

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 25, 2008

TO: All Persons on Mailing List

RE: **TCEQ Docket No. 2006-0348-IHW; Industrial Hazardous Waste Permit No. 83142.**
Application of **Texas Tank Car Works, Inc.**; for a Post Closure Order, in **Tom Green County, Texas**

The above-referenced matter is scheduled to be considered by the Texas Commission on Environmental Quality on **July 9, 2008 at 9:30 A.M.** in Room 201S, Building E, 12100 Park 35 Circle, Austin, Texas.

Oral presentations before the commission shall be limited to five minutes each, excluding time for answering questions, unless the chairman or general counsel establishes other limitations.

Should you need any additional information, please contact Paul Munguía at the Texas Commission on Environmental Quality, Office of the Chief Clerk, (512) 239-3300.

Sincerely,

A handwritten signature in cursive script, appearing to read "LaDonna Castañuela".

LaDonna Castañuela
Chief Clerk

LDC/pm

MAILING LIST
TEXAS TANK CAR WORKS, INC.
TCEQ DOCKET NO. 2006-0348-IHW

FOR THE APPLICANT:

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Texas Tank Car Works, Inc.
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FOR ALTERNATIVE DISPUTE
RESOLUTION:

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**IN THE MATTER OF
POST-CLOSURE CARE
AND REMEDIATION
CONCERNING
TEXAS TANK CAR WORKS, INC.
PCO No. 83142**

**BEFORE THE

TEXAS COMMISSION ON

ENVIRONMENTAL QUALITY**

**POST-CLOSURE ORDER
DOCKET NO. 2006-0348-IHW**

I. JURISDICTION

This Post-Closure Order (PCO) is issued to Texas Tank Car Works, Inc. (Applicant), owner and operator at the 28th Street Landfill (Facility) San Angelo, Tom Green County pursuant to the authority vested in the Texas Commission on Environmental Quality (the Commission or TCEQ) under TEX. HEALTH & SAFETY CODE, § 361.082(h) and TEX. WATER CODE, § 7.031(f).

II. RESPONSIBILITIES OF APPLICANT/ORDERING PROVISIONS

1. The obligations of this PCO, as set forth below for Applicant, shall apply to, and be binding upon Applicant, its officers, directors, employees, agents, trustees, receivers, successors, assigns, and all other persons, including, but not limited to, firms, corporations, subsidiaries, contractors, or consultants acting under or on behalf of Applicant in connection with the implementation of this PCO.
2. No change in ownership, corporate, or partnership status relating to the Facility will in any way alter the status or responsibility of Applicant under this PCO. Applicant shall be responsible for and liable for completing all of its obligations pursuant to this PCO, regardless of whether the activities specified herein are to be performed by employees, agents, contractors, or consultants of Applicant, or by employees, agents, contractors, or consultants of any party to whom the property is transferred before or after the execution of this Order.
3. Applicant is responsible for insuring that all of its contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this PCO will comply with the terms of this PCO.
4. Any documents transferring ownership and/or operations of the Facility from Applicant to a successor-in-interest shall include written notice and a copy of this PCO. Applicant shall provide written confirmation of the notice and a copy of this PCO being provided to the new owner and/or operator and written notice of the transfer of ownership and/or operations of the Facility to TCEQ no less than 90 days prior to the transfer. Transfer of any of the obligations of the Applicant under this PCO to any third party is subject to approval by the Executive

W. D. J.

Director.

5. Applicant agrees to undertake all actions required by the terms and conditions of this PCO including any portions of this PCO incorporated by reference.
6. Applicant shall perform the Technical Requirements specified in Attachment A, Technical Requirements.
7. Applicant shall perform the Post-Closure Care Requirements in Attachment D, Maintenance Requirements.

III. STATEMENT OF PURPOSE

Through this agreed PCO, the TCEQ in accordance with 30 TEX. ADMIN. CODE § 335.2(m) requires facility-wide ground water monitoring for solid waste management units (SWMUs) identified in Table V.G.1, in accordance with 30 TEX. ADMIN. CODE § 335.167.

IV. INCORPORATION OF APPLICATION MATERIALS

This PCO is based on information submitted in the PCO application dated May 23, 2005, and declared administratively complete by the Executive Director on August 17, 2005, as revised August 5, 2005; January 5, 2006; February 8, 2006; May 24, 2006; October 27, 2006; November 6, 2006; and November 29, 2006, which Applicant has certified to be accurate and complete.

The application as amended is incorporated into this PCO by reference as if fully set out herein. In cases where the provisions of this PCO conflict with the application, this PCO supersedes the application. The expressed incorporation of the application does not relieve Applicant of its obligation to comply with all laws or regulations which are applicable to the activities authorized by this PCO.

V. FINDINGS OF FACT

1. Applicant is a private entity which owns and operates a hazardous waste management facility located on approximately 42 acres in the city of San Angelo in Tom Green County. The facility is in the drainage area of Segment No. 1421 of the Colorado River Basin (North Latitude 31E 29' 36.06", West Longitude 94E 24' 59.81").
2. The facility obtained 42 acres of land with two open cliché pits. They entered into a verbal agreement with two local foundries which allowed the disposal of foundry waste within the open pits. Over the years, baghouse dust, construction debris, and municipal solid waste

W. D. J.

were disposed of within these pits as well. Currently, the facility is subject to post-closure care for the RCRA-regulated SWMUs.

3. Texas Tank Car Works, Inc. 28th Street Landfill is located at 2021 East 28th Street in the city of San Angelo, Tom Green County. The PCO application includes a legal description of the Facility. The PCO application requests authorization to implement post-closure care activities and exemption from requirements for groundwater monitoring. This PCO specifically addresses response action activities related to the SWMUs identified in Table V.G.1.
4. This PCO is based upon information contained in the application submitted to the TCEQ pursuant to 30 TEX. ADMIN. CODE §305.50(b) and § 335.2(m), dated May 23, 2005, declared administratively complete by the Executive Director on August 17, 2005 and revised January 5, 2006; February 8, 2006; May 24, 2006; August 5, 2005; October 27, 2006; and November 2006.
5. Notice of Receipt of an Application and the Intent to Obtain a PCO was provided to the public in accordance with 30 TEX. ADMIN. CODE § 39.806 on August 17, 2005.
6. No public comments were received in response to the Notice of Receipt of an Application and the Intent to Obtain a PCO.
7. Notice of a Proposed PCO and Preliminary Decision was provided to the public in accordance with 30 TEX. ADMIN. CODE § 39.807.
8. No public comments were received in response to the Notice of a Proposed PCO and Preliminary Decision.
9. Wastes and waste constituents managed in the units addressed by this PCO are identified in the attached Technical Requirements (Attachment A).
10. The Applicant's PCO Application identifies the hazardous and solid waste constituents released or left in place at the Facility.
11. Applicant is seeking authorization by this Order to establish facility-wide post-closure care and exemption from groundwater monitoring for regulated hazardous waste management units.
12. Applicant does not currently hold a TCEQ Permit.

