

SOAH DOCKET NO. 582-08-0202  
TCEQ DOCKET NO. 2007-1426-MWD

IN THE MATTER OF THE	§	BEFORE THE STATE OFFICE
APPLICATION OF HAYS COUNTY	§	
WATER CONTROL AND	§	OF
IMPROVEMENT DISTRICT NO. 1	§	
FOR AMENDMENT TO TPDES	§	
PERMIT NO. WQ0014293001	§	ADMINISTRATIVE HEARINGS

**FULL AND FINAL SETTLEMENT AGREEMENT**

This Agreement is entered into by and among the parties on the following terms and conditions:

**I.**  
**DEFINITIONS**

As used in this Agreement, the following terms have the assigned meanings:

- A. The “Agreement” means this Full and Final Settlement Agreement.
- B. The “Draft Permit” means the Draft Permit issued by the Texas Commission on Environmental Quality (“TCEQ”) on November 26, 2007, Permit No. WQ0014293001.
- C. The “Applicant” means Hays County Water Control & Improvement District No. 1.
- D. The “Permit” means Permit No. WQ0014293001 as amended, modified, or renewed by TCEQ and its successor agencies.
- E. “Protestants” means any party who has filed a contest, protest, or appeal with regard to the Draft Permit and includes, but is not limited to, the following:

- City of Austin
- Lower Colorado River Authority
- Barton Springs/Edwards Aquifer Conservation District
- Hays County

City of Dripping Springs  
Hays Trinity Groundwater Conservation District  
Bear Creek Property Owners Association  
Hays Community Action Network  
Save Our Springs Alliance  
Joel Stearns  
Kim Stearns  
Alston Boyd  
Barbara Boyd  
Owen Kinney  
Daryl Howard  
Robert O'Boyle  
Barbara Stroud  
The Davis Family Properties, Ltd.  
Charles O'Dell  
Robert D. Hejl  
Radiance Water Supply Corp.  
Sam Cobb  
Tara Weaver  
Charles Jones  
Gregg Brown

F. The "Executive Director" means the Executive Director of the TCEQ, along with all staff and attorneys of the Executive Director.

G. The "OPIC" means the Office of Public Interest Counsel of the TCEQ.

H. The "Parties" means the Applicant, all Protestants, OPIC, and the Executive Director.

I. The "effective date of this agreement" means \_\_\_\_\_, 2008.

J. The "Interim II Phase" means the Interim II Phase defined in the Draft Permit, as amended by this Agreement.

K. The "Final Phase" means the Final Phase defined in the Draft Permit, as amended by this Agreement.

**II.**  
**RECITALS**

WHEREAS, Applicant has applied for an amended wastewater discharge permit from TCEQ under Permit Number WQ0014293001;

WHEREAS, the Draft Permit was issued on or about November 26, 2007 by TCEQ;

WHEREAS, each of the Protestants opposed the Draft Permit and requested a contested case hearing;

WHEREAS, urbanization in Hays County poses both a potential benefit and risk to the citizens of Hays County and, therefore, must be managed as rationally as possible;

WHEREAS, the Protestants expressed concerns regarding the water quality effects and the related impacts on the ecology of the surface water and groundwater of the proposed discharge, which would be the first domestic wastewater discharge in the contributing zone of the Barton Springs Segment of the Edwards Aquifer;

WHEREAS, the Protestants are concerned that the Applicant's discharge of effluent to Bear Creek will be in excess of the amount that the Applicant can beneficially reuse and the Parties recognize some of these discharges may occur when Bear Creek is under low flow conditions;

WHEREAS, upon the request of Applicant, TCEQ made a direct referral of this case to the State Office of Administrative Hearings ("SOAH") and the Honorable Administrative Law Judge Roy Scudday was assigned;

WHEREAS, the Executive Director and OPIC were also parties to the contested case hearing;

WHEREAS, the Parties have reached a compromise settlement agreement in lieu of proceeding with the contested case hearing; and

WHEREAS, the Parties have agreed to conduct an instream monitoring program to assure the protection of water quality intended by the settlement Agreement.

