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January 20, 2016

Mr. Earl Lott - Director
Waste Permits Division – MC 124
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Re: Pescadito Environmental Resource Center - Webb County
Municipal Solid Waste (MSW) Permit Application No. 2374
Permit Application – Clarifications to Second Technical Notice of Deficiency (NOD)
Tracking Nos. 14669041(19666994); CN603835489/RN106119639

Dear Mr. Lott;

CB&I Environmental and Infrastructure, Inc. (CB&I) is in receipt of an e-mail dated December 10, 2015 from Mr. Mamadou Balde P.G. with the Texas Commission on Environmental Quality (TCEQ) requesting additional information regarding the referenced application. We appreciate the opportunity to meet on January 8, 2016 to discuss the e-mail comments and to assist in completing the TCEQ's review of the application. This letter response contains information discussed at that meeting as well as our proposed revisions to the application. In an attempt to make the application abundantly clear on the issues we discussed, we have made additional changes from what was contained in the e-mail.

Our response is formatted as follows:

- Attachment A contains a revised signature page from the Part 1 form and a revised page 13 of the Master Table of Contents.
- Attachment B contains the original version of the changed pages.
- Attachment C contains a redline version of the changed pages.
- Attachment D contains three (3) copies of the original changed pages found in Attachment B.

We have listed the comment request below followed by our response in italics. Where appropriate, additional information is presented based on our meeting.

PART III

Attachment III-F – Appendix III-F.1 (*Comment is provided by Mamadou Balde, P.G.*)

1. The presence of groundwater in Layer IV as demonstrated by the observed static water level for the screened intervals of 60 to 113 feet (*Attachment III-E.2, Figure 21: Deep*

Water Contour Map) does not support the submitted model of site hydrology (Appendix III-E.2, {SIC Attachment III-E} Section 2.4) where the aquiclude is shown at 60 feet depth. It appears that the regulated uppermost aquifer extends downward at least several feet below the deepest excavation of about 100 feet. To ensure that all potential contaminant migration pathways are monitored in accordance with §330.403(a) and §330.403(e)(1), please reconsider the proposed depth of the groundwater monitoring wells as well as the monitored interval (Drawing III F.1-2). Please be aware that per §330.421(a)(2)(C), the 100-foot filter pack shown in Drawing III F.1-2 may not be considered as the monitored interval since the screen is limited to only the wells' bottom 10 to 20 feet.

RESPONSE:

As discussed in the meeting of January 8 and presented in the application, there is no groundwater at the site that meets the TCEQ's definition at 30TAC330.3(61) except in the very deep basal sands of the Yegua. There is shallow subsurface water which we have included in the landfill design and monitoring programs.

The model (graphical representation) and text in Attachment III-E are supported by information provided in Appendix III-E.2. In particular, the water level contours shown on the Deep Water Contour Map (Figures 21 and 23 in Appendix III-E.2) along with the Shallow Water Contour Map (Figures 20 and 22) illustrate that there is a piezometric elevation difference between the 0 to 60-foot interval and the deeper section (Deep Water Contours being higher than the Shallow Water Contours) and confirms the presence of a confining layer below 60-feet. This has previously been discussed in Section 2.3 of Attachment III-E. Additional text has been included in Section 2.4 of Attachment III-E to further illustrate this. Although the clays in the upper 60-feet contain confining layer properties due to their low permeability, the contour maps discussed above are based on piezometers screened above 60-feet and those screened below. This is consistent with information provided in the Soil Boring Plan approved by the TCEQ on April 21, 2011. At the TCEQ's request Figure 2 in Attachment III-E "Geology Report" has been revised to indicate that the 60-feet to the aquiclude is approximate and the title has been revised to indicate a "Generalized Conceptual Representation of Site Hydrology".

As clearly shown in the application and as stated above, there is a confining layer below 60-feet; thereby separating the "Regulated Uppermost Aquifer" as defined in the application (0 to 60 feet below ground surface) from the deeper soils. The fact that there is some limited amount of water in the soils below 60-feet does not preclude that interval from being an aquiclude (See Federal definition as provided in the text on page 6 of Attachment III-E).

"Aquiclude - a hydrogeologic unit which, although porous and capable of storing water, does not transmit it at rates sufficient to furnish an appreciable

supply for a well or spring (after WMO, 1974). See preferred term confining unit." From the U.S. Geologic Survey, Federal Glossary Of Selected Terms, Subsurface-Water Flow and Solute Transport (USGS, 1989).

Per your request, we have reviewed the depth of the proposed groundwater monitoring wells and have found them to be to the appropriate depth. Additionally, we have modified the text in Attachment III-F and Drawing III-F.1-2 in Appendix III-F.1 to show the monitor well screen to extend from the bottom of the excavation to within a few feet of the surface; thereby creating a screened (monitored) interval the full depth of the well. It has always been part of the application to monitor the full depth of the monitoring well. Based on our meeting, providing a screen as well as a filter pack for the full depth addresses your concerns.

A revised Cover Page, Table of Contents and pages 5 and 9 of Attachment III-F are attached. A revised Cover Page, Table of Contents and Drawing III-F.1-2 of Appendix III-F.1 are attached. A revised Cover Page, Table of Contents and pages 9 through 11 of Attachment III-E are attached.

The information provided in this response has also been sent to the Laredo Public Library and uploaded to the web site at www.pescaditoerc.com. We trust this information addresses your current concerns; however, should you need additional information, please let us know.

Sincerely,

CB&I Environmental and Infrastructure, Inc.

TBPE Firm F-5650



Michael W. Oden, P.E.