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VI. CONCLUSIONS OF LAW AND DETERMINATIONS

1. This PCO subjects Texas Tank Car Works, Inc. to the jurisdiction of the TCEQ pursuant to TEX. HEALTH & SAFETY CODE § 361.082(h) and TEX. WATER CODE § 7.031(f).
2. Texas Tank Car Works, Inc. is a "person" as defined in Tex. HEALTH & SAFETY CODE § 361.003(23).
3. The Applicant is the "owner/operator" of an existing "hazardous waste management facility" as those terms are defined at 30 TEX. ADMIN. CODE § 335.1.
4. The Applicant has demonstrated that the Facility meets the definition of "Facility" provided in 30 TEX. ADMIN. CODE § 335.1(55)(b).
5. Certain wastes and constituents found at the Facility are "hazardous wastes" or "hazardous constituents" as defined by 40 CFR Part 261, as adopted by reference in TEX. HEALTH & SAFETY CODE § 361.003(12) and 30 TEX. ADMIN. CODE § 335.1.
6. As evidenced by the Findings of Fact, Applicant has submitted an administratively complete application.
7. As evidenced by the Findings of Fact, the Executive Director processed the application in accordance with all applicable TCEQ procedural requirements.
8. The Executive Director has prepared a compliance history of the Applicant pursuant to the requirements of 30 TEX. ADMIN. CODE, Chapter 60. The compliance history is incorporated into this PCO by reference.
9. The corrective actions required by this PCO are consistent with all applicable federal and state law.
10. Texas Tank Car Works, Inc. is eligible for this PCO in lieu of a permit pursuant to 30 TAC § 335.2(m) as Applicant was not required to operate under a permit until the wastes were consolidated.
11. Upon issuance, this PCO will govern the assessment and remediation of any release at the site because the Applicant has left waste or contamination in place at the facility and is undergoing closure and/or post-closure care for the units identified in Attachment A.
12. Upon issuance, this PCO satisfies Corrective Action Provision 6 of Agreed Order SWR No. 39806 issued by the Texas Water Commission on November 14, 1990, and subsequently assigned TCEQ Docket No. 2005-1012-MLM-E. The requirement for a Post-Closure Permit and Groundwater Compliance Plan application has been superseded by a subsequent change

in the law under TEX. HEALTH & SAFETY CODE § 361.082(h) and TEX. WATER CODE § 7.031(f). All other Corrective Action Provisions of Agreed Order SWR No. 39806 remain in effect and are fully enforceable.

VII. SUBMISSION/AGENCY APPROVAL

1. Applicant shall submit all reports, plans, specifications, schedules, attachments, and response documents for review and approval within the time frame(s) specified either by the Technical Requirements provided in Attachments A, C, and D of this PCO or by the Executive Director.
2. The Executive Director shall notify Applicant in writing of any approval or disapproval of reports, plans, specifications, schedules, attachments, and response documents or any part thereof as necessary. Reports, plans, specifications, schedules, attachments, and response documents approved by the Executive Director in writing shall be deemed incorporated into and part of this PCO.
3. If the Executive Director does not approve any plan, report or other item required to be submitted to TCEQ for its approval pursuant to this PCO, Applicant shall address any deficiencies as directed by the Executive Director and resubmit the plan, report, or other item within the time period specified by the Executive Director.
4. No informal advice, guidance, suggestion, or comments by the Executive Director regarding reports, plans, specifications, schedules, attachments, or any other written documents submitted by the Applicant will be construed as relieving the Applicant of its obligations to obtain written approval, if and when required by this PCO.

VIII. FINANCIAL ASSURANCE

Applicant and its successors and assigns shall provide financial assurance for post-closure care and corrective action programs, as applicable, in a manner acceptable to the Executive Director in an amount not less than \$29,227 within sixty (60) days of issuance of this PCO. The financial assurance shall be secured, maintained, and adjusted in compliance with 30 TEX. ADMIN. CODE § 335.179 and 30 TEX. ADMIN. CODE Chapter 37 Subchapter P, and 30 TEX. ADMIN. CODE § 335.152. In addition, Applicant, its successors and/or assigns shall submit to the Executive Director, upon request, such information as may be required to determine the adequacy of the financial assurance.

IX. DISPUTE RESOLUTION

This section applies to any unresolved technical dispute between the TCEQ and Applicant arising under this PCO. Any dispute that arises under or with respect to this PCO shall first be subject to informal negotiations between the TCEQ program area and Applicant. The period of informal negotiations shall not exceed 30 calendar days from the date Applicant notifies the TCEQ of the need for dispute resolution. The informal negotiation period may be extended at the discretion of the TCEQ. The TCEQ's decision regarding an extension of informal negotiations shall not be subject to dispute resolution or judicial review. Invoking of informal negotiations shall not, by itself, postpone the deadlines for Applicant under this PCO and its Appendices and Attachments.

Following the expiration of the period of informal negotiations, Applicant may refer the dispute to the Deputy Director, Office of Permitting, Remediation, and Registration in a letter briefly describing the issue(s) to be resolved. In its letter, Applicant shall describe the nature of the dispute and shall include a proposal for its resolution. The filing of a letter shall not, in itself, postpone the deadlines for Applicant under this PCO. In any dispute, Applicant shall have the burden of demonstrating that its position is consistent with this PCO, its Appendices and Attachments, and applicable state and federal law. Any disputed issues will be responded to in writing.

Unless otherwise provided for in this PCO, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve technical disputes arising under or with respect to this PCO. The procedures set forth in this Section shall not apply to enforcement or compliance actions initiated by the TCEQ to enforce the failure by Applicant to comply with this PCO, its Attachments, or plans approved by the Executive Director of the TCEQ, or with obligations of Applicant that have not been disputed in accordance with this Section, or to prevent the imminent threat to the human health and the environment.

X. RESERVATION OF RIGHTS

1. TCEQ expressly reserves all statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Applicant's failure to comply with any of the requirements of this PCO. The PCO shall not be construed as a waiver or limitation of any rights, remedies, powers, and/or authorities that TCEQ has under the Texas Solid Waste Disposal Act or any other statutory, regulatory, or common law enforcement authority of the State of Texas. In addition, the Executive Director may, without further notice or hearing, refer this matter to the Office of the Attorney General of the State of Texas for further enforcement if the Executive Director determines that Applicant is noncompliant with the requirements set forth in this PCO.

2. This PCO shall not be construed to affect or limit in any way the obligation of Applicant to comply with all federal, state and local laws and regulations governing the activities required by this PCO. Nothing in this PCO is intended to release or waive any claim, cause of action, demand or defense in law or equity that any party to this Agreement may have against any person(s) or entity not a party to this Agreement.
3. TCEQ expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Applicant pursuant to this PCO and to request that Applicant perform tasks in addition to those stated in the Technical Requirements contained in Attachments A, C, and D of this PCO.
4. Notwithstanding any other provision of this PCO, Applicant shall remain responsible for obtaining any federal, state, or local permit for any activity at the Facility including that necessary for the performance of the work and for the operation or closure of the Facility.
5. Any noncompliance with such Executive Director approved plans, reports, specifications, schedules, attachments, and response documents shall be construed as a violation of the terms of this PCO.

XI. MODIFICATION OR AMENDMENT OF THE POST-CLOSURE ORDER

1. Except for the limited modifications specified in the attached Technical Requirements, this PCO may only be modified with approval of the TCEQ.
2. Any modification or amendment of the PCO not specified in the Technical Requirements of this PCO, and requiring approval of the TCEQ shall be submitted in accordance with the PCO application's general instructions contained in 30 TEX. ADMIN. CODE § 305.50(b). Also, public notice and an opportunity to comment shall be provided in accordance with 30 TEX. ADMIN. CODE Chapter 39, Subchapter N. Public comments shall be processed in accordance with 30 TEX. ADMIN. CODE §55.156, relating to Public Comment Processing.
3. The limited modifications specified in the attached Technical Requirements shall only be implemented by mutual agreement of the Executive Director and Applicant. Such modifications do not require a PCO application. The modifications shall be in writing, shall be first signed by Applicant, and shall be effective and incorporated into the PCO on the date such modifications are signed by the Executive Director. The Executive Director may initiate any modifications to this PCO as necessary to protect human health and the environment.
4. Any reports, plans, specifications, schedules and attachments required by this PCO shall be incorporated into this PCO upon written approval by the Executive Director.

