STORAGE AREA	NOR# 004
005	WASTE PILE	UNKNOWN
006	MISC STORAGE CONTAINER	SWMU-12
A	NORTHERN & SOUTHERN DRAINAGE DITCHES	SWMU-02
B	RECENT PROCESS AREA	SWMU-04
C	ORIGINAL PROCESS AREA	SWMU-05
D	WATER TREATMENT AND BOILER SYSTEM	SWMU-06
E	ABOVE GROUND STORAGE TANK AREA	SWMU-08
F	LOCATION OF FORMER UST NO. 44-023-05	SWMU-09
G	LOCATION OF FORMER SAP WATER TREATMENT TANK	SWMU-10
H	OIL WATER SEPARATOR	SWMU-11
I	RAILROAD TIE STORAGE AREA	SWMU-12
J	DIESEL STORAGE TANK	AOC 1
K	CONTAMINATED PORTION OF CITY WATERLINE	AOC 3
L	LOCATION OF FORMER INCINERATOR	AOC 4
M	CITY STORM SEWER	AOC 5
N	INACTIVE WASTEWATER LAGOON	AOC 6
O	LOCATION OF FORMER UST NO. AA-023-21	AOC-7

NOTE:
1. A REVIEW OF HISTORICAL DOCUMENTS INCLUDING THE RFA AND RFI WORK PLAN DID NOT INDICATE THAT SWMU-03 and AOC-2 EXISTED