Project Manager

Attachments

- A - Part 1 Form Signature Page
- B - Original Replacement pages
- C - Redline/Strikeout version of changed pages
- D - Three copies of changed pages (TCEQ only)

CC: Mr. Carlos Y. Benavides III
Mr. William W. Thompson
Mr. Geoffrey S. Connor

Attachment A
to January 2016 Response Letter

Part I Form Signature Page and
Page 13 of Master Table of Contents

Signature Page

I, Carlos Y. BENAVIDES III MANAGER
(Site Operator (Permittee/Registrant)'s Authorized Signatory) (Title) Jan 22, 2016

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

Signature: CYBENAVIDES III Date: Jan 22, 2016

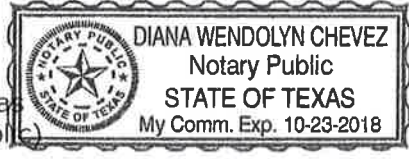
~~TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR~~
I, _____, hereby designate _____
(Print or Type Operator Name) (Print or Type Representative Name)
as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

Printed or Typed Name of Operator or Principal Executive Officer

Signature

SUBSCRIBED AND SWORN to before me by the said Carlos Y. Benaides III
On this 22nd day of January, 2016
My commission expires on the 23rd day of October, 2018

Diana W. Chevez
Notary Public in and for _____
Leeds County, Texas
(Note: Application Must Bear Signature & Seal of Notary Public)



Pescadito Environmental Resource Center
MSW No. 2374
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Attachment B
to January 2016 Response Letter

Original Replacement Pages

Part III, Attachment III-E

**Part III
Attachment III-E**

GEOLOGY REPORT

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
Revised September 2015
Revised November 2015
Revised January 2016**


**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
CB&I Environmental and
Infrastructure, Inc.**



**12005 Ford Rd, Suite 600
Dallas, TX 75234**

1-20-2016



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The seal is circular with a double-line border. The outer ring contains the text "STATE OF TEXAS" at the top and "REGISTERED PROFESSIONAL ENGINEER" at the bottom, separated by stars. The center of the seal features a five-pointed star. Below the star, the name "MICHAEL W. ODEN" and the number "67165" are printed. A handwritten signature in blue ink is written across the bottom of the seal.

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Appendix III-E.5 Supplemental Subsurface Investigation Report – Phase V

1-20-2016



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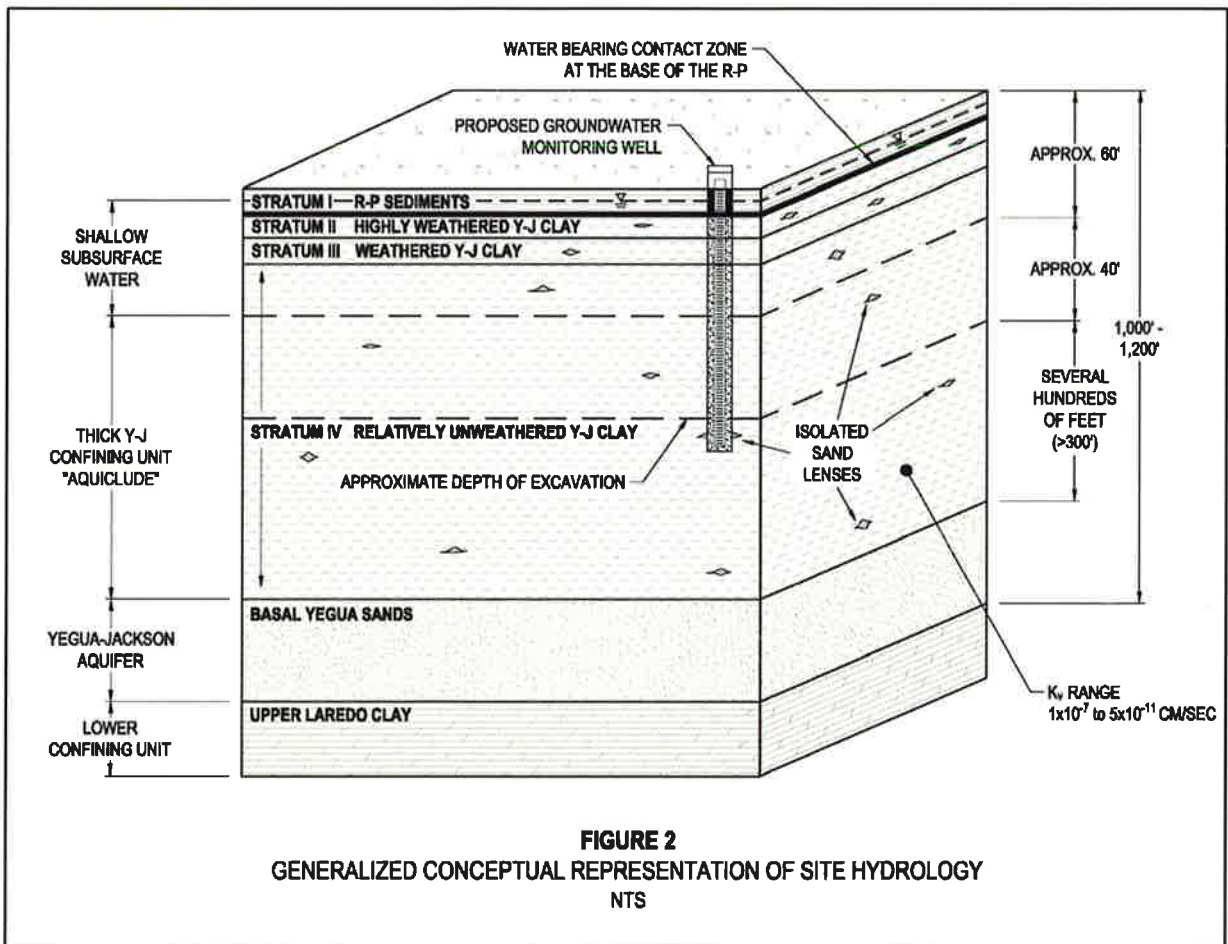
permeability clays make up about 95% of the subsurface. Further, for what limited quantity of water there is, the water quality is very poor – ranging from saline to brine (see SSIR, CBI, 2015). It should be noted that even if there were ample saturated material and good quality water, which the investigations prove there is not, subsurface conditions are so poorly transmissive, that wells cannot yield significant quantities of groundwater. Laboratory and field testing (GDR, Raba-Kistner, 2015 [III-E.3], Summary of Hydrogeologic Testing in Selected Piezometers, PLC 2015 [III-E.4] and SSIR, CB&I, 2015 [III-E.5]) shows that even the more transmissive zones encountered are poorly permeable to practically impervious.