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XII. REMEDIES FOR NONCOMPLIANCE

1. Applicant shall report to the Executive Director information regarding any noncompliance which may endanger human health or the environment.
 - a. Report of such information shall be provided orally within 24 hours from the time Applicant becomes aware of the noncompliance.
 - b. A written submission of such information shall also be provided within fifteen (15) days of the time Applicant becomes aware of the noncompliance. The written submission shall contain the following:
 - (1) a description of the noncompliance and its cause;
 - (2) the potential danger to human health or safety, or the environment;
 - (3) the period of noncompliance, including exact dates and times;
 - (4) if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
 - (5) steps taken or planned to reduce, eliminate, and prevent the recurrence of the noncompliance, and to mitigate its adverse effects with schedule of implementation.
2. Noncompliance with any provisions of this PCO may subject Applicant to enforcement action.

XIII. TERMINATION

The provisions of this PCO shall be deemed satisfied upon Applicant's receipt of written notice from the TCEQ that Applicant has demonstrated, to the satisfaction of the TCEQ, that the terms of this PCO, including any additional tasks determined by the TCEQ to be required pursuant to this PCO, have been satisfactorily completed. This notice shall also affirm Applicant's continuing obligation to recognize the TCEQ's Reservation of Rights as required in Section X after all other requirements of the PCO are satisfied. Applicant must provide public notice in accordance with 30 TEX. ADMIN. CODE § 39.808 prior to the TCEQ issuance of a Notice of Termination.

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XIV. INDEMNIFICATION OF THE STATE OF TEXAS GOVERNMENT

Applicant agrees to indemnify, save and hold harmless the State of Texas, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Applicant or their agents, independent contractors, receivers, trustees, and assignees in carrying out activities required by this PCO. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Applicant under various contracts.

XV. FORCE MAJEURE

1. Applicant shall perform all the requirements of this PCO according to the time limits set unless this performance is prevented or delayed by events that constitute a force majeure.
2. For the purposes of this PCO, a 'force majeure' is defined as any event that is caused by an Act of God, labor strike, or work stoppage, or other circumstance beyond the Applicant's control that could not have been prevented by due diligence and that makes substantial compliance with the applicable provision or provisions of this PCO impossible. Such events do not include increased costs of performance, economic hardship, changed economic circumstances, normal precipitation events, or failure to submit timely and complete applications for federal, state, or local permits. Title 30 TAC § 70.7(a) states: "If a person can establish that an event that would otherwise be a violation of a statute, rule, order, or permit was caused solely by an act of God, war, strike, riot, or other catastrophe, the event is not a violation of that statute, rule, order, or permit."
3. Applicant has the burden of proving by clear and convincing evidence that any delay is or will be caused by events reasonably beyond its control.
4. In the event of a force majeure, the time for performance of the activity delayed by the force majeure shall be extended for the period of the delay attributable to the force majeure plus reasonable additional time for resumption of activities. The time for performance of any activity dependent on the delayed activity shall be similarly extended, except to the extent that the dependent activity can be implemented in a shorter time. The Executive Director shall determine whether subsequent requirements are to be delayed and the time period granted for any delay. Applicant shall adopt all reasonable measures to avoid or minimize any delay caused by a force majeure.
5. In the event of a force majeure, Applicant shall immediately notify the Executive Director by telephone within twenty-four (24) hours after Applicant becomes aware of the event and shall within fifteen (15) calendar days of becoming aware of the event, notify the Executive Director in writing of the cause and anticipated length of the delay. The notification shall also state the measures taken and/or to be taken to prevent or minimize the delay, and the

W. D. G.

timetable that Applicant intends to follow to implement the delayed activity. Failure of Applicant to comply with the force majeure notice requirements will be deemed a forfeiture of its right under this section.

XVI. STATEMENT OF SEVERABILITY

The provisions of this PCO are severable, and if a court of competent jurisdiction or other appropriate authority deems any provision of this PCO unenforceable, the remaining provisions shall be valid and enforceable.

XVII. SURVIVABILITY/PERMIT INTEGRATION

The requirements of this PCO shall not terminate upon the issuance of a RCRA permit or permit modification, air quality permit, or other form of permit or order, unless all of the requirements of this PCO are expressly integrated into or superseded by such permit or order, or if all provisions not expressly integrated into or superseded by such permit or order have been fully completed to TCEQ's satisfaction.

XVIII. EFFECTIVE DATE

The effective date of this PCO is the date of hand-delivery of the PCO to Applicant, or three days after the date on which the Commission mails notice of this PCO to Applicant, whichever is earlier, pursuant to TEX. GOV'T CODE §2001.142.

W.D.M.

IX. TABLES

Table V.G.1—Landfills is incorporated by reference into this PCO.

<i>Permit Unit No.</i>	<i>Landfill</i>	<i>N.O.R. No.</i>	<i>Waste Nos.¹</i>	<i>Rated Capacity</i>	<i>Dimensions</i>	<i>Distance from lowest liner to groundwater</i>	<i>Action Leakage Rate (if required)</i>	<i>Unit will manage Ignitable, Reactive, Incompatible, or F020, F021, F022, F023, F026, and F027 Waste (state all that apply)</i>
1	East Cell		D006, D008			> 40 feet	NOT REQUIRED	NONE
2	West Cell		D006, D008			>40 Feet	NOT REQUIRED	NONE

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SIGNATURE PAGE

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

For the Commission

Date

I, the undersigned, have read and understand the attached Post-Closure Order in the matter of Texas Tank Car Works, Inc. I am authorized to agree to the attached Post-Closure Order on behalf of the Texas Tank Car Works, Inc and do agree to the specified terms and conditions.

I understand that, by entering into this Post-Closure Order, the Texas Tank Car Works, Inc. waives certain procedural rights, including but not limited to, the right to formal notice of an evidentiary hearing, the right to an evidentiary hearing, and the right to appeal the terms and conditions of the Post-Closure Order. I agree to the terms of the Post-Closure Order.

W. D. Green, V.P.
Signature

3-12-2008
Date

W. D. Green, V.P.
W. David Green, Vice President
Texas Tank Car Works, Inc.
San Angelo, TX

I, the undersigned, on behalf of the Executive Director of the Texas Commission on Environmental Quality, hereby agree to the terms of this Post-Closure Order.

Stephanie Bergeron Perdue
Stephanie Bergeron Perdue
Deputy Director
Office of Legal Services
Texas Commission on Environmental Quality

3/21/08
Date

W.D.G.

ATTACHMENT A
TECHNICAL REQUIREMENTS

ATTACHMENT A--TECHNICAL REQUIREMENTS

The Post-Closure Order prepared by the Executive Director incorporates the following technical requirements which specify the corrective action obligations for the Facility in accordance with 30 TAC §335.152 and §335.167, as set out below:

A. Groundwater Monitoring Program

Applicant shall design, construct and maintain a ground-water monitoring program to monitor area groundwater throughout the active life of the facility and any post-closure care period. Groundwater monitoring at the facility shall at a minimum consist of a Detection Monitoring System for the Lipan aquifer. This aquifer is comprised of saturated alluvial deposits which are hydrologically connected to the updip portions of the underlying Permian age limestones, dolomites and shales. The Detection Monitoring System shall yield groundwater samples from the uppermost aquifer that represents the quality of background water and the quality of groundwater at the point of compliance.

1. Identification of Detection Monitoring Program Unit(s)/Area(s)

The Detection Monitoring Program is specific to the RCRA-regulated unit(s) or area(s) listed in Table VI.B.3.b. - Unit Groundwater Detection Monitoring System and as authorized, in accordance with this PCO, for which groundwater monitoring requirements apply pursuant to 30 TAC Section 335.164.