### **III. THE AGREEMENT**

The Parties agree as follows:

1. Purpose and Goal of Agreement: The Parties agree that the purpose and goal of this Agreement is to protect the water quality of Bear Creek, the Barton Springs Segment of the Edwards Aquifer, and the Trinity Aquifer from adverse impacts from the Applicant's wastewater treatment facility.

2. The Permit: The Parties agree that a wastewater discharge permit be issued to Applicant by TCEQ under the following terms and conditions, which shall be included in the permit:

A. All wastewater will be treated in Interim II and Final Phase using membrane bioreactor technology with denitrification to meet the discharge effluent limits of the Permit;

B. The Interim II Phase and Final Phase effluent limitations and monitoring requirements shall be as described in the Draft Permit with the addition of a total nitrogen limit of 6.0 mg/L, daily average. The total nitrogen limit shall only apply when Applicant is discharging to waters of the State. Total Nitrogen will be monitored, at least weekly, when discharging to waters of the State.

C. Applicant shall continue to dispose of 150,000 gallons per day of treated effluent via subsurface drip irrigation either under the existing land application

authorization or pursuant to a Chapter 210 Beneficial Reuse Authorization and continue to use the moisture monitoring plan associated with existing drip irrigation field;

D. Applicant shall apply for a Chapter 210 Beneficial Reuse Authorization. Applicant will phase in the number of acres irrigated with treated wastewater and, prior to reaching capacity of the Final Phase, as described in the Permit, Applicant shall irrigate at least 201 acres with treated wastewater. Throughout the phase-in of acres irrigated, Applicant shall use sufficient irrigable land to apply effluent that is being generated at all times at a rate no higher than the rate required for applying the 350,000 gallons per day on 201 acres without causing or resulting in runoff from the irrigation acreage. Applicant shall install soil moisture monitors where necessary to determine soil saturation of those irrigation areas immediately adjacent to the creek's buffer zone in order to determine when irrigation areas are unsuitable for effluent irrigation. The amount and location of the soil moisture monitors shall be determined by the Applicant.

E. Applicant shall build and maintain a lined effluent storage pond with a capacity of at least 5,250,000 gallons, exclusive of required freeboard;

F. The daily discharge shall not exceed 350,000 gallons per day. Applicant shall only discharge treated effluent into Bear Creek if:

1. the land to be surface irrigated (as described in Paragraph III.2.D above) is frozen or saturated and the effluent storage pond is full; or
2. when Bear Creek is flowing at a rate of at least 14 cfs measured at the USGS gauge on Bear Creek. For purposes of this subparagraph (III.2.F.2), Bear Creek shall be deemed to be flowing at or above 14 cfs for 24 hours

following any point in time when the USGS gauge (08158810) reads 14 cfs or higher.

G. Applicant's wastewater treatment facility shall not serve any facilities outside of the physical boundaries of Hays County Water Control and Improvement District No. 1 and Hays County Water Control and Improvement District No. 2, as they existed on April 12, 2007 and shown in Exhibit A. This is to ensure that the plant is not utilized as a regional facility;

H. During the Interim II Phase and Final Phases, the wastewater treatment plant shall be operated at all times by an operator holding a "Category A" wastewater operator license;

I. A study of instream conditions shall be conducted in accordance with the Workplan, attached as Exhibit B;

J. Applicant shall use ultraviolet light disinfection in accordance with TCEQ requirements and in lieu of chlorination, but if a better disinfection technology becomes available and is agreed to by Applicant, by representatives of Protestants, and by TCEQ, the alternate technology can be employed; and

K. If any of these provisions cannot be included in the Permit due to TCEQ limitations, the Applicant still agrees to abide by those provisions and all of the terms of this Agreement.