To meet the regulatory requirements while simultaneously providing an effective groundwater monitoring system, it is proposed that the shallow subsurface water be considered the “regulatory uppermost aquifer” exclusively for complying with the requirements of 30 TAC §330.63(e)(4), 30 TAC §330.63(f)(3), and 30 TAC §330.403(a). The proposed monitoring system fully complies with the above stated rules; regardless the executive director could approve the proposed groundwater monitoring system under 30 TAC §330.403(c).

2.4 Summary

The subsurface conditions beneath the site are characterized as follows from the ground surface downward. See Figure 2 for a graphical representation:

- Stratum I is comprised of Recent-Pleistocene deposits with a coarse grained layer of sediments at the base of the Stratum. This zone typically transmits seasonal moisture from surface infiltration.



- Strata II, III and IV are predominately Eocene clay deposits of the Yegua-Jackson group and are subdivided as Highly Weathered (II), Weathered (III) and Relatively Unweathered (IV). These Strata contain 95% clay material that is overly consolidated and 7 to 8 percentage points dry of the plastic limit. Strata II, III and IV clays are practically impervious based on criteria established by Terzaghi and Peck in *Soil Mechanics in Engineering Practice* (1967). Vertical hydraulic conductivities of the clays ranged from approximately 1×10^{-7} cm/sec to less than 1×10^{-10} cm/sec. Isolated sandy intervals in Strata II, III, and IV are also poorly permeable to practically impervious with horizontal hydraulic conductivities ranging from approximately 1×10^{-5} cm/sec to less than 1×10^{-7} cm/sec.
- Strata II, III and IV contain isolated sand lenses that are discontinuous, poorly permeable to practically impervious but may be hydraulically connected to the contact zone to a depth of approximately 60-feet creating a shallow subsurface water bearing zone.

- The shallow subsurface water bearing zone has been designated as the “regulated uppermost aquifer” for groundwater monitoring purposes and extends to approximately 60 feet bgs and encompasses Stratum I, II, III and a portion of IV. This depth is based on the head difference in piezometers screened above 60-feet and those screened below 60-feet as discussed in Section 2.3 Shallow Subsurface Water.
- Below approximately 60 feet and to several hundreds of feet (>300 feet below the deepest proposed excavation), Strata IV serves as the effective upper confining unit or aquiclude to the uppermost recognized aquifer beneath the site, i.e., the regional Yegua-Jackson Aquifer.
- Below approximately 60 feet, the water in Strata IV is very limited and under confined conditions.
- The uppermost recognized aquifer is comprised of the basal sands that occur near the bottom of the Yegua formation and is approximately 400-feet in thickness.
- The uppermost recognized aquifer exhibits confining pressures of several hundreds of feet.
- The upper Laredo Clays serve as the lower confining unit for the uppermost recognized aquifer, the regional Yegua-Jackson Aquifer (basal sands of the Yegua).

Part III, Attachment III-F

**Part III
Attachment III-F**

GROUNDWATER MONITORING PLAN

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
Revised September 2015
Revised November 2015
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**Prepared for:
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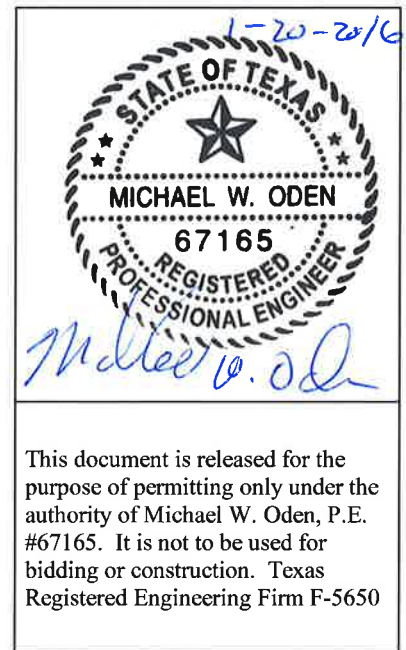
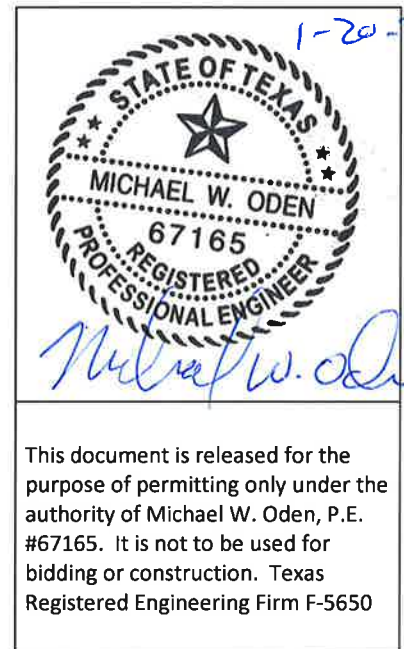


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Appendix III-F.2 – Groundwater Sampling and Analysis Plan



designed to detect a possible release from the landfill based on site specific conditions. As detailed above the “uppermost aquifer” for groundwater monitoring purposes is the contact zone at the base of R-P and extending down into the Y-J to a depth of 60 feet bgs. Groundwater flow rate is on the order of 1 to 2 feet per year to the south to southwest and is not affected by seasonal fluctuations based on data presented in Appendix III-E.2. The Y-J beneath the contact zone (Stratum III, III and IV) is predominately clay (95% clay per III-E.3) to great depths. Construction of the landfill may divert water around the facility but the overall direction will remain to the south to southwest. Therefore, no provisions are needed in the monitoring program to account for this.

If a release from the landfill were to occur, the highest probability is association with one of the leachate sumps. To ensure earliest possible detection of such a release, the groundwater monitoring system will consist of groundwater monitoring wells which will be installed to, or below, the deepest sump excavation elevation depth nearest the well. To determine monitor well depths, the excavation elevation of the nearest sump to the monitor well location will be used and will assume a 3-foot thick compacted soil liner. The monitored interval will extend from the deepest sump excavation elevation depth nearest the well to within nine (9) feet of the surface as shown on Drawing III-F.1-2.

