



June 25, 2021

Project No. 2040906201

Mack Borchardt

City of Frisco
6101 Frisco Square Boulevard
Frisco, Texas 75034

RE: 2021 FIRST QUARTER FRENCH DRAIN OPERATIONAL REPORT, FRISCO COMMUNITY DEVELOPMENT CORPORATION SITE, 7471 OLD 5TH STREET, FRISCO, TEXAS

Dear Mr. Borchardt

Golder Associates Inc. (Golder) has prepared this quarterly operational report for the French Drain System (FDS) at the Frisco Community Development Corporation (CDC) Facility located at 7471 Old 5th Street in Frisco, Texas (Site). This report has been prepared in response to the Texas Commission on Environmental Quality (TCEQ) comments to Exide Technologies, Inc. (Exide) on the 2013 Affected Property Assessment Report (APAR) dated October 8th, 2013 which requested additional information regarding the performance of the French Drain and the TCEQ comments to Exide for the 2014 APAR dated May 5, 2015 which requested quarterly reports on the operation of the FDS. This work is being continued under new ownership by the Frisco CDC.

This report includes general FDS background information and summarizes operation of the FDS system during the first quarter 2021. Specifically, the quarterly report includes a discussion of the performance of the system, gallons of water intercepted, concentrations of constituents in the water, the presence and/or absence of leakage along the flood wall into Stewart Creek, the presence or absence of white crystalline substance and sample results (if applicable), and a determination as to whether ongoing discharges to Stewart Creek are continuing to occur. As stated in previous quarterly reports, survey data for the French Drain and Stewart Creek and specific notes on which days the French Drain was pumped, as requested by the TCEQ, are included in this report.

1.0 FRENCH DRAIN SYSTEM HISTORY

According to historical information contained in the French Drain Construction Report (W&M Environmental Group, Inc. [W&M], 2013), the concrete retaining wall along the southern edge of the operating area was constructed in the late 1980s to keep Stewart Creek floodwaters from entering the operating portion of the facility and to retain storm water from the operating portion of the facility for subsequent collection and treatment at the onsite water treatment plants. After construction of the retaining wall, areas of seepage along the Stewart Creek side of the retaining wall were previously observed by Exide and its consultants; primarily between the Battery Receiving Building and the Slag Treatment Building. In response, Exide sealed numerous cracks in the retaining wall. In 2011, W&M designed the FDS and associated repairs to drain any water that collected below the pavement on the north side of the FDS and eliminate seepage through the flood wall. Water from the FDS is pumped to mobile storage tanks adjacent to the wastewater treatment area for offsite disposal. Additional FDS

information, including system specifications, is included in the June 2014 French Drain Monitoring Plan (FDMP) that was previously provided to the TCEQ.

2.0 DESCRIPTION OF MONITORING AND INSPECTION ACTIVITIES

Activities completed by the City of Frisco employees and Golder during the first quarter 2021 included the following:

- Daily (weekday) Inspections and Maintenance – Inspection of the flowmeter and recording flow rate and totalizer reading.
- Weekly Inspections and Maintenance – Inspection and maintenance of the FDS collection sump.
- Quarterly Inspections and Maintenance –
 - Inspection of the FDS for sedimentation.
 - Inspection of the Flood Wall waterstop and joint fillers.
 - Inspection of the Flood Wall for signs of seepage through the wall, cracks, or other signs of damage.

Monitoring and inspection activities completed for the FDS in accordance with the FDMP during the first quarter 2021 were completed by both City of Frisco Site personnel as well as Golder staff. City of Frisco Site personnel conducted daily and weekly activities and Golder personnel conducted the quarterly inspection.

City of Frisco personnel have been performing ongoing inspections of the flood wall and notified Golder of a crack extending through the wall on the western end of the flood wall in February 2021. On March 4, 2021, Golder inspected the inside and outside portions of the flood wall and noticed minor cracks in expansion joints in addition to the crack previously noted by the City of Frisco. The City of Frisco Site personnel were notified of the minor cracks and shown areas to repair. On March 5, 2021, an inspection of the crack on the western end of the flood wall was performed by City of Frisco personnel, Golder staff, and a structural engineer from GWC Engineering, LP (GWC). Based on recommendations from GWC, a subcontractor will be contracted to pressure inject epoxy in the crack in second or third quarter 2021. All identified cracks were filled with either Leak Stopper rubberized roof patch or Clear Flex Seal and Pro Select Concrete Fix in late March 2021.

A more detailed description of the results of data collection activities and inspections is included in Section 3.0 below.