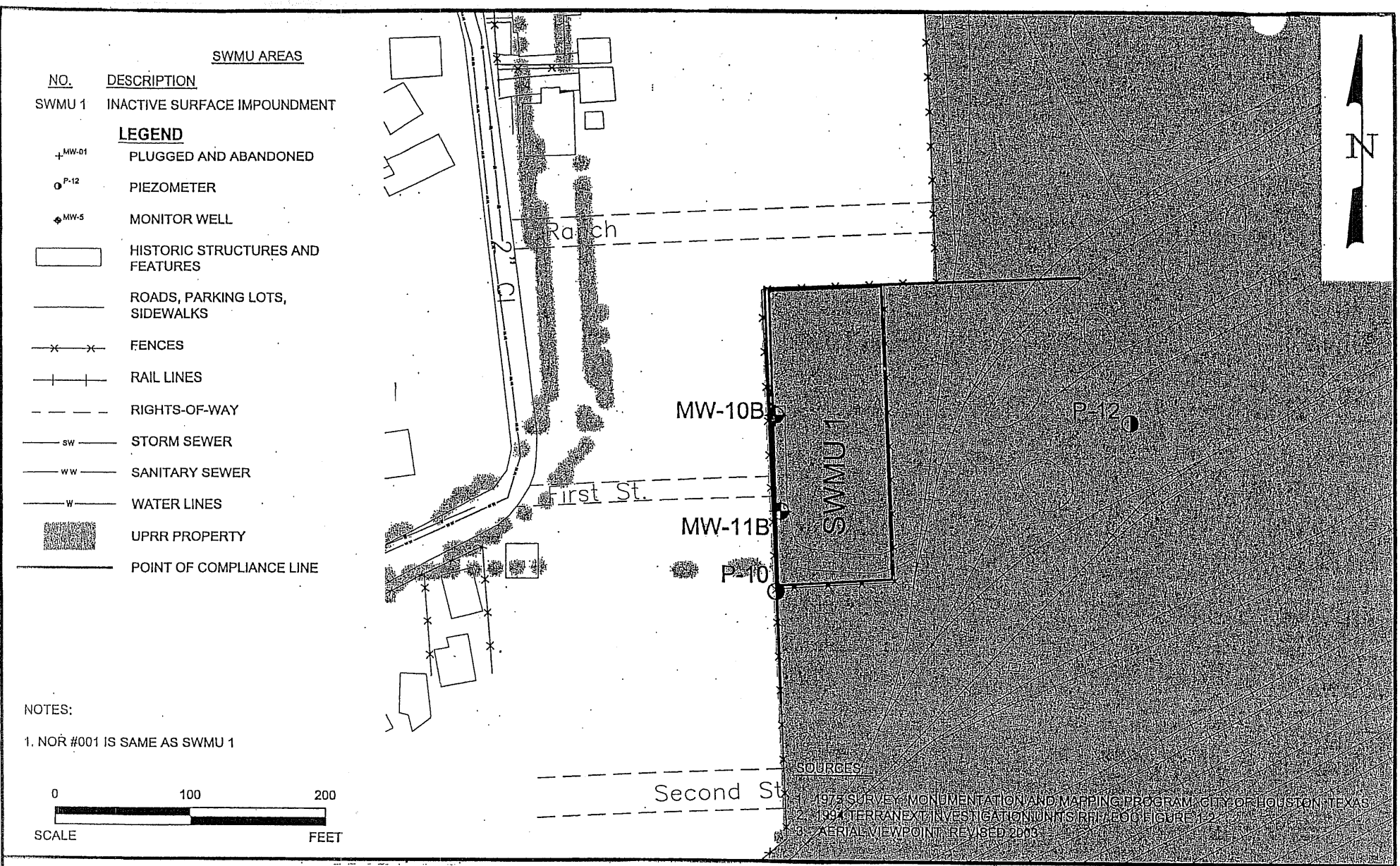
0 400 800

SCALE FEET

ATTACHMENT A, SHEET 2 OF 4
SWMU AND AOC LOCATIONS
COMPLIANCE PLAN NO. CP-50343
UNION PACIFIC RAILROAD COMPANY



ATTACHMENT A, SHEET 3 OF 4
A-TRANSMISSIVE ZONE MONITOR WELL LOCATIONS
CLOSED SURFACE IMPOUNDMENT
COMPLIANCE PLAN NO. CP-50343
UNION PACIFIC RAILROAD COMPANY



ATTACHMENT A, SHEET 4 OF 4
B-TRANSMISSIVE ZONE MONITOR WELL LOCATIONS
CLOSED SURFACE IMPOUNDMENT
COMPLIANCE PLAN NO. CP-50343
UNION PACIFIC RAILROAD COMPANY

Attachment B - Well Design and Construction Specifications

1. The Permittee shall use well drilling methods that minimize potential adverse effects on the quality of water samples withdrawn from the well, and that minimize or eliminate the introduction of foreign fluids into the borehole.

2. All wells constructed to meet the terms of this Compliance Plan shall be constructed such that the wells can be routinely sampled with a pump, bailer, or alternate sampling device. Piping associated with recovery wells should be fitted with sample ports or an acceptable alternative sampling method to facilitate sampling of the recovered ground water on a well by well basis.

3. Above the saturated zone the well casing may be two (2)-inch diameter or larger schedule 40 or 80 polyvinyl chloride (PVC) rigid pipe or stainless steel or polytetrafluoroethylene (PTFE or "teflon") or an approved alternate material. The PVC casing must bear the National Sanitation Foundation logo for potable water applications (NSF-pw). Solvent cementing compounds shall not be used to bond joints and all connections shall be flush-threaded. In and below the saturated zone, the well casing shall be stainless steel or PTFE.

   The Permittee may use PVC or fiberglass reinforced resin as an alternate well casing material in and below the saturated zone provided that it yields samples for ground-water quality analysis that are unaffected by the well casing material.

4. The Permittee shall replace any well that has deteriorated due to incompatibility of the casing material with the ground-water contaminants or due to any other factors. Replacement of the damaged well shall be completed within ninety (90) days of the date of the inspection that identified the deterioration.

5. Well casings and screens shall be steam cleaned prior to installation to remove all oils, greases, and waxes. Well casings and screens made of fluorocarbon resins shall be cleaned by detergent washing.