The Groundwater Monitoring Program for the Pescadito Environmental Resource Center (MSW 2374) has been prepared to meet the requirements of 30TAC330.403. The compliance monitoring wells will be installed along the POC as shown on Figure III-F.1-1. Well spacing will be a maximum of 600-feet and will consist of a minimum of 38 wells. However, in the event that a transmissive sand zone containing perched water is encountered in the sidewall of the excavation within approximately fifty feet of the bottom of the excavation, the next well along the POC boundary will be relocated to that area, with depths determined as outlined above, and the 600-foot spacing will be re-started. That specific groundwater monitoring well will be screened across the transmissive sand zone using the installation detail previously provided. Monitoring well installation will be performed so that there is always a well along the POC a minimum of 600-feet downgradient from the most recent cell constructed.

Note that the POC well locations were selected based on the potential flow direction in the

5.0 Groundwater Monitoring System Certification

330.403(e)

General Site Information:

Pescadito Environmental Resource Center
Webb County, Texas
MSW Permit Application No.: 2374

Qualified Groundwater Scientist Statement

I, Michael W. Oden, am a registered professional engineer in the State of Texas and a qualified groundwater scientist as defined in 30 TAC §330.3. I have reviewed the groundwater monitoring system and supporting data contained in the permit documents. In my professional opinion, the groundwater monitoring system is in compliance with the groundwater monitoring requirements specified in 30 TAC §330.401 through §330.421. This system has been designed specifically for the Pescadito Environmental Resource Center (Permit Application No. MSW No. 2374). The only warranty made by me in connection with this document is that I have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of my profession, practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

Firm/Address: CB&I Environmental and Infrastructure, Inc.
12005 Ford Road; Suite 600
Dallas, Texas 75234
TBPE Firm Registration F-5650

Signature: _____



Date: _____

1-20-2016



Part III, Appendix III-F.1

**Part III
Attachment III-F
Appendix III-F.1**

GROUNDWATER MONITORING PLAN FIGURES

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
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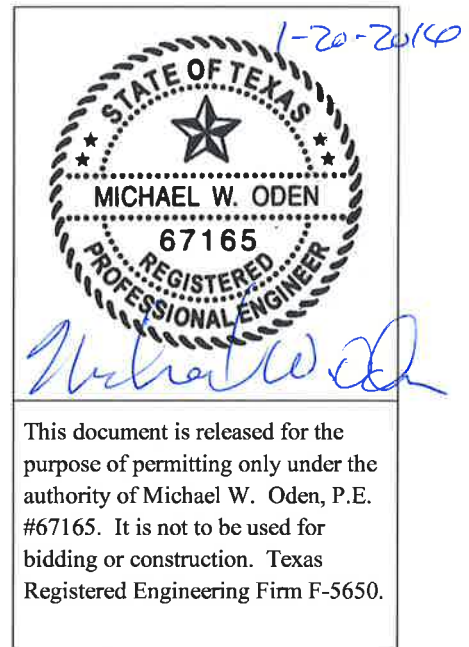


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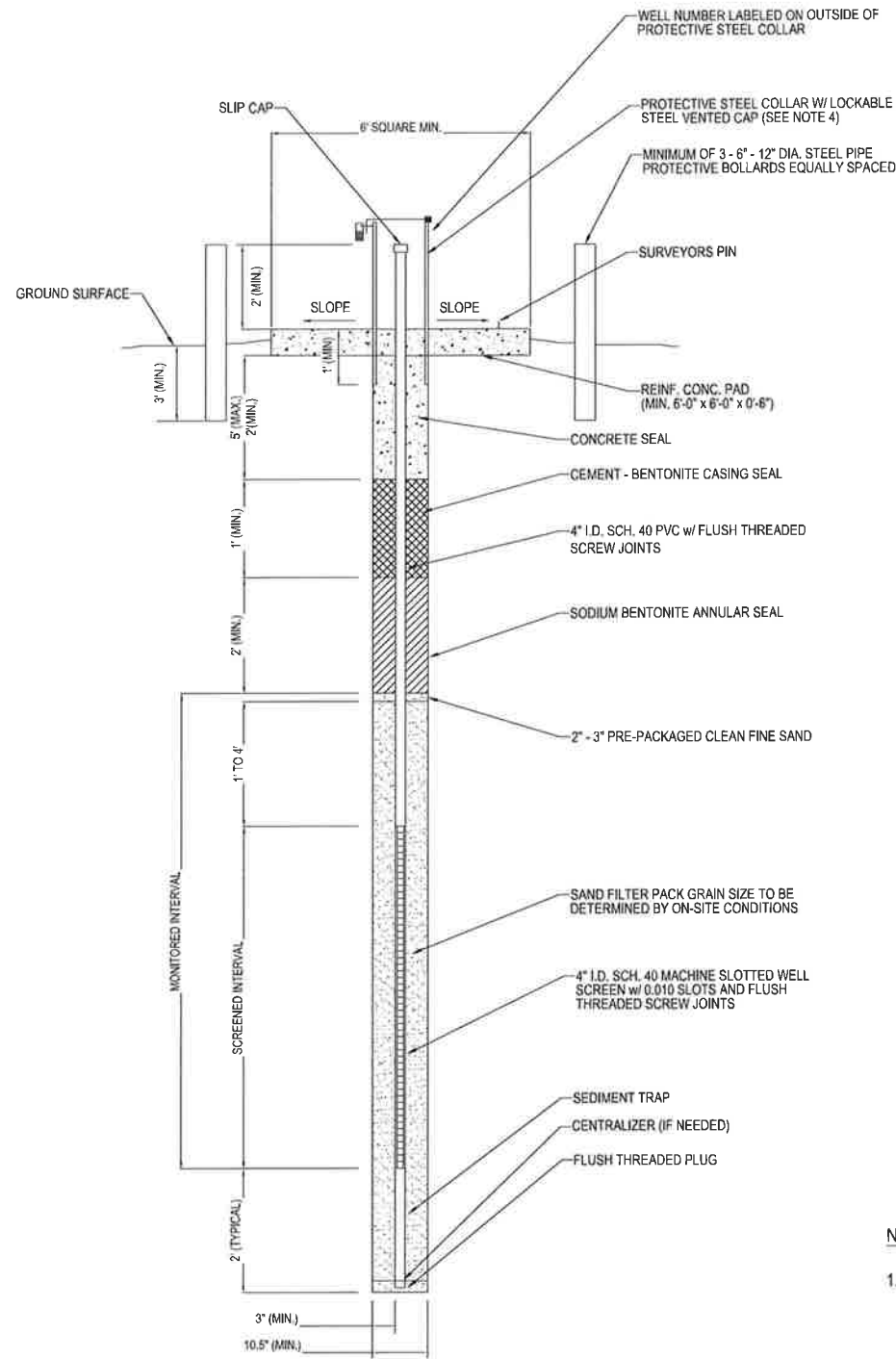
The seal is circular with a five-pointed star in the center. The text around the star reads 'STATE OF TEXAS' at the top and 'REGISTERED PROFESSIONAL ENGINEER' at the bottom. In the middle, it says 'MICHAEL W. ODEN' and '67165'. A handwritten signature 'Michael W. Oden' is written across the bottom of the seal.