3. Additional Provisions Not Required to be in the Permit:

A. In-Stream Monitoring:

1. Background conditions: Instream monitoring for determining background conditions will occur on a monthly basis beginning within 60 days of

Permit issuance and for at least one year prior to the commencement of the first discharge. This period will be considered the pre-discharge background period. Applicant will be responsible for monitoring during the first eighteen (18) months of the pre-discharge background period. Monitoring may be continued thereafter by representatives of the Protestants during this period. Direct discharge of any effluent terminates the background period.

2. Post-discharge monitoring: Post-discharge instream monitoring will commence after the first discharge of effluent into the creek by the Applicant. Applicant will be responsible for monitoring during the first eighteen (18) months of the post-discharge background period. Monitoring will be continued thereafter by representatives of the Protestants at their own cost.

3. Nothing in III.3.A.1 or 2 should be construed as limiting the Protestants' ability to monitor at any time at their own cost.

4. Instream monitoring shall be conducted in accordance with the Workplan attached as Exhibit B.

5. Interpretation of the results from instream monitoring shall be governed by the Workplan, attached as Exhibit B.

B. Remedies:

1. If, on the basis of the interpretation of the instream monitoring as provided for in Exhibit B, the Workplan, significant differences (triggers) are caused by the Applicant's discharge of treated effluent, then Applicant within 180 days of notification shall:

a. commence construction of and complete within a reasonable amount of time at least 1,750,000 gallons of additional effluent storage capacity; or

b. employ other measures to decrease the volume of effluent to be discharged to the creek on a continuing basis with the demonstrably equivalent effect of increasing storage by 1,750,000 gallons of effluent.

2. The Applicant's duty to implement one or more remedies begins after the first discharge of any amount of effluent into the creek and continues for fifteen (15) years.

3. For purposes of this section, "the first discharge" shall mean the first discharge of effluent to the creek that is necessary due to saturated irrigation acreage (which includes subsurface drip irrigation and Chapter 210 acreage as defined by TCEQ) and the effluent storage pond is at capacity.

C. Applicant shall equip all lift stations receiving untreated effluent with automatic-on standby generator power.

D. Applicant shall utilize an overflow pond or other equivalent holding device to handle any untreated or partially treated effluent. No partially treated effluent shall be discharged to Bear Creek.

E. Notwithstanding the language of the Permit, which states "Discharge limitations and monitoring requirements apply only when discharging to waters in the State", the Parties agree that all wastewater shall be treated using the membrane bioreactor technology and denitrification. The Applicant shall conduct weekly sampling for Total Nitrogen and turbidity in the effluent to determine the effectiveness and



performance of the wastewater treatment plant. These monitoring data are to confirm plant performance and shall be provided to designated representatives of the Protestants on a monthly basis. .

4. Approval By Governing Bodies: This Agreement is subject to the approvals of the governmental or quasi-governmental entities that are parties to this Agreement. The deadline for obtaining all necessary approvals shall be June 24, 2008. Any party may terminate this Agreement by written notice to the other parties, delivered by noon on the day following the approval deadline.

5. Approval By ALJ and TCEQ: Within five (5) business days after the final approval by all Parties (and applicable governing bodies), the Parties will file a joint Motion for Remand to the Executive Director with a recommendation that the Permit be issued in accordance with this Agreement. In the event that the terms and conditions of Paragraph III.2 (the Permit) conflict with the Draft Permit, the terms and conditions of Paragraph III.2 shall control.

6. Within five (5) business days after the final approval by all Parties (and applicable governing bodies), all Protestants agree to withdraw protests and requests for hearing in SOAH Docket No. 582-08-0202.

7. Costs and Attorneys, Fees: Each party to this Contested Case Hearing shall bear its own attorneys' fees, court costs, and expenses; no party to this Agreement shall have any liability to pay any other party's fees or expenses.