3.0 OBSERVATIONS AND RESULTS

3.1 Gallons of Water Intercepted

The flow rate and totalizer reading for the FDS were generally recorded each weekday. Table 1 summarizes the recorded flows of the FDS and the offsite daily precipitation based on data recorded at a local weather station located in Frisco, Texas (data obtained from <https://www.wunderground.com/dashboard/pws/KTXDALLA25>).

3.2 Groundwater and Perched Water Level Observations

Water levels for MW-26, MW-29, MW-31, MW-32, MW-33, MW-34, MW-35, and MW-46 were measured and recorded during the first quarter 2021. Table 2 summarizes the groundwater depths and elevations from this sampling event as well as previous data and includes the elevations of the banks and bottom of Stewart Creek at

transects located near the upstream, midpoint and downstream end of the FDS. Monitoring well locations, transect locations and Stewart Creek elevations are shown on Figure 1. Water levels were generally higher during the first quarter of 2021 than in the previous event.

3.3 Floodwall Seepage

There was no floodwall seepage observed during the flood wall inspections conducted on March 4 or 5, 2021.

3.4 White Crystalline Material Observations

White crystalline material was not observed on the flood wall during the Golder inspection conducted on March 4, 2021. As such, no samples of white crystalline material were collected or analyzed.

3.5 Laboratory Analytical Results

Water samples were collected by City of Frisco Site personnel from the FDS during the first quarter 2021. Sampling of the French Drain was conducted on March 10, 2021. All analytical results from these samples are included in Table 3 and Attachment A.

4.0 SUMMARY OF SYSTEM PERFORMANCE

Based on the results of the inspection and monitoring activities for the first quarter 2021 described above, the FDS appears to be operating as designed. As discussed above, additional repairs of the flood wall will be performed later in 2021.

5.0 CLOSURE

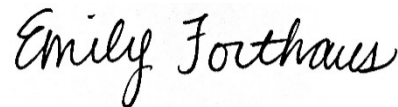
Golder appreciates the opportunity to assist the Frisco Community Development Corporation with this project. Please contact us if you have any questions or comments concerning this quarterly operational report.

Sincerely,

Golder Associates Inc.



Sergio N. Ruiz
Project Environmental Scientist



Emily P. Forthaus
Project Geological Engineer



Anne M. Faeth-Boyd, PG
Associate and Senior Consultant

SNR/EPF/AMF

CC Jerry Wick, Texas Commission on Environmental Quality
 Brad Weaver – JEM Connections LLC (City of Frisco)

Attachments: Table 1: French Drain Daily Flow Volumes
 Table 2: Perched and Groundwater Monitoring Well Water Elevations
 Table 3: French Drain Water Analytical Data
 Figure 1: Stewart Creek Transects
 Attachment A: French Drain Water Laboratory Analytical Results