2. Capabilities of Detection Monitoring Systems

The Detection Monitoring System shall yield groundwater samples from the uppermost aquifer/water-bearing zone that represent the quality of background water that has not been affected by operation of the regulated unit(s) and that represent the quality of groundwater passing the point of compliance. This system shall be capable of detecting a release from the regulated unit to the groundwater.

3. Point of Compliance

The point of compliance for the Detection Monitoring System is defined by a vertical plane, located along the entire periphery of each unit, covered by the order, that extends down into the uppermost aquifer/water bearing zone underlying the regulated unit.

4. Detection Monitoring Program

Applicant is required to install and operate a Detection Monitoring System subject to the limitations contained herein. The Detection Monitoring System wells for each unit/area are listed in Table VI.B.3.b. - Unit Groundwater Detection Monitoring System.

- a. A Detection Monitoring System shall, at a minimum, consist of two categories of wells, Background and Point of Compliance Wells, which will be used to establish groundwater quality for each RCRA-regulated unit.
 - (1) Background Well(s) are those wells that are unaffected by the operations of the unit. The Background Well(s) are depicted in Attachment B - Detection Monitoring System Wells Map and are also listed in Table VI.B.3.b. - Unit Groundwater Detection Monitoring System.
 - (2) Point of Compliance (POC) Wells are used to demonstrate compliance with the Detection Monitoring Parameters which are listed on Table VI.B.3.c. - Groundwater Detection Monitoring Parameters. POC Wells are designated in Attachment B-Detection Monitoring System Wells Map and are also listed in Table VI.B.3.b., Unit Groundwater Detection Monitoring System.
 - (3) The Detection Monitoring System may also include Supplemental Wells, as necessary, to establish groundwater quality and hydrogeologic conditions of the uppermost aquifer/water-bearing zone.
- b. Applicant shall determine groundwater quality in the uppermost aquifer throughout the active life of the facility and any post-closure care period in accordance with the parameter list and sampling schedule specified in Provisions C.2. and D.2., of the technical requirements respectively.
- c. The design, construction, maintenance and operation of the authorized components of the Detection Monitoring Program must be in accordance with this order and approved Order Application Section VI.B., which is incorporated into this order through Order Provision IV.

B. Construction, Certification, and Plugging

Wells shall be constructed and maintained so groundwater samples are representative of the aquifer's water quality. A record of drilling and construction details demonstrating compliance with the terms of this order section shall be prepared in accordance with

Attachment C (Well Design and Construction Specifications). Wells constructed prior to issuance of this order may be utilized as groundwater monitoring wells if they meet the standards of Attachment C (Well Design and Construction Specifications).

1. Well Construction

- a. For all groundwater monitor wells to be constructed in accordance with this order, Applicant shall notify the Executive Director to report the proposed monitor well location and screened interval at least thirty (30) days in advance of the anticipated date of installation or in accordance with an approved schedule for installation. Alternatively, a schedule for installation issued as part of an approved work plan shall constitute such notification. New well construction shall commence upon written approval of the Executive Director within the timeframes specified in this order.
- b. Applicant shall install the wells of the Detection Monitoring System and submit certification of this installation within sixty (60) days of installation, as described in Attachment C (Well Design and Construction Specifications). The Detection Monitoring Wells shall be installed in accordance with the schedule outlined in Attachment C (Well Design and Construction Specifications).

2. Replacement Wells

Prior to installation of a replacement well, Applicant shall submit to the Executive Director for approval, the replacement well specifications and an explanation of why the well is being replaced. For any Detection Monitoring System well to be considered a replacement well and not a new well, the well shall have no design changes from the well being replaced; shall be drilled within fifteen (15) feet of the well being replaced; and shall be installed in accordance with this Provision and Attachment C (Well Design and Construction Specifications).

3. Well Management Activities Requiring Order Modification

- a. If Applicant or the Executive Director determines that the well integrity, materials of construction, or well placement no longer enable a well to yield samples representative of groundwater quality from the desired aquifer(s), then Applicant shall submit an order modification or amendment request to the Executive Director in accordance with the provisions of 30 TAC Sections 305.50(b) describing actions Applicant will take to remedy the situation. Applicant shall also notify the Executive Director within fifteen (15) days of such determination regarding a well.

- b. Applicant shall submit an order modification or amendment request to the Executive Director in accordance with the provisions of 30 TAC Sections 305.50(b) when new POC or Background Wells are to be constructed after issuance of this order (i.e., if the wells have not been included in the approved Order Application materials referenced in Order Provision IV.).
- c. Applicant shall submit an order modification or amendment request, for installation of a new well, to the Executive Director in accordance with the provisions of 30 TAC Sections 305.50(b) when any wells being replaced do not meet the requirements of Provision B.2., of the Technical Requirements, for a replacement well.

4. Plugging and Abandonment Procedures

- a. If a Detection Monitoring Well listed in Table VI.B.3.b. - Unit Groundwater Detection Monitoring System is plugged and abandoned and a replacement well is not installed in accordance with this order, then a modification request shall be submitted in accordance with 30 TAC Section 305.50(b) within 90 days of the plugging and abandonment procedure to update Table VI.B.3.b. - Unit Groundwater Detection Monitoring System of the order.
- b. For all wells to be plugged and abandoned after issuance of this order, Applicant shall follow the procedures specified in Attachment C (Well Design and Construction Specifications).

C. Detection Monitoring System: Operation

1. Uppermost Aquifer/Water-Bearing Zone Monitored by the Detection Monitoring System

The Detection Monitoring System shall be designed to monitor the groundwater in the uppermost aquifer/water-bearing zone. The "uppermost aquifer", as referenced in this PCO, refers to the Leona Formation of the Lipan aquifer. The Leona Formation ranges in elevation from approximately 1864 feet above Mean Sea Level (MSL) to 1739 feet above MSL. The top of the uppermost aquifer/water-bearing zone is approximately 58 feet below ground surface (BGS). Groundwater is typically encountered 57 feet BGS.

2. Groundwater Detection Monitoring Parameters and Compliance

- a. Applicant shall monitor well numbers MW1 - MW6. The uppermost aquifer's groundwater quality will be evaluated based on the parameters listed in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters. Sampling and analysis for the Groundwater Detection Monitoring

Parameters of Table VI.B.3.c. - Groundwater Detection Monitoring Parameters shall be taken at times and in a manner so as to be representative of the monitored activity. The method used to obtain a representative sample of the material to be analyzed shall be the appropriate method from Appendix I of 40 CFR Part 261 or an equivalent method approved in writing prior to use by the Executive Director of the TCEQ. Laboratory methods shall be those specified in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, SW-846, 1987 (EPA SW-846), as revised; *Standard Methods for the Examination of Water and Wastewater, Fifteenth Edition, 1980, and 1981 supplement, or current adopted edition*; *RCRA Ground-Water Monitoring: Draft Technical Guidance, 1992*, OSWER Directive 9950.1, or an equivalent method approved in writing prior to use by the Executive Director. [30 TAC Section 305.125(11)(A)]

- b. Background groundwater quality for a monitoring parameter or constituent shall be based on a sequence of at least four samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained. Applicant shall determine the concentrations of the detection monitoring parameters and water quality parameters listed in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters for each sample collected.
- c. Compliance with the Groundwater Detection Monitoring Parameters listed in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters is defined by the results of the data evaluation of Provision D.4. of this attachment, wherein the groundwater monitoring data for each well does not exhibit evidence of contamination over background values. If any POC Well is determined to be noncompliant with Table VI.B.3.c. - Groundwater Detection Monitoring Parameters at any time during the Detection Monitoring Program, Applicant shall respond and report according to Provision E.1. of this attachment.