8. Notices: Any notice required or permitted to be delivered under this Agreement shall be forwarded via hand delivery or the United States Postal Service, postage prepaid, to the addresses shown below:

On behalf of the Applicant, HCWCID No. 1:  
Andrew N. Barrett  
Barrett & Smith  
505 West 14<sup>th</sup> Street  
Austin, TX 78701

On behalf of the City of Austin:  
City Attorney  
RE: TM #38787  
301 West 2nd Street, Box 1088  
Austin, TX 78767

On behalf of the LCRA:  
Vic Ramirez  
LCRA  
PO Box 220  
Austin, TX 78767-0220

On behalf of BSEACD:  
Kirk Holland, General Manager  
Barton Springs/Edwards Aquifer Conservation District  
1124 Regal Row  
Austin, TX 78748

On behalf of Hays County:  
David Frederick  
Lowerre, Frederick, Perales & Allmon  
44 East Avenue, Suite 101  
Austin, TX 78701

On behalf of the City of Dripping Springs:  
Alan J. Bojorquez  
City Attorney, City of Dripping Springs  
12325 Hymeadow Drive, Ste. 2-100  
Austin, TX 78750

On behalf of Hays Trinity Groundwater Conservation District:  
Andrew Backus  
16204 Hidden Springs Lane  
Austin, TX 78737

On behalf of Save Our Springs Alliance:  
Bill Bunch, Executive Director  
PO Box 684881  
Austin, TX 78768

On behalf of the Davis Family Properties, Ltd.:  
Fred B. Werkenthin, Jr.  
Booth, Ahrens & Werkenthin, PC  
515 Congress Avenue, Suite 1515  
Austin, TX 78701

On behalf of the Executive Director:  
Kathy Humphreys  
TCEQ, MC 175  
PO Box 13087  
Austin, TX 78711-3087

On behalf of the OPIC:  
Christina Mann  
TCEQ, MC 103  
Office of Public Interest Counsel  
PO Box 13087  
Austin, TX 78711-3087

9. Applicant agrees to notify designated representatives of the landowner Protestants and the governmental entity Protestants of any prospective, proposed, or requested change in the Permit specifications, including but not limited to term period, effluent limitations, other restrictions, plant and storage performance, and effluent and stream monitoring program including results.

10. Applicant agrees to notify designated representatives of the landowner Protestants and the governmental entity Protestants of scheduled dates of sampling based on the Workplan, Exhibit B.

11. Both the terms of the Permit and the terms of this Agreement are binding upon and will inure to the benefit of the Parties and their respective successors and assigns. Applicant shall notify designated representatives of the landowner Protestants and the governmental entity Protestants of any transfer or change in control or ownership of facilities authorized by the Permit.

12. This Agreement may be executed in multiple originals either copy of which shall be considered an original.

13. Where this Agreement calls for agreement of the Parties or their representatives, agreement shall not be unreasonably withheld.

14. Upon written request of the City of Austin, the Applicant shall provide to the City of Austin Discharge Monitoring Reports when the same are provided to TCEQ.

#### IV.

#### **ENFORCEMENT OF THE AGREEMENT**

1. Notice and Opportunity to Cure. Notwithstanding any provision in this Agreement to the contrary, if either party (referred to herein as the “Defaulting Party”) fails to comply with its obligations under this Agreement or is otherwise in breach or default under this Agreement (collectively, a “Default”), then the other party (referred to herein as the “Non-Defaulting Party”) shall not have any right to invoke any rights or remedies with respect to any Default until and unless: (i) the Non-Defaulting Party delivers to the Defaulting Party a written notice (the “Default Notice”) that specifies all of the particulars of the Default and specifies the actions necessary to cure the Default; and (ii) the Defaulting Party fails to commence the cure of any matters specified in the Default Notice within a reasonable period of time after the Defaulting Party’s receipt of the Default Notice, but not less than 30 days, or fails to thereafter pursue curative action with reasonable diligence to completion.