6. For wells constructed after the date of issuance of this Compliance Plan, the screen length shall not exceed ten (10) feet within a given transmissive zone unless otherwise approved by the executive director. Screen lengths exceeding ten (10) feet may be installed in ground-water recovery or injection wells to optimize the ground-water remediation process in accordance with standard engineering

7. The Permittee shall design and construct the intake portion of a well so as to allow sufficient water flow into the well for sampling purposes and minimize the passage of formation materials into the well during pumping. The intake portion of a well shall consist of commercially manufactured stainless steel or PTFE screen or approved alternate material.

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The annular space between the screen and the borehole shall be filled with clean siliceous granular material (i.e., filter pack) that has a proper size gradation to provide mechanical retention of the formation sand and silt. The well screen slot size shall be compatible with the filter pack size as determined by sieve analysis data. The filter pack should extend no more than three (3) feet above the well screen. A silt trap, no greater than one (1) foot in length, may be added to the bottom of the well screen to collect any silt that may enter the well. The bottom of the well casing shall be capped with PTFE or stainless steel or approved alternate material.

Ground-water recovery and injection wells shall be designed in accordance with standard engineering practice to ensure adequate well production and accommodate ancillary equipment. Silt traps exceeding one (1) foot may be utilized to accommodate ancillary equipment. Well heads shall be fitted with mechanical wellseals, or equivalent, to prevent entry of surface water or debris.

8. A minimum of two (2) feet of pellet or granular bentonite shall immediately overlie the filter pack in the annular space between the well casing and borehole. Where the saturated zone extends above the filter pack, pellet or granular bentonite shall be used to seal the annulus. The bentonite shall be allowed to settle and hydrate for a sufficient amount of time prior to placement of grout in the annular space. Above the minimum two (2)-foot thick bentonite seal, the annular space shall be sealed with a cement/bentonite grout mixture. The grout shall be placed in the annular space by means of a tremie pipe or pressure grouting methods equivalent to tremie grouting standards.

   The cement/bentonite grout mixture or TCEQ approved alternative grout mixture shall fill the annular space to within two (2) feet of the surface. A suitable amount of time shall be allowed for settling to occur. The annular space shall be sealed with concrete, blending into a cement apron at the surface that extends at least two (2) feet from the outer edge of the monitor well for above-ground completions. Alternative annular-space seal material may be proposed with justification and must be approved by the executive director prior to installation.

   In cases where flush-to-ground completions are unavoidable, a protective structure such as a utility vault or meter box should be installed around the well casing and the concrete pad design should prevent infiltration of water into the vault. In addition, the Permittee must ensure that 1) the well/cap juncture is watertight; 2) the bond between the cement surface seal and the protective structure is watertight; and 3) the protective structure with a steel lid or manhole cover has a rubber seal or gasket.

9. Water added as a drilling fluid to a well shall contain no bacteriological or chemical constituents that could interfere with the formation or with the chemical constituents being

Attachment B (Cont'd)

monitored. For ground-water recovery and injection wells, drilling fluids containing freshwater and treatment agents may be utilized in accordance with standard engineering practice to facilitate proper well installation. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.

10. Upon completion of installation of a well, the well must be developed to remove any fluids used during well drilling and to remove fines from the formation to provide a particulate-free discharge to the extent achievable by accepted completion methods and by commercially available well screens. Development shall be accomplished by reversing flow direction, surging the well or by air lift procedures. No fluids other than formation water shall be added during development of a well unless the aquifer to be screened is a low-yielding water-bearing aquifer. In these cases, the water to be added should be chemically analyzed to evaluate its potential impact on in-situ water quality, and to assess the potential for formation damage.

    For recovery and injection wells, well development methods may be utilized in accordance with standard engineering practice to remove fines and maximize well efficiency and specific capacity. Addition of freshwater and treatment agents may be utilized during well development or re-development to remove drilling fluids, inorganic scale or bacterial slime. In these cases, the water and agents added should be chemically analyzed to evaluate their potential impact on in-situ water quality and to assess the potential for formation damage. All such additives shall be removed to the extent practicable during well development.