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1
F.1-2

TYPICAL GROUNDWATER MONITORING WELL

NOT TO SCALE

NOTES:

1. MONITORING WELL INSTALLATION SHALL CONFORM TO METHODS AND MATERIALS DESCRIBED IN APPLICABLE REGULATIONS OF TCEQ.
2. PTFE TAPE OR O-RINGS ON ALL JOINTS.
3. MONITORED INTERVAL TO BE FROM 9' BELOW GROUND SURFACE TO THE DEEPEST SUMP EXCAVATION ELEVATION NEAREST TO THE WELL.
4. PROTECTIVE COLLAR AND CAP MAY BE STEEL OR ALUMINUM.

GROUNDWATER MONITORING WELL SUMMARY TABLE

Well Name	Northing	Easting	Ground Surface Elevation (ft MSL)	Depth to Liner (ft)
MW-1	17098886.69	773881.16	565.91	107.91
MW-2	17097702.31	773688.14	558.21	102.54
MW-3	17097110.12	773591.63	556.43	100.58
MW-4	17096518.07	773494.27	554.75	99.72
MW-5	17095926.02	773396.92	552.54	98.32
MW-6	17095334.01	773299.35	550.91	98.68
MW-7	17094751.01	773153.82	549.51	99.93
MW-8	17094169.73	773005.28	548.77	101.46
MW-9	17093587.67	772856.59	548.00	102.47
MW-10	17093007.29	772707.40	546.58	102.83
MW-11	17092426.17	772558.07	545.54	103.58
MW-12	17091845.05	772408.73	544.09	103.91
MW-13	17091263.93	772259.40	542.59	104.19
MW-14	17090681.89	772104.69	540.87	102.87
MW-15	17090315.17	771600.30	539.35	101.35
MW-16	17089980.45	771102.31	538.01	99.81
MW-17	17090078.66	770498.36	536.84	98.24
MW-18	17090229.27	769917.57	534.01	95.01
MW-19	17090604.86	769395.12	534.50	95.10
MW-20	17090986.53	769111.29	536.55	96.91
MW-21	17091428.42	769025.09	537.84	97.86
MW-22	17091577.75	768443.97	537.68	97.68
MW-23	17091984.47	768293.13	537.94	97.94
MW-24	17092567.11	768436.39	540.44	99.33
MW-25	17093149.76	768579.65	541.99	99.44
MW-26	17093732.41	768722.91	541.54	97.54
MW-27	17094315.05	768866.17	547.36	101.91
MW-28	17094897.70	769009.43	540.00	93.11
MW-29	17095480.34	769152.69	541.99	93.49
MW-30	17096067.47	769269.65	543.99	93.24
MW-31	17096654.67	769327.57	547.69	95.16
MW-32	17097261.87	769385.49	552.73	98.97
MW-33	17097829.62	769191.05	558.02	103.18
MW-34	17098750.56	769569.69	556.70	99.89
MW-35	17099883.71	769707.17	563.37	105.37
MW-36	17099726.98	770651.32	560.31	102.31
MW-37	17099530.46	771835.12	566.08	108.08
MW-38	17099333.94	773018.92	559.58	101.58

PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS
MSW 2374

TYPICAL GROUNDWATER MONITORING WELL DETAIL

PROJ. NO.:	148866	DATE:	APRIL 2015
DESIGNED BY:	-	DRAWING NO.:	III F.1-2
DRAWN BY:	MTE	CHECKED BY:	RDS
APPROVED BY:	MWO		2 OF 2 SHEETS



CB&I Environmental & Infrastructure, Inc.
TBPE FIRM F-5650

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1-20-2016

REV. NO.	DATE	DESCRIPTION
2	12/2015	NOD 2 SUPPLEMENT
1	11/2015	NOD 2

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Attachment C
to January 2016 Response Letter

Redline Version of Changed Pages

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Part III, Attachment III-E

**Part III
Attachment III-E**

GEOLOGY REPORT

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

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ENVIRONMENTAL RESOURCE CENTER

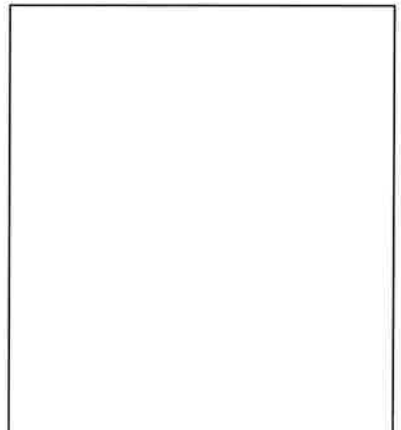
**Initial Submittal March 2015
Revised September 2015
Revised November 2015
Revised January 2016**

**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
CB&I Environmental and
Infrastructure, Inc.**



**12005 Ford Rd, Suite 600
Dallas, TX 75234**



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Appendix III-E.2	Subsurface Investigation Report
Appendix III-E.3	Geotechnical Data Report
Appendix III-E.4	Summary of Hydrogeologic Testing in Selected Piezometers
Appendix III-E.5	Supplemental Subsurface Investigation Report – Phase V