2. Remedies. If any Party fails to comply with its obligations under this Agreement or fails to correct any default after notice and opportunity to cure, the other Party may exercise any remedy authorized at law or in equity, including termination or filing suit in a court of competent jurisdiction to seek any available remedy, including by way of example only,

injunctive relief, specific performance and/or monetary damages. The prevailing party to the litigation may recover costs of court, attorney's fees and expert consultant and witness fees incurred in enforcing or defending a claim under this Agreement.

3. Venue: Venue for any suit arising under this Agreement is in Travis County or Hays County.

SIGNED and AGREED, subject to approval by the governing bodies of each Party as applicable, this \_\_\_\_\_ day of June, 2008.

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Authorized Representative of Hays County  
Water Control and Improvement District No. 1

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Ray Chester  
Attorney for Hays County Water Control and  
Improvement District No. 1

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Authorized Representative of the City of Austin

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Patricia L. Link  
Assistant City Attorney  
Attorney for Protestant City of Austin

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Authorized Representative of the  
Lower Colorado River Authority

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Vic Ramirez  
Associate General Counsel  
Attorney for Protestant LCRA

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Authorized Representative of Barton  
Springs/Edwards Aquifer Conservation District

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William D. Dugat, III  
Attorney for Barton Springs/Edwards Aquifer  
Conservation District

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Authorized Representative of Hays County

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David O. Frederick  
Attorney for Hays County

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Authorized Representative of the City of  
Dripping Springs

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Susan Zachos  
Attorney for the City of Dripping Springs

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Andrew Backus  
Authorized Representative of Hays Trinity  
Groundwater Conservation District

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Sarah Baker  
Authorized Representative of Save Our  
Springs Alliance

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Authorized Representative of The Davis  
Family Properties, Ltd.

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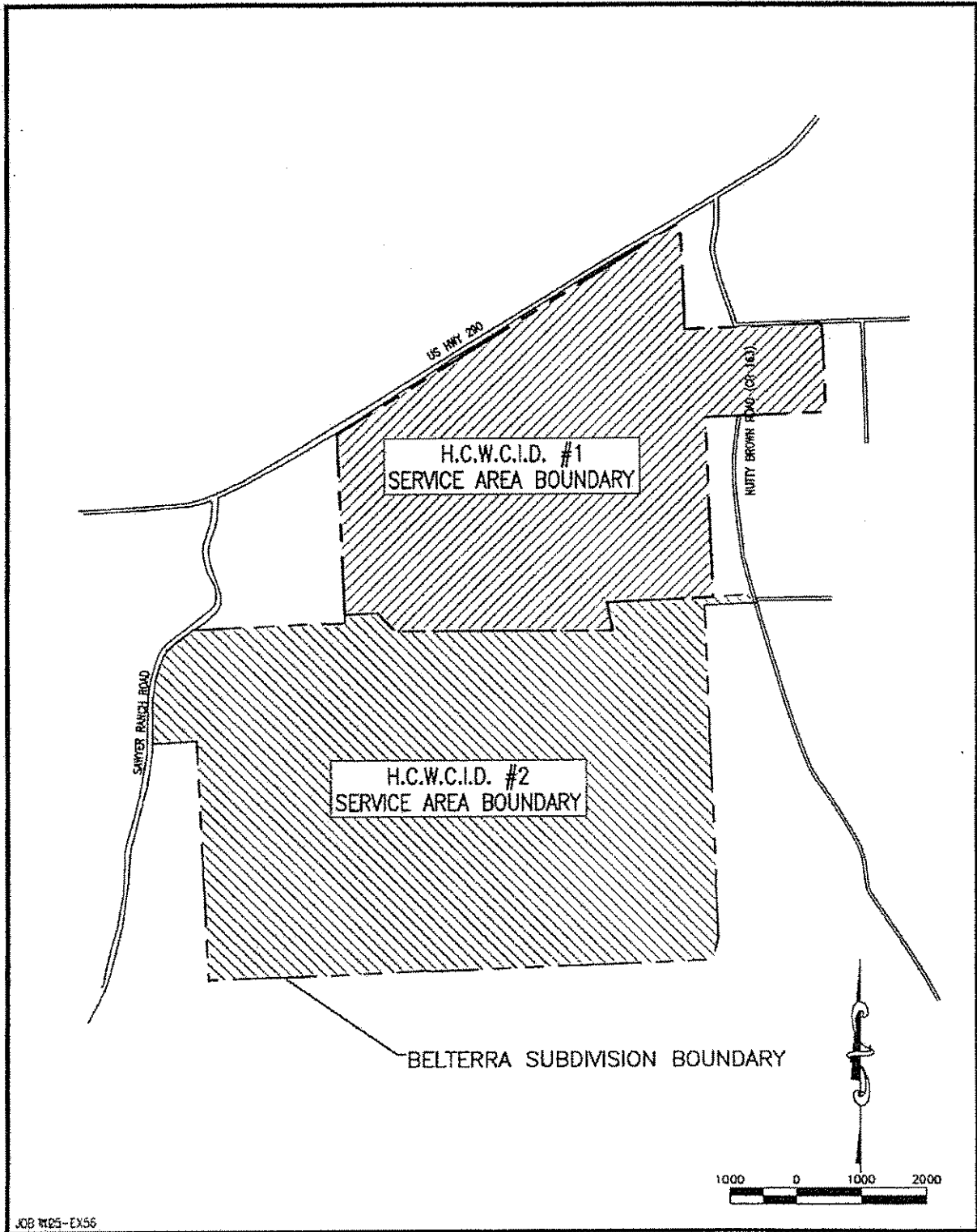
Fred Werkenthin  
Attorney for Protestant The Davis Family  
Properties, Ltd.