3. Post-Closure Care Period

The area(s) listed in Provision A.1., of this attachment, shall remain in the Detection Monitoring Program during the active life of the unit(s) and during any applicable post-closure care period. After closure activities are completed for a specified unit and certification of closure is received by the Executive Director, any applicable post-closure care period shall begin. If the post-closure care period has expired and a Statistically Significant Increase (SSI) of the Groundwater Detection Monitoring Parameters of Table VI.B.3.c. - Groundwater Detection Monitoring Parameters has not been confirmed in the groundwater, then Applicant shall notify the Executive Director in writing at least 30 days prior to discontinuing the Detection Monitoring Program for the specified unit. Within

90 days of the notification, Applicant shall submit a final report to the Commission for the specified unit. The final report shall include the information required by the annual report of Provision G. of this attachment.

4. Waste Management of Recovered Groundwater

- a. Recovered groundwater from a Detection Monitoring Well with no known contamination may be managed as uncontaminated prior to analysis. Following analysis, if Applicant determines that a Table VI.B.3.c.- Groundwater Detection Monitoring Parameter has an SSI over background value, the recovered groundwater shall be managed as contaminated water.
- b. Recovered groundwater with known contamination which exceeds the Table VI.B.3.c. - Groundwater Detection Monitoring Parameters shall be managed as contaminated water.

D. Sampling and Analysis

1. Sampling and Analysis

Applicant shall follow the methods set out in EPA's RCRA Groundwater Monitoring Draft Technical Guidance Document (November 1992) or an alternate method with prior written approval of the Executive Director to collect and preserve samples withdrawn from groundwater monitoring wells. The collected samples shall be managed (i.e., Chain of Custody and handling procedure), analyzed, and statistically evaluated (i.e., Quality Assurance/Quality Control (QA/QC)) 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 other equivalent methods with prior written approval of the Executive Director.

- a. All groundwater analyses required by this order shall be performed using a QA/QC program where all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. All QA/QC program details shall be put in writing and assignments made to qualified personnel. At a minimum, the program shall conform to the QA/QC program details described in 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 other equivalent methods accepted in writing by the Executive Director.

- b. Groundwater analyses required by this order shall utilize laboratory methods which are capable of measuring concentrations equal to or less than established background values.

Wells shall be sampled according to the Sampling and Analysis Plan presented in Section VI.B.3. Groundwater Monitoring System of the approved Order Application, which is incorporated into this order through Order Provision IV. Applicant or the Executive Director shall propose modifications, as necessary, to the Sampling and Analysis Plan in order to achieve the Detection Monitoring Program objectives. Any and all revisions to the plan shall become conditions of this order at the beginning of the next full quarter after approval by the Executive Director.

2. Sampling and Analysis Frequencies and Parameters

- a. Frequencies of sampling shall be monthly, quarterly, semiannually or yearly, depending on the sampling objective. These periods of time are defined below:
 - (1) "Month" shall be a calendar month;
 - (2) "Quarter" shall be based on divisions of the calendar year (i.e., January through March, April through June, July through September, October through December);
 - (3) "Semiannual" shall be based on divisions of the calendar year (i.e., January through June, July through December) and consist of two consecutive quarters;
 - (4) "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,
 - (5) "Calendar year" shall be based on divisions of the calendar (i.e. January through December).
- b. Sampling of wells shall commence during the first complete quarter after the TCEQ accepts Applicant's certification of new well installation. Samples shall be collected during the first thirty (30) days of the specified sampling frequency.
- c. In the first and subsequent years of the Detection Monitoring Program, the wells of Table VI.B.3.b. - Unit Groundwater Detection Monitoring System shall be sampled and analyzed according to the schedule listed in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters.

- d. Field determination requirements for wells listed in Table VI.B.3.b. - Unit Groundwater Detection Monitoring System consist of the following measurements or observations which shall be established during each sampling event:
- (1) Water level measurements relative to Mean Sea Level measured to within 0.01 foot.
 - (2) Determination of pH, temperature, Specific Conductivity and Turbidity in nephelometric turbidity units for each well.
 - (3) Descriptions of water sample appearance (clarity, color, etc.) shall be recorded.
 - (4) The total depth of each well, which is not equipped with a dedicated pump, shall be measured during each sampling event. The total depth of each well equipped with a dedicated pump shall be measured when pumps are removed for maintenance. At a minimum, the wells with dedicated pumps will be checked for silting every 3 years. The measured total depth shall be compared to the total depth recorded on the well construction log. Should an analysis of the measured and the recorded total depth reveal that the well is silting in, Applicant shall perform such actions necessary (redevelopment, replacement, etc.) to enable the well to function properly.
 - (5) All wells specified in this order shall be inspected during each sampling event. 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.

3. Statistical Procedures for Data Evaluation

- a. For each POC Well sampled during each sampling event, Applicant shall determine whether there is evidence of an SSI in the concentrations of each Groundwater Detection Monitoring Parameter of Table VI.B.3.c. - Groundwater Detection Monitoring Parameters when compared to the Background Well groundwater quality data. In determining whether or not an SSI has occurred for a Groundwater Detection Monitoring Parameter of Table VI.B.3.c. - Groundwater Detection Monitoring Parameters, Applicant shall establish if the background values have been exceeded by utilizing the statistical procedures and data evaluation described in the following guidance:

- (1) Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, U.S. EPA, April 1989; and
- (2) Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Addendum to Interim Final Guidance, U.S. EPA, June 1992.

- b. The statistical procedure(s) that shall be used to determine if an SSI has occurred over background values limits shall be the ANOVA approach, per 30 TAC 335.163 (8)(B), for the following unit(s) identified in Provision A.1.: East Landfill and West Landfill. To employ the selected statistical procedure listed above, Applicant is required to collect a minimum of one sample from each unit's Background and POC Wells during each sampling event.
- c. If it is determined that the selected statistical procedure is not appropriate to conduct data evaluation for a specified unit, then Applicant shall select an alternate statistical procedure. Prior to using a statistical procedure which is different than the one identified in Provision D.3.b., of this attachment, Applicant shall obtain approval from the Executive Director through an order amendment or modification as specified in 30 TAC Sections 305.50(b)

4. Data Evaluation

- a. Data evaluations shall be completed within sixty (60) days of the sampling date unless QA/QC procedures show that data is unacceptable and re-analysis 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 to conduct data evaluation cannot be met.
- b. Data evaluation shall determine whether there is evidence of an SSI for Groundwater Detection Monitoring Parameters listed in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters each time groundwater quality is determined at the POC in accordance with 30 TAC Section 335.163(7).

E. Response Requirements for SSI

1. If Applicant has determined an SSI over background values for any of the Groundwater Monitoring Parameters identified in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters in accordance with statistical procedures authorized by Provision D.3., of this attachment, and specified by Applicant, Applicant shall perform the following actions:

- a. Notify the Executive Director in writing, within seven (7) days. The notification must indicate which Groundwater Detection Monitoring Parameter(s) of Table VI.B.3.c. - Groundwater Detection Monitoring Parameters has exhibited an SSI.
- b. Immediately sample the groundwater in all wells of Table VI.B.3.b. - Unit Groundwater Detection Monitoring System which exhibit an SSI for the specified unit and determine whether constituents of Appendix IX of 40 CFR 264 are present, and if so, in what concentrations.
- c. For any Appendix IX hazardous constituent found in the analysis pursuant to Provision E.1.b., of this attachment, Applicant may resample for hazardous constituents within one month and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these detected constituents will form the basis for a Compliance Monitoring Program. If Applicant does not resample for the constituents found pursuant to Provision VI.E.1.b., the hazardous constituents found during the initial Appendix IX analysis will form the basis for the Compliance Monitoring Program.
- d. Upon establishing that a release has occurred from a unit(s), Applicant shall submit to the Executive Director an order amendment or modification to modify the Groundwater Monitoring Program, and establish a compliance plan to initiate a Compliance Monitoring Program and/or a Corrective Action Program for the specified unit(s). The order amendment/modification application must be submitted based on the following schedule:
 - (1) If groundwater downgradient of the specified unit does not exceed the requirements in 30 TAC Section 335.158 for the proposed groundwater protection standard (GWPS), then within ninety (90) days, Applicant shall submit an order amendment or modification to establish a Compliance Monitoring Program for the specified unit;
 - (2) If groundwater downgradient of the specified unit exceeds the requirements in 30 TAC Section 335.158 for the proposed GWPS requested in the application for a specified unit, and an Alternate Concentration Limit (ACL) is not being proposed in the application in accordance with 30 TAC Section 335.160(b) to establish the GWPS, then within 180 days, Applicant shall submit an order amendment or modification to establish a Corrective Action Program for the specified unit.