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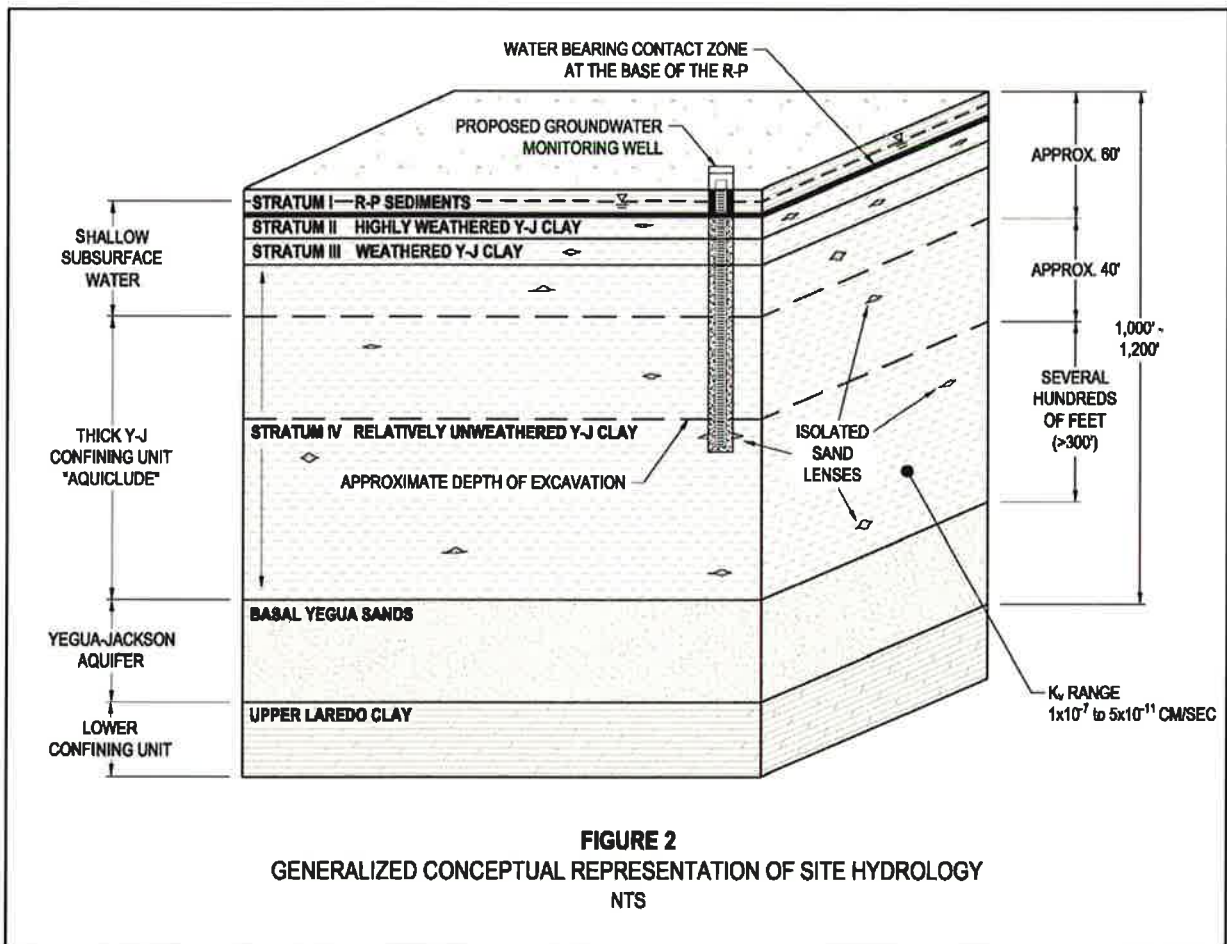
permeability clays make up about 95% of the subsurface. Further, for what limited quantity of water there is, the water quality is very poor – ranging from saline to brine (see SSIR, CBI, 2015). It should be noted that even if there were ample saturated material and good quality water, which the investigations prove there is not, subsurface conditions are so poorly transmissive, that wells cannot yield significant quantities of groundwater. Laboratory and field testing (GDR, Raba-Kistner, 2015 [III-E.3], Summary of Hydrogeologic Testing in Selected Piezometers, PLC 2015 [III-E.4] and SSIR, CB&I, 2015 [III-E.5]) shows that even the more transmissive zones encountered are poorly permeable to practically impervious.

To meet the regulatory requirements while simultaneously providing an effective groundwater monitoring system, it is proposed that the shallow subsurface water be considered the “regulatory uppermost aquifer” exclusively for complying with the requirements of 30 TAC §330.63(e)(4), 30 TAC §330.63(f)(3), and 30 TAC §330.403(a). The proposed monitoring system fully complies with the above stated rules; regardless the executive director could approve the proposed groundwater monitoring system under 30 TAC §330.403(c).

2.4 Summary

The subsurface conditions beneath the site are characterized as follows from the ground surface downward. See Figure 2 for a graphical representation:

- Stratum I is comprised of Recent-Pleistocene deposits with a coarse grained layer of sediments at the base of the Stratum. This zone typically transmits seasonal moisture from surface infiltration.



- Strata II, III and IV are predominately Eocene clay deposits of the Yegua-Jackson group and are subdivided as –Highly Weathered (II), Weathered (III) and Relatively Unweathered (IV). These Strata contain 95% clay material that is overly consolidated and 7 to 8 percentage points dry of the plastic limit. Strata II, III and IV clays are practically impervious based on criteria established by Terzaghi and Peck in *Soil Mechanics in Engineering Practice* (1967). Vertical hydraulic conductivities of the clays ranged from approximately 1×10^{-7} cm/sec to less than 1×10^{-10} cm/sec. Isolated sandy intervals in Strata II, III, and IV are also poorly permeable to practically impervious with horizontal hydraulic conductivities ranging from approximately 1×10^{-5} cm/sec to less than 1×10^{-7} cm/sec.
- Strata II, III and IV contain isolated sand lenses that are discontinuous, poorly permeable to practically impervious but may be hydraulically connected to the contact zone to a depth of approximately 60-feet creating a shallow subsurface water bearing zone.