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Kathy Humphries  
Authorized Representative of the  
Executive Director

---

Christina Mann  
Authorized Representative of the Office of  
Public Counsel



JOB #125-EX56

CMA ENGINEERING, INC.  
 14101 WEST HIGHWAY 290  
 BUILDING 600  
 AUSTIN, TEXAS 78737  
 (512) 894-3230 Fax: (512) 894-3225

HAYS COUNTY WCID NO.1 & 2  
 BOUNDARY MAP

1

EXHIBIT  
 tabbles  
 A



## ATTACHMENT WORKPLAN

### **Purpose:**

The purpose of the monitoring study is to determine whether nutrient limitations and management of irrigation storage versus discharge from the HCWCID1 WWTP will prevent the growth of excessive algae and aquatic vegetation in receiving waters as provided by Texas Commission on Environmental Quality (TCEQ) regulations at 30 TAC 307.4(e). The study includes triggers from the monitoring data to determine whether the Settlement Agreement remedies must be instituted.

### **Procedures:**

The permittee and the settling parties or their designated representative shall prepare a Quality Assurance Project Plan (QAPP) including sampling and analysis protocols. Once the QAPP has been approved by the permittee and the settling parties or their designated representatives, the permittee, at permittee's expense, shall conduct the monitoring study according to the QAPP.

### **Changes in Scope:**

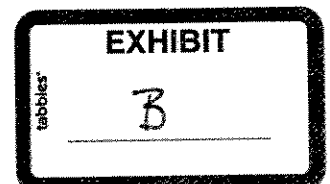
Changes may be made to the QAPP upon approval of the permittee and settlement parties to address changes in objectives determined necessary or appropriate as site-specific information becomes available. This includes the elimination of data collection activities if it can be demonstrated that the additional effort will not significantly improve the value of the study. These changes may also include additional parameters if found necessary from TCEQ studies on transport of nutrients in the Barton Springs segment of the Edwards aquifer or changes in triggers or covariates necessary due to changing watershed conditions.