- (3) If groundwater downgradient of the specified unit exceeds the requirements in 30 TAC Section 335.158 for the proposed GWPS requested in the application for a specified unit, and an ACL is being proposed in the application in accordance with 30 TAC Section 335.160(b) to establish the GWPS, then within 180 days, Applicant shall submit an order amendment or modification with an ACL demonstration to establish a Corrective Action Program for the specified unit.
2. If Applicant determines that there is an SSI above (or for pH, a statistically significant variation from) background values for the Groundwater Detection Monitoring Parameters specified in Table VI.B.3.c. - Groundwater Detection Monitoring Parameters, Applicant may demonstrate a source other than the RCRA-regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. In such cases, Applicant shall perform the following actions:
 - a. Notify the Executive Director in writing within seven (7) days that Applicant intends to make a demonstration.
 - b. Within ninety (90) days, submit a report to the Executive Director which demonstrates that a source other than a RCRA-regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation.
 - c. Submit to the Executive Director an application for an order amendment or modification to establish a compliance plan and to make any appropriate changes to the Detection Monitoring Program at the facility. The applications shall be submitted in accordance with Order Provision E.1.d.
 - d. Continue to monitor groundwater in accordance with the Detection Monitoring Program at the facility.

F. Revised Detection Monitoring Program

If Applicant or the Executive Director determines that the Detection Monitoring Program no longer satisfies the requirements of 30 TAC Section 335.164, Applicant must, within ninety (90) days of either Applicant's determination or Executive Director's notification, submit an order amendment or modification request to make any appropriate changes to the Detection Monitoring Program which will satisfy the regulations.

G. Annual Detection Monitoring Reporting Requirements

Applicant shall submit an Annual Detection Monitoring Report which shall include the following information determined since the previously submitted report:

1. A statement whether an SSI has occurred over background values in any well during the previous calendar year period and the status of any SSI events.
2. Applicant shall include the results of all monitoring, testing, and analytical work obtained or prepared pursuant to the requirements of this order, including a summary of background groundwater quality values, groundwater monitoring analyses, statistical calculations, graphs and drawings.
3. The groundwater flow rate and direction in the uppermost aquifer. The groundwater flow rate and direction of groundwater flow shall be established using the data collected during the preceding calendar year's sampling events from the monitoring wells of the Detection Monitoring Program. Applicant shall also include in the report all documentation used to determine the groundwater flow rate and direction of groundwater flow.
4. A contour map of piezometric water levels in the uppermost aquifer based at a minimum upon concurrent measurement in all monitoring wells. All data or documentation used to establish the contour map should be included in the report.
5. Recommendation for any changes.
6. Any other items requested by the Executive Director.

H. Record Keeping Requirements

1. Applicant shall enter all monitoring, testing, analytical, statistical test computation data in evaluating groundwater monitoring data, and inspection data obtained or prepared pursuant to the requirements of this order, including graphs and drawings, in the operating record at the facility.
2. The operating record at the facility shall be made available for review by the staff of the Commission upon request.

I. Compliance Scheduling Requirements

Within 120 days of the issuance of this order, Applicant shall complete the installation of all wells required by Table VI.B.3.b. - Unit Groundwater Detection Monitoring System.

Tables

Table VI.B.3.b. – Unit Groundwater Detection Monitoring System

Table VI.B.3.c. – Groundwater Sample Analysis

TABLE VI.B.3.b. - UNIT GROUNDWATER DETECTION MONITORING SYSTEM

Waste Management Unit/Area Name ¹ : 28 th Street Facility, East, West, Cells		MW1	MW2	MW3	MW4	MW5	MW6	MW7
Well Number(s)								
Hydrogeologic Unit Monitored		upper	upper	upper	upper	upper	upper	upper
Type (e.g., point of compliance, background, observation, etc.)		observation	observation	observation	observation	observation	observation	observation
Up or Down Gradient		up	down	down	down	down	down	down
Casing Diameter and Material		PVC	4" PVC	4" PVC	4" PVC	2" PVC	2" PVC	2" PVC
Screen Diameter and Material		PVC	4" PVC	4" PVC	4" PVC	2" PVC	2" PVC	2" PVC
Screen Slot Size (in.)		NA	0.01"	0.01"	0.01"	0.02"	0.02"	0.02"
Top of Casing Elevation (ft, MSL)		1878.30	1873.5	1872.96	1866.18			TBD
Grade or Surface Elevation (ft, MSL)		1876	1872	1872	1865	1873	1873	~1873
Well Depth (ft)		76	64	72	65	67.5	69.5	TBD
Screen Interval, From(ft) - To(ft)		10 feet, actual depth not known	54-64	62-72	55-65	52-67.5	59.5-69.5	TBD
Facility Coordinates X		1973556.1381	1974513.5023	1974221.1447	1973862.8071	1974591.3028	1974653.0423	
Facility Coordinates Y		663301.9594	662876.2973	662229.1474	662143.9949	663078.6368	663396.2576	

¹From Tables in Section V.

ATTACHMENT B
MAP OF FACILITY UNITS

ATTACHMENT C
WELL DESIGN AND WELL SPECIFICATION

Attachment C - Well Design and Construction Specifications

1. TTWC 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 order 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.

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

4. TTWC 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 Order, 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 groundwater recovery or injection wells to optimize the groundwater remediation process in accordance with standard engineering practice.
7. TTWC shall design and construct the intake portion of a well so as to allow sufficient water flow into the well for sampling purposes and to 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. 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.

Groundwater recovery and injection wells shall be designed in accordance with standard engineering practice to ensure adequate well production and to 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 Texas Commission on Environmental Quality (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 borehole 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, TTWC 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 monitored. For groundwater 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. TTWC shall protect the above-ground portion of the well by bumper guards and/or metal outer casing protection.
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;
 - . 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. TTWC shall complete construction or abandonment and plugging of each well in accordance with the requirements of this Order and 16 TAC 76.1000 through 76.1009 and shall certify such proper construction or abandonment within sixty (60) days of installation or abandonment. TTWC shall install the additional well within 120 days of the issuance of this Order. TTWC shall submit, for the new well or any replacement wells, well completion logs for each well within sixty (60) days of well completion and development in accordance with 16 TAC Chapter 76. Certification of each well shall be submitted within sixty (60) days of installation for an individual well project or within sixty (60) days from the date of completion of a multiple well installation project. 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 form:
- "This is to certify that installation (or abandonment and plugging) of the following facility components authorized or required by TCEQ Order No. 83142 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 Order No. 83142:" (Description of facility components with reference to applicable Order provisions).
15. TTWC shall clearly mark and maintain the well number on each well at the site.
16. TTWC 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. TTWC 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 TTWC 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 groundwater quality.

18. TTWC 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 this attachment to this order. The plugging of wells shall be in accordance with 16 TAC § 76.1000 through § 76.1009 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.