11. Each well shall be secured and/or designed to maintain the integrity of the well borehole and ground water.

12. The Permittee shall protect the above-ground portion of the well by bumper guards and/or metal outer casing protection when wells are located in traffic areas or outside the secured plant area.

13. Copies of drilling and construction details demonstrating compliance with the items of this provision shall be kept on site. This record shall include the following information:

    . name/number of well (well designation);
    . intended use of the well(sampling, recovery, etc.);
    . date/time of construction;
    . drilling method and drilling fluid used;
    . well location (± 0.5 ft.);
    . bore hole diameter and well casing diameter;

Attachment B (Cont'd)

. well depth (± 0.1 ft.);
. drilling and lithologic logs;
. depth to first saturated zone;
. casing materials;
. screen materials and design;
. casing and screen joint type;
. screen slot size/length;
. filter pack material/size;
. filter pack volume (how many bags, buckets, etc.);
. filter pack placement method;
. sealant materials;
. sealant volume (how many bags, buckets, etc.);
. sealant placement method;
. surface seal design/construction;
. well development procedure;
. type of protective well cap;
. ground surface elevation (± 0.01 ft. MSL);
. top of casing elevation (± 0.01 ft. MSL); and,
. detailed drawing of well (include dimensions).

14. The Permittee shall complete construction or plugging and abandonment of each well in accordance with the requirements of this Compliance Plan and 16 TAC Chapter 76 and shall certify such proper construction or plugging and abandonment in the first report submitted pursuant to Section VII.C.2 following installation or plugging and abandonment. Well completion logs for each newly installed or replaced well shall be included with the report. The certification shall be prepared by a qualified geologist or geotechnical engineer. Each well certification shall be accompanied by a certification report, including an accurate log of the soil boring, which thoroughly describes and depicts the location, elevations, material specifications, construction details, and soil conditions encountered in the boring for the well. A copy of the certification and certification report shall be kept on-site, and a second copy shall be submitted to the executive director. Required certification shall be in the following format, edited as appropriate:

"This is to certify that installation *(or plugging and abandonment)* of the following facility components authorized or required by TCEQ Compliance Plan No. 5**** *(Insert CP number)* has been completed, and that construction *(or plugging)* of said components has been performed in accordance with and in compliance with the design and construction specifications of Compliance Plan No. 5**** *(Insert CP number)*:" *(Add description of facility components with reference to applicable Compliance Plan provisions)*.

15. The Permittee shall clearly mark and maintain the well number on each well at the site.

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16. The Permittee shall measure and keep a record of the elevation of the top of each well casing in feet above mean sea level to the nearest 0.01 foot and permanently mark the measuring point on the well.

    The Permittee shall compare old and new elevations from previously surveyed wells and determine a frequency of surveying not to exceed five (5) year intervals.

17. Wells may be replaced at any time the Permittee or executive director determines that the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of ground-water quality.

18. The Permittee shall plug soil test borings and wells removed from service after issuance of the Compliance Plan with a cement/bentonite grout mixture so as to prevent the preferential migration of fluids in the area of the borehole. Certification of each plugging shall be reported in accordance with Provision 14 of Attachment B of this Compliance Plan. The plugging of wells shall be in accordance with 16 TAC Chapter 76 dealing with Well Drilling, Completion, Capping and Plugging.

19. A well's screened interval shall be appropriately designed and installed to meet the well's specific objective (i.e., either DNAPL, LNAPL, both, or other objective of the well). All wells designed to detect, monitor, or recover DNAPL must be drilled to intercept the bottom confining layer of the aquifer. The screened interval to detect DNAPL should extend from the top of the lower confining layer to above the portion of the aquifer saturated with DNAPL. The screened interval for all wells designed to detect, monitor, or recover LNAPL must extend high enough into the vadose zone to provide for fluctuations in the seasonal water table. In addition, the sandpacks for the recovery or monitoring well's screened interval shall be coarser than surrounding media to ensure the movement of NAPL to the well.