- The shallow subsurface water bearing zone has been designated as the “regulated uppermost aquifer” for groundwater monitoring purposes and extends to approximately 60 feet bgs and encompasses Stratum I, II, III and a portion of IV. This depth is based on the head difference in piezometers screened above 60-feet and those screened below 60-feet as discussed in Section 2.3 Shallow Subsurface Water.
- Below approximately 60 feet and to several hundreds of feet (>300 feet below the deepest proposed excavation), Strata IV serves as the effective upper confining unit or aquiclude to the uppermost recognized aquifer beneath the site, i.e., the regional Yegua-Jackson Aquifer.
- Below approximately 60 feet, the water in Strata IV is very limited and under confined conditions.
- The uppermost recognized aquifer is comprised of the basal sands that occur near the bottom of the Yegua formation and is approximately 400-feet in thickness.
- The uppermost recognized aquifer exhibits confining pressures of several hundreds of feet.
- The upper Laredo Clays serve as the lower confining unit for the uppermost recognized aquifer, the regional Yegua-Jackson Aquifer (basal sands of the Yegua).

Redline/Strikeout
Part III, Attachment III-F

**Part III
Attachment III-F**

GROUNDWATER MONITORING PLAN

**Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas**

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

**Initial Submittal March 2015
Revised September 2015
Revised November 2015
Revised January 2016**

**Prepared for:
Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041**

**Prepared by:
CB&I Environmental and
Infrastructure, Inc.**



**12005 Ford Rd, Suite 600
Dallas, TX 75234**

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Appendix III-F.1 – Figures

Appendix III-F.2 – Groundwater Sampling and Analysis Plan

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designed to detect a possible release from the landfill based on site specific conditions. As detailed above the “uppermost aquifer” for groundwater monitoring purposes is the contact zone at the base of R-P and extending down into the Y-J to a depth of 60 feet bgs. Groundwater flow rate is on the order of 1 to 2 feet per year to the south to southwest and is not affected by seasonal fluctuations based on data presented in Appendix III-E.2. The Y-J beneath the contact zone (Stratum III, III and IV) is predominately clay (95% clay per III-E.3) to great depths. Construction of the landfill may divert water around the facility but the overall direction will remain to the south to southwest. Therefore, no provisions are needed in the monitoring program to account for ~~this ese~~

If a release from the landfill were to occur, the highest probability is association with one of the leachate sumps. To ensure earliest possible detection of such a release, the groundwater monitoring system will consist of groundwater monitoring wells which will be installed to, or below, the deepest sump excavation elevation depth nearest the well. To determine monitor well depths, the excavation elevation of the nearest sump to the monitor well location will be used and will assume a 3-foot thick compacted soil liner. The monitored interval will extend from the deepest sump excavation elevation depth nearest the well to within nine (9) feet of the surface as shown on Drawing III-F.1-2. ~~Screens will be placed in the lower 10-20 feet of the monitoring well, as shown on Figure III F.1 2 and the sand filter pack will extend to within 9 feet of the surface.~~

The Groundwater Monitoring Program for the Pescadito Environmental Resource Center (MSW 2374) has been prepared to meet the requirements of 30TAC330.403. The compliance monitoring wells will be installed along the POC as shown on Figure III-F.1-1. Well spacing will be a maximum of 600-feet and will consist of a minimum of 38 wells. However, in the event that a transmissive sand zone containing perched water is encountered in the sidewall of the excavation within approximately fifty feet of the bottom of the excavation, the next well along the POC boundary will be relocated to that area, with depths determined as outlined above, and the 600-foot spacing will be re-started. That specific groundwater monitoring well will be screened across the transmissive sand zone using the installation detail previously provided. Monitoring well installation will be performed so that there is always a well along the POC a minimum of 600-feet downgradient from the most recent cell constructed.

5.0 Groundwater Monitoring System Certification

330.403(e)

General Site Information:

Pescadito Environmental Resource Center
Webb County, Texas
MSW Permit Application No.: 2374

Qualified Groundwater Scientist Statement

I, Michael W. Oden, am a registered professional engineer in the State of Texas and a qualified groundwater scientist as defined in 30 TAC §330.3. I have reviewed the groundwater monitoring system and supporting data contained in the permit documents. In my professional opinion, the groundwater monitoring system is in compliance with the groundwater monitoring requirements specified in 30 TAC §330.401 through §330.421. This system has been designed specifically for the Pescadito Environmental Resource Center (Permit Application No. MSW No. 2374). The only warranty made by me in connection with this document is that I have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of my profession, practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

Firm/Address: CB&I Environmental and Infrastructure, Inc.
12005 Ford Road; Suite 600
Dallas, Texas 75234
TBPE Firm Registration F-5650

Signature: _____

Date: _____

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Part III, Appendix III-F.1

Part III
Attachment III-F
Appendix III-F.1

GROUNDWATER MONITORING PLAN FIGURES

Pescadito Environmental Resource Center
MSW No. 2374
Webb County, Texas

PESCADITO
ENVIRONMENTAL RESOURCE CENTER

Initial Submittal March 2015
Revised September 2015
Revised November 2015
Revised January 2016