ATTACHMENT D
POST-CLOSURE CARE REQUIREMENTS

Attachment D – Post-Closure Care Requirements

A. Facility Post-Closure Care Requirements

For each hazardous waste management unit which is closed as a landfill, the applicant shall conduct post-closure care of the unit for a period of at least 30 years after July 11, 2002, the date of closure certification for both units. Post-closure care shall be performed in accordance with the Post-Closure Plans in the application, as referenced in Order Provision IV, 40 CFR 264.117, and the following requirements:

1. Maintain all storm water conveyance structures in good functional condition.
2. Maintain the cover on the 28th Street Facility, East and West Cells, as applicable, such that the cover promotes drainage, prevents ponding, minimizes surface water infiltration, and minimizes erosion of the cover. Any desiccation cracks, erosion, gullying, or other damage shall be repaired upon observance.
3. Maintain a self-sustaining vegetative cover on the capped areas by periodic seeding, fertilizing, irrigation, and/or mowing.
4. Maintain all benchmarks at the facility.
5. Maintain the facility perimeter fence, manned or locked gates and warning signs in good functional condition.
6. Ensure that all entrances to the facility have manned or locked gates.
7. Ensure that the Texas Commission on Environmental Quality (TCEQ) has access to the facility.
8. Prepare and submit the Biennial Report required by 40 CFR 264.75.
9. Perform all ground-water monitoring and related activities specified in Attachment A of the PCO.
10. Notify the Region 8 San Angelo office within ten (10) days of any sampling/drilling/plugging/etc. activities so that region personnel may split/observe/etc.
11. General Post-Closure Requirements

Request for Order Modification or Amendment

Applicant shall submit a written request for a order modification or amendment to authorize a change in the approved Post-Closure Plan(s) in accordance with 40 CFR 264.118 (d)(2). The written request shall include a copy of the amended Post-Closure Plan(s) for approval by the Executive Director.

Time Frames for Modification/Amendment Request

Applicant shall submit a written request for a order modification or amendment in accordance with the time frames in 40 CFR 264.118 (d)(3).

12. Post-Closure Notice and Certification Requirements

No later than 60 days after completion of the established post-closure period for each unit, Applicant shall submit to the Executive Director, by registered mail with a copy to the TCEQ Regional Office, a certification that the post-closure period for the unit was performed in accordance with the specifications of the approved Post-Closure Plan and this order. The certification shall be signed by Applicant and a registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Executive Director upon request until the Executive Director releases the owner or operator from the financial assurance requirements for post-closure under 40 CFR 264.145 (i).

B. Financial Assurance for Post-Closure

1. Applicant shall provide financial assurance for post-closure care of all existing units required by this order in an amount not less than \$29,227 (2006 dollars) as shown on Table VII.D.-Post Closure Cost Estimate. Financial assurance shall be secured and maintained in compliance with 30 TAC Chapter 37, Subchapter P and 30 TAC 335.152.
2. Applicant shall submit to the Executive Director, upon request, such information as may be required to determine the adequacy of the financial assurance.

Table

Table VII.D – Unit Post-Closure Cost Estimate

TABLE VII.D. - UNIT POST-CLOSURE COST ESTIMATE

28th Street Facility, East and West Landfills

Task	Unit Cost	Cost
<p>Task 1 Cap Inspection and Maintenance</p> <p>Examine condition of cap and perimeter fence. Make minor repairs as necessary. Mow cap areas, remove mesquite or other brush. Annual report.</p> <p style="text-align: right;">Cost per event (See note) Task 1 Annual Cost – 2 Events</p> <p>One time repair – Differential settlement of the cap. Assume 1 event prorated over 25 years of post-closure. ($\\$2345 \div 25 = \\94)</p> <p style="text-align: right;">Annual Unit Post-Closure Care Cost Task 1 Maintenance Cost (26 yrs)</p>	<p style="text-align: center;">\$350</p>	<p style="text-align: center;">\$700</p> <p style="text-align: center;">\$94</p> <p style="text-align: center;">\$794 \$19,850</p>
<p>Task 2 Groundwater Monitoring</p> <p>Groundwater sampling and analysis per event cost (\$120 per well \times 7 wells)</p> <p>Year 1 (4 events) Year 2 (2 events) Year 3 (2 events)</p> <p style="text-align: right;">Task 2 groundwater Monitoring Cost (3yrs)</p>	<p style="text-align: center;">\$840</p> <p style="text-align: center;">\$3,360 \$1,680 \$1,680</p>	<p style="text-align: center;">\$6,720</p>
<p>subtotal</p>		<p>\$26,570</p>
<p>Contingency (10% minimum)</p>		<p>\$29,227</p>

Note: cost based upon actual cost proposal in application.

TECHNICAL SUMMARY

Description of Application

Applicant: Texas Tank Car Works, Inc. of San Angelo
Industrial Solid Waste Registration No. 83142
PCO No. 83142
EPA I.D. No. TXD000001388

Location: Texas Tank Car Works, Inc. of San Angelo (TTCW) in San Angelo, Texas is located at 2021 East 28th Street on approximately 42 acres of land in Tom Green County. The site is within the drainage areas of Segment No. 1421 of the Colorado River Basin (North Latitude 31° 29' 36.06", West Longitude 94° 24' 59.81").

This facility is not located in an area affected by the Texas Coastal Management Program.

General: The facility consists of two landfills that managed hazardous wastes from foundries. This activity ceased in 1982. Currently, the facility is subject to post-closure care for the hazardous waste units since the wastes were consolidated into two smaller areas.

TTCW has applied to the Texas Commission on Environmental Quality (TCEQ) for a Post-Closure Order (PCO) to authorize Post-Closure care, including groundwater detection monitoring. The application request dated May 23, 2005 was revised August 5, 2005, January 5, 2006, February 8, 2006, May 24, 2006, October 27, 2006, and November 6, 2006.

Authority: A proposed Post-Closure Order has been prepared in accordance with applicable requirements of 30 Texas Administrative Code (TAC) Chapters 335 and 305, which have been adopted under the authority of the TEXAS HEALTH AND SAFETY CODE ANN., Chapter 361 (Vernon Supp.), and Section 5.103, Texas Water Code Ann. (Vernon Supp.). The TCEQ and the EPA have entered into a Joint Permitting Agreement (JPA) whereby EPA accepts the Applicant's information submitted through the State as a Federal application for purposes of implementing HSWA.

Technical Information

A proposed PCO has been prepared, and contains corrective action obligations for the facility in accordance with, 30 TAC 335.152 and 335.164 as set out below:

- A. Install a new well, for the groundwater detection monitoring system, as specified in Attachment C – Well Design and Construction specifications of the PCO.
- B. Implement and maintain a groundwater monitoring program as specified in Attachment A – Technical Requirements of the PCO.

TECHNICAL SUMMARY

Page 2

- C. TTCW shall notify the Region 8 San Angelo office within ten (10) days of any sampling/drilling/plugging/etc activities so that region personnel may split/observe/etc.

Public Concerns

The units addressed by this PCO are landfills that were closed with waste in place. These units are located within a vacant 42 acre site, which in turn is surrounded by industrial facilities to the east, farmland and agricultural land to the north and west, and undeveloped land to the south. There are no city neighborhoods that border the site. There have been no local concerns expressed about the landfills.

Public Notice and Opportunity for Hearing

TTCW has provided public notice of the requested order in accordance with 30 TAC Sections 305.69(d) and 39.509. No party requested a hearing.

Decisions regarding the order provisions issued under State authority may be reconsidered in response to a request only from the Applicant, the Executive Director, or the Public Interest Counsel, in accordance with the provisions of 30 TAC 55.156.

Preliminary Decision

General: The executive director has made a preliminary decision that this proposed PCO meets all the statutory and regulatory requirements.