### **Study Scope:**

The monitoring study will evaluate Bear Creek from the Belterra property boundary to a point just upstream of the Barton Springs segment of the Edwards Aquifer recharge zone boundary using two primary locations in addition to the wastewater outfall. The study will include field data collection and laboratory analysis capable of determining if the discharge is degrading Bear Creek by increasing algae growth due to effluent nutrients. Impacts from intermittent discharge are inherently difficult to adequately determine; therefore, the study analysis incorporates statistics to reflect the overall change in distribution of data and the biological significance of such changes.

### **Field Data Collection:**

Field data collection and monitoring activities are to be conducted in accordance with the Guidance for Assessing Texas Surface and Finished Drinking Water Quality Data (TCEQ 2004) and the Surface Water Quality Monitoring Procedures Manual (TCEQ 2005). Monitoring locations will be identified by map in the QAPP. The sampling design and monitoring schedule is indicated in Table 1.



**Table 1 – Sampling Design and Monitoring Schedule**

	Monitoring Parameter	Location	Frequency	Trigger Locations	Notes
1	Diel dissolved oxygen (Avg, Range)	Davis Pond	Continuous	Davis Pond	Sondes serviced and redeployed monthly
2	Continuous Chl. A (ug/L, Turner probe)	Davis Pond	Continuous	Davis Pond	Sondes serviced and redeployed monthly
3	Benthic Periphyton (mg/ m2)	Above Davis riffle	Monthly Grab	Above Davis Riffle	USGS NAWQ protocol
4	Macroalgae percent cover (transects)	Above Davis riffle	Monthly Grab	Above Davis Riffle	USGS NAWQ protocol
5	Chlorophyll a (mg/L, water column)	Davis pond	Monthly Grab	N/A	Sampled monthly during baseflow on a priori schedule
6	NH3-N	Both sites	Monthly Grab	N/A	Sampled monthly during baseflow on a priori schedule
7	NO3-N	Both sites	Monthly Grab	Above Davis Riffle	Sampled monthly during baseflow on a priori schedule
8	TKN	Both sites	Monthly Grab	N/A	Sampled monthly during baseflow on a priori schedule
9	OP	Both sites	Monthly Grab	N/A	Sampled monthly during baseflow on a priori schedule
10	TP	All three sites	Monthly Grab	Above Davis Riffle	Sampled monthly during baseflow on a priori schedule
	Shade = Trigger variables required to be monitored by HCWCID1 as part of this settlement agreement. Other parameters are used for interpretation only				

*Algal Monitoring*

Free floating algae in the water column algae (phytoplankton) will be evaluated by non-filtered chlorophyll-a sampled from the water column. Benthic algae density estimates will be obtained at each sampling station in the receiving stream, using two components. The first component will be benthic algae density by measurement of chlorophyll-a from instream rock scrapings and laboratory analysis. This method is a standard procedure used by USGS in NAWQA sampling and will be reported as mg/m<sup>2</sup>. The second component will involve the establishment of a permanent transect at each site, which will be visually examined during each sampling visit to generate an estimate of macroalgae density on the streambed. Using a tape measure, the portion of transect occupied by macroalgae will be divided by the total width of the transect to derive a percent coverage estimate.

**Laboratory Analysis:**

Standard operating procedures for laboratory analysis are available at the contract laboratory selected for this monitoring. Methods for laboratory analyses shall be consistent with TCEQ acceptable standard methods.

## Data Interpretation:

The interpretation will be based on statistical comparison between pre-discharge and post-discharge values and ecologically relevant criteria for algae impacts and nutrient concentrations. Variables for triggers and calculations are specified by site including two sites: Riffle above Davis Pond, and Davis Pond. If any of the triggers by site are met the overall trigger for remediation is assumed to be met on an annual reporting interval. Under these conditions, data verification by technical representatives of parties will be made before submitting the annual report three months after the end of the annual monitoring period. If the data indicating the overall trigger is met is found to be adequate without mitigating circumstances then remedies will be initiated in accordance with the settlement agreement. If the trigger is found to be an anomalous event, monitoring will continue according to the workplan. If the parties' technical representatives disagree on the validity of the trigger, the issue will be submitted to mediation.