Prepared for:
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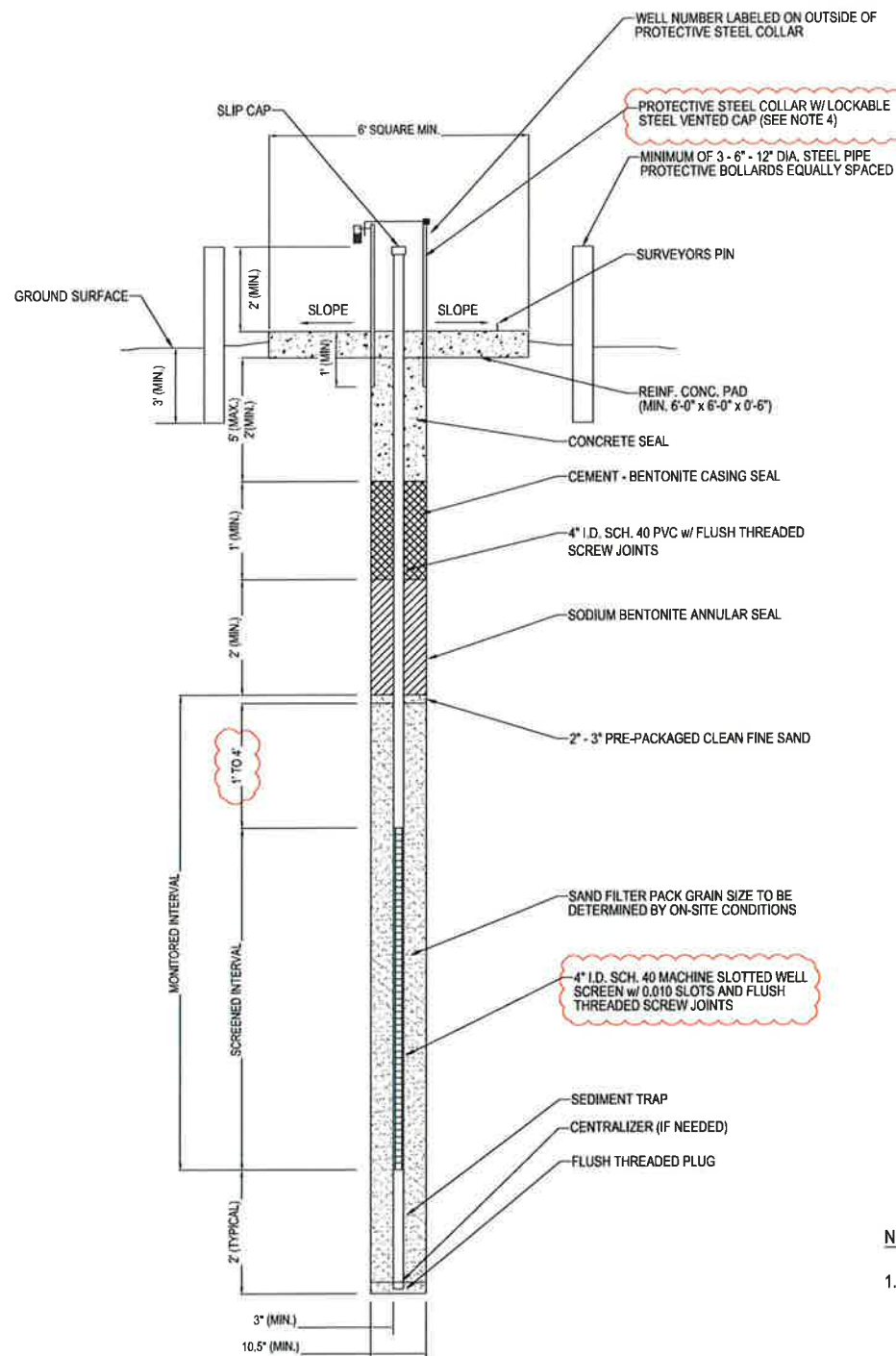
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1
F.1-2
TYPICAL GROUNDWATER MONITORING WELL
NOT TO SCALE

- NOTES:**
- MONITORING WELL INSTALLATION SHALL CONFORM TO METHODS AND MATERIALS DESCRIBED IN APPLICABLE REGULATIONS OF TCEQ.
 - PTFE TAPE OR O-RINGS ON ALL JOINTS.
 - MONITORED INTERVAL TO BE FROM 9' BELOW GROUND SURFACE TO THE DEEPEST SUMP EXCAVATION ELEVATION NEAREST TO THE WELL.
 - PROTECTIVE COLLAR AND CAP MAY BE STEEL OR ALUMINUM.

GROUNDWATER MONITORING WELL SUMMARY TABLE

Well Name	Northing	Easting	Ground Surface Elevation (ft MSL)	Depth to Liner (ft)
MW-1	17098886.69	773881.16	565.91	107.91
MW-2	17097702.31	773688.14	559.21	102.54
MW-3	17097110.12	773591.63	556.43	100.58
MW-4	17096518.07	773494.27	554.75	99.72
MW-5	17095926.02	773396.92	552.54	98.32
MW-6	17095334.01	773299.35	550.91	98.68
MW-7	17094751.01	773153.82	549.51	99.93
MW-8	17094169.73	773005.28	548.77	101.46
MW-9	17093587.67	772856.59	548.00	102.47
MW-10	17093007.29	772707.40	546.58	102.83
MW-11	17092426.17	772558.07	545.54	103.58
MW-12	17091845.05	772408.73	544.09	103.91
MW-13	17091263.93	772259.40	542.59	104.19
MW-14	17090661.89	772104.69	540.87	102.87
MW-15	17090315.17	771600.30	539.35	101.35
MW-16	17089980.45	771102.31	538.01	99.81
MW-17	17090078.66	770498.36	536.84	98.24
MW-18	17090229.27	769917.57	534.01	95.01
MW-19	17090604.86	769395.12	534.50	95.10
MW-20	17090986.53	769111.29	536.55	96.91
MW-21	17091428.42	769025.09	537.64	97.86
MW-22	17091577.75	768443.97	537.68	97.68
MW-23	17091984.47	768293.13	537.94	97.94
MW-24	17092567.11	768436.39	540.44	99.33
MW-25	17093149.76	768579.65	541.99	99.44
MW-26	17093732.41	768722.91	541.54	97.54
MW-27	17094315.05	768866.17	547.36	101.91
MW-28	17094897.70	769009.43	540.00	93.11
MW-29	17095480.34	769152.69	541.99	93.49
MW-30	17096067.47	769269.65	543.99	93.24
MW-31	17096664.67	769327.57	547.69	95.16
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MW-35	17099883.71	769707.17	563.37	105.37
MW-36	17099726.98	770651.32	560.31	102.31
MW-37	17099530.46	771835.12	566.08	108.08
MW-38	17099333.94	773018.92	559.58	101.58

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STATE OF TEXAS
MICHAEL W. ODEN
67165
PROFESSIONAL ENGINEER

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PESCADITO ENVIRONMENTAL RESOURCE CENTER
WEBB COUNTY, TEXAS
MSW 2374

TYPICAL GROUNDWATER MONITORING WELL DETAIL

PROJ. NO.:	148866	DATE:	APRIL 2015
DESIGNED BY:	-	DRAWING NO.:	III
DRAWN BY:	MTE		F.1-2
CHECKED BY:	RDS		
APPROVED BY:	MWO		2 OF 2 SHEETS

Attachment D
to January 2016 Response Letter

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