Special: The proposed PCO does not authorize variances or alternatives to required standards.

Additional Information

- A. Technical information:

Scott D. Gronewald, Project Manager
Industrial and Hazardous Waste Permits Section
Waste Permits Division
Texas Commission on Environmental Quality
Mail Code MC 130
P. O. Box 13087
Austin, Texas 78711-3087
512/239-1049

TECHNICAL SUMMARY

Page 3

Sonny Rayos, Project Manager
Remediation Administrative Support Section
Remediation Division
Texas Commission on Environmental Quality
Mail Code MC 127
P. O. Box 13087
Austin, Texas 78711-3087
512/239-2371

B. Procedural and public hearing information:

Office of Public Interest Counsel
Texas Commission on Environmental Quality
Mail Code MC 103
P. O. Box 13087
Austin, Texas 78711-3087
512/239-6363

Prepared by:

Scott D. Gronewald
Project Manager
Industrial and Hazardous Waste Permits Section
Waste Permits Division

Compliance History

Customer/Respondent/Owner-Operator:	CN601670565 Texas Tank Car Works, Inc. of San Angelo, Texas	Classification: AVERAGE	Rating: 1.66
Regulated Entity:	RN103019444 TEXAS TANK CAR WORKS	Classification: HIGH	Site Rating: 0.00
ID Number(s):	INDUSTRIAL AND HAZARDOUS WASTE DISPOSAL	EPA ID	TXR000001388
	INDUSTRIAL AND HAZARDOUS WASTE DISPOSAL	ID NUMBER	83142
	INDUSTRIAL AND HAZARDOUS WASTE POST CLOSURE	ID NUMBER	PCO83142
	INDUSTRIAL AND HAZARDOUS WASTE POST CLOSURE	PERMIT	83142
	IHW CORRECTIVE ACTION	SOLID WASTE REGISTRATION # (SWR)	83142
	Location:	2021 E 28TH ST, SAN ANGELO, TX, 76903	Rating Date: September 01 07
TCEQ Region:	REGION 08 - SAN ANGELO		
Date Compliance History Prepared:	March 04, 2008		
Agency Decision Requiring Compliance History:	Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.		
Compliance Period:	August 05, 2000 to August 05, 2005		

TCEQ Staff Member to Contact for Additional Information Regarding this Compliance History

Name: SAIDAT ILO Phone: 512-239-6605

Site Compliance History Components

- | | |
|--|------------|
| 1. Has the site been in existence and/or operation for the full five year compliance period? | Yes |
| 2. Has there been a (known) change in ownership of the site during the compliance period? | No |
| 3. If Yes, who is the current owner? | <u>N/A</u> |
| 4. If Yes, who was/were the prior owner(s)? | <u>N/A</u> |
| 5. When did the change(s) in ownership occur? | <u>N/A</u> |

Components (Multimedia) for the Site :

- A. Final Enforcement Orders, court judgements, and consent decrees of the state of Texas and the federal government.
N/A
- B. Any criminal convictions of the state of Texas and the federal government.
N/A
- C. Chronic excessive emissions events.
N/A
- D. The approval dates of investigations. (CCEDS Inv. Track. No.)

1	03/15/2005	(350099)
2	05/09/2005	(378663)
3	06/16/2005	(395908)
- E. Written notices of violations (NOV). (CCEDS Inv. Track. No.)
- F. Environmental audits.
N/A
- G. Type of environmental management systems (EMSs).
N/A
- H. Voluntary on-site compliance assessment dates.
N/A
- I. Participation in a voluntary pollution reduction program.

N/A

J. Early compliance.

N/A

Sites Outside of Texas

N/A

GLOSSARY OF KEY TERMS

Alternative Corrective Action - Alternative Corrective Action requirements for groundwater may replace all or part of the requirements of §§335.157 - 335.166 (groundwater monitoring and corrective action for RCRA-permitted units) when releases from a RCRA-permitted unit are co-mingled with releases from one or more solid waste management unit SWMU or area of concern (AOC). The alternative corrective action requirements for the co-mingled release in groundwater: 1) must meet the requirements of the TRRP Rule because the TRRP Rule defines what is protective of human health and the environment; and 2) are set out in a permit or post-closure order.

Area of Concern (AOC) - An area of a facility potentially impacted by a release of hazardous waste or hazardous constituents but not a known solid waste management unit (SWMU).

Chemicals of Concern (COCs) - Any chemical that has the potential to adversely affect ecological or human receptors due to its concentration, distribution, and mode of toxicity.

Commercial/Industrial Land Use - Any real property not used for human habitation or for other purposes with a similar potential for human exposure as defined for residential land.

Control - To apply physical or institutional controls to prevent exposure to chemicals of concern. Control measures must be combined with appropriate maintenance, monitoring, and any necessary further response action to be protective of human health and the environment.

Corrective Action/Response Action - Any activity taken to comply with the TRRP Rule to remove, decontaminate and/or control COCs in excess of critical protective concentration levels (PCLs) in environmental media.

Hazardous Waste - Any solid waste identified or listed as a hazardous waste by the administrator of the EPA pursuant to the federal Solid Waste Disposal Act, as amended by RCRA.

Hazardous Waste Management Unit (HWMU) - A landfill, surface impoundment, waste pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or land treatment unit, or other structure, vessel, appurtenance, or other improvement on land used to manage hazardous waste.

Institutional Control (IC) - Action taken to help prevent contact with hazardous constituents, such as security fencing, restrictive covenants, zoning requirements, access restrictions, deed notice.

Interim Measure (IM) - Action taken prior to a final remedy decision to help control the spread of a release of hazardous waste or hazardous constituents.

Plume Management Zone - Response action option under Remedy Standard B of the TRRP Rule, where the responsible party proposes to remove, decontaminate and/or control contaminated groundwater so that the COC concentrations are protective of human and ecological receptors, as

applicable, at a downgradient point (known as an alternate point of exposure).

Protective Concentration Level (PCL) - The concentration of a COC which can remain within the air, water, or soil and still be protective of human and ecological receptors.

Protective Concentration Level Exceedence (PCLE) Zone - Area of environmental contamination containing COC concentrations subject to TRRP Rule corrective action/response action.

RCRA - Resource Conservation and Recovery Act, which was enacted by the United States Congress in 1976 and amended in 1984, directed EPA to develop and implement a program to protect human health and the environment from improper hazardous waste management practices. The statute is designed to control the management of hazardous waste from its generation to its disposal. The Texas equivalent is the Texas Solid Waste Disposal Act, Texas Health and Safety Code, Chapter 361.

RCRA Facility Investigation (RFI) - An investigation required under RCRA to sample and analyze potentially impacted media (e.g., air, water, soil, sediment) to determine the nature and extent of any potential releases of hazardous waste or hazardous constituents at or from a facility into the environment.

RCRA-Permitted Unit - A hazardous waste management unit (HWMU) which is permitted under Chapter 335, Subchapter F to treat, store, or dispose of hazardous waste.

Remediation - The act of eliminating or reducing the concentration of COC in the environment.

Response Action Plan (RAP) - A plan required under the TRRP Rule proposing to remove, decontaminate and/or control COCs determined to pose an unacceptable risk to human health and the environment.

Solid Waste Management Unit (SWMU) - Includes any unit used for the collection, storage, transportation, transfer, processing, treatment or disposal of solid waste, including hazardous wastes, whether such unit is associated with facilities generating such wastes or otherwise.

Texas Risk Reduction Program (TRRP) Rule - Regulates the assessment and cleanup of hazardous wastes and substances, referred to as COCs, which are released into the environment from regulated commercial and industrial facilities, and on the closure of waste management facility components (e.g., tanks, container storage areas, surface impoundments).