Analysis methods include Analysis of Variance with covariates (ANCOVA) and Chi-Square Tests. The significance level will be  $\alpha = 0.05$ . A minimum of 8 samples is needed for analysis. Reanalysis will occur after 6 months to one year. Reporting is done annually. Baseflow is considered to be flow with three prior days of no rainfall over 0.1 inches.

Trend analysis will be performed on background monitoring period data to determine if non discharge conditions are changing. If regression analyses indicate statistically significant trends are occurring before any discharge, these results will be considered by parameter in the other analysis comparisons evaluated for trigger conditions to be met. All data will be adjusted by the subtracting the size of expected increase for the date of the sample from the sample concentrations. This will partially compensate for any non-point source increases in the watershed that influence the data. Any additional compensation for non-point source discharge increases in data analysis will be considered through mediation. In addition dissolved oxygen levels were included on the basis that they will be impacted by nutrient values in the intermittent discharge and are ecologically relevant in Davis Pond .

## Action Trigger Dynamics

For any one of the two sites, a combination of two triggers must be met, with the following specifications:

**Riffle above Davis Pond** – Total phosphorus OR NO<sub>3</sub>-N OR chlorophyll a from scrapings OR percent cover of macro algae from transects.

**Davis Pond** – Both water column Chl. a AND dissolved oxygen criteria.

### Riffle above Davis Pond

Trigger variables: TP, NO<sub>3</sub>-N, Chlorophyll a (benthic scrapings), percent cover of macro algae (transects)

#### TP/NO<sub>3</sub>-N

Test for significance: ANCOVA on means before and after. Covariates = flow and water temperature

#### TP Trigger :

Significant increase in baseflow TP and TP is 3 times higher than background baseflow AND TP > 0.025 mg/L (mesotrophic boundary in streams).

#### NO<sub>3</sub>-N Trigger :

Significant increase in baseflow NO<sub>3</sub>-N and NO<sub>3</sub>-N is 2 times higher than background baseflow and NO<sub>3</sub>-N > 0.7 mg/L (mesotrophic boundary in streams).

### ***Chlorophyll a (benthic scraping)***

Test for significance: ANCOVA on means before and after. Covariates = flow and water temperature.

Chi square test for the percent of the samples which fall in the higher trophic level than background (i.e. from Oligotrophic to Mesotrophic > 30 mg/m<sup>2</sup>, and >90mg/m<sup>2</sup> for Mesotrophic to Eutrophic, Dodds et al 1998).

Chlorophyll a Trigger: significant increase and significant change in trophic status.

Percent cover of macro algae (transects).

Test for significance: ANCOVA on means before and after. Covariates = flow and water temperature.

Algae Cover Trigger: significant difference and mean increases by 35%.

### **Davis Pond**

Trigger variables: DO, Chlorophyll a (water column).

***Chlorophyll a*** (water column) (Datasonde).

Test for significance: ANCOVA on means before and after. Covariates = flow and water temperature.

Chi square test for the percent of the samples which fall in the Oligotrophic category before and after (< 4 ug/L is Oligotrophic, 4 – 10 mesotrophic, 10-25 eutrophic, Olem 1990)

Chlorophyll a Trigger: significant increase and significant change in percent which are oligotrophic.

### ***DO (mean, range) – daily (datasonde)***

Test for significance: ANCOVA on means before and after. Covariates = flow and water temperature

DO Triggers (any of the three):

mean: The mean DO after discharges begin is less than 5 mg/L and is significantly different from the mean DO before discharges began.

DO events: Significant change in number of episodes when DO is <2 mg/L for more than 8 hours out of a 24-hour day.

### **Reporting:**

Annual written reports will be provided to the parties to the settlement agreement including raw data, statistical analyses, and results of trigger comparisons. Data will be available to parties of the settlement agreement at any time upon request.