Table 1
French Drain Daily Flow Volumes

Jan-21			Feb-21			Mar-21		
Total Flow/Water Removed (gal)		Total Precip (in)	Total Flow/Water Removed (gal)		Total Precip (in)	Total Flow/Water Removed (gal)		Total Precip (in)
10,580		0.73	7,663		2.33	11,670		2.47
Date	Daily Flow (gal)	Daily Precip (in)	Date	Daily Flow (gal)	Daily Precip (in)	Date	Daily Flow (gal)	Daily Precip (in)
Friday, January 1, 2021	3,129	0.02	Monday, February 1, 2021	345	0.00	Monday, March 1, 2021	2,145	0.07
Saturday, January 2, 2021	NR	0.00	Tuesday, February 2, 2021	49	0.00	Tuesday, March 2, 2021	517	0.00
Sunday, January 3, 2021	NR	0.00	Wednesday, February 3, 2021	98	0.00	Wednesday, March 3, 2021	505	0.00
Monday, January 4, 2021	2,889	0.00	Thursday, February 4, 2021	50	0.00	Thursday, March 4, 2021	354	0.00
Tuesday, January 5, 2021	563	0.00	Friday, February 5, 2021	50	0.00	Friday, March 5, 2021	361	0.00
Wednesday, January 6, 2021	361	0.00	Saturday, February 6, 2021	NR	0.00	Saturday, March 6, 2021	NR	0.00
Thursday, January 7, 2021	285	0.00	Sunday, February 7, 2021	NR	0.00	Sunday, March 7, 2021	NR	0.00
Friday, January 8, 2021	198	0.00	Monday, February 8, 2021	153	0.00	Monday, March 8, 2021	871	0.00
Saturday, January 9, 2021	NR	0.00	Tuesday, February 9, 2021	49	0.01	Tuesday, March 9, 2021	201	0.00
Sunday, January 10, 2021	NR	0.02	Wednesday, February 10, 2021	50	0.00	Wednesday, March 10, 2021	256	0.00
Monday, January 11, 2021	507	0.00	Thursday, February 11, 2021	0	0.00	Thursday, March 11, 2021	149	0.00
Tuesday, January 12, 2021	224	0.00	Friday, February 12, 2021	2	0.00	Friday, March 12, 2021	161	0.02
Wednesday, January 13, 2021	112	0.00	Saturday, February 13, 2021	NR	0.00	Saturday, March 13, 2021	NR	0.00
Thursday, January 14, 2021	141	0.00	Sunday, February 14, 2021	NR	0.00	Sunday, March 14, 2021	NR	0.08
Friday, January 15, 2021	96	0.00	Monday, February 15, 2021	NR ¹	0.00	Monday, March 15, 2021	506	0.00
Saturday, January 16, 2021	NR	0.00	Tuesday, February 16, 2021	NR ¹	0.03	Tuesday, March 16, 2021	155	0.00
Sunday, January 17, 2021	NR	0.00	Wednesday, February 17, 2021	NR ¹	0.01	Wednesday, March 17, 2021	201	0.33
Monday, January 18, 2021	238	0.02	Thursday, February 18, 2021	NR ¹	0.01	Thursday, March 18, 2021	307	0.00
Tuesday, January 19, 2021	67	0.11	Friday, February 19, 2021	NR ¹	0.00	Friday, March 19, 2021	255	0.00
Wednesday, January 20, 2021	98	0.24	Saturday, February 20, 2021	NR	0.00	Saturday, March 20, 2021	202	0.00
Thursday, January 21, 2021	248	0.00	Sunday, February 21, 2021	NR	0.00	Sunday, March 21, 2021	100	NR
Friday, January 22, 2021	232	0.00	Monday, February 22, 2021	2,188	0.00	Monday, March 22, 2021	101	0.54
Saturday, January 23, 2021	NR	0.03	Tuesday, February 23, 2021	2,043	0.00	Tuesday, March 23, 2021	650	0.00
Sunday, January 24, 2021	NR	0.10	Wednesday, February 24, 2021	216	0.00	Wednesday, March 24, 2021	438	1.10
Monday, January 25, 2021	588	0.16	Thursday, February 25, 2021	152	1.65	Thursday, March 25, 2021	757	0.30
Tuesday, January 26, 2021	206	0.00	Friday, February 26, 2021	2,218	0.45	Friday, March 26, 2021	700	0.00
Wednesday, January 27, 2021	159	0.00	Saturday, February 27, 2021	NR	0.01	Saturday, March 27, 2021	436	0.00
Thursday, January 28, 2021	141	0.00	Sunday, February 28, 2021	NR	0.16	Sunday, March 28, 2021	333	0.00
Friday, January 29, 2021	98	0.00				Monday, March 29, 2021	426	0.00
Saturday, January 30, 2021	NR	0.03				Tuesday, March 30, 2021	276	0.03
Sunday, January 31, 2021	NR	0.00				Wednesday, March 31, 2021	307	0.00

Notes:

Precipitation data obtained from: <https://www.wunderground.com/dashboard/pws/KTXDALLA25>

Daily flow volumes provided by Site.

NR - Not Recorded.

NR¹ - Not recorded due to freezing temperatures.

Prepared by: SNR 4/13/2021

Checked by: EPF 04/23/2021

Reviewed by: AMF 06/22/2021

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Stewart Creek Elevations					
Survey Point			Measurement Date	Elevation (ft msl)	
Transect 1					
Top of North Bank			3/7/2016	628.74	
Toe of North Bank			3/7/2016	624.79	
Creek Centerline			3/7/2016	622.79	
Toe of South Bank			3/7/2016	624.27	
Top of South Bank			3/7/2016	634.09	
Transect 2					
Top of North Bank			3/7/2016	627.97	
Toe of North Bank			3/7/2016	623.57	
Toe of South Bank			3/7/2016	624.04	
Top of South Bank			3/7/2016	630.52	
Transect 3					
Top of North Bank			3/7/2016	628.20	
Toe of North Bank			3/7/2016	622.70	
Toe of South Bank			3/7/2016	622.88	
Top of South Bank			3/7/2016	628.18	
Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-26 (Groundwater)	631.93	5-15'	3/11/2013	9.98	621.95
			4/5/2013	9.52	622.41
			4/29/2013	9.21	622.72
			1/21/2014	5.80	626.13
			7/29/2014	5.79	626.14
			9/23/2014	8.9	623.03
			6/12/2015	5.32	626.61
			9/8/2015	5.72	626.21
			12/17/2015	5.32	626.61
			2/29/2016	5.41	626.52
			6/1/2016	5.47	626.46
			9/8/2016	5.51	626.42
			12/2/2016	5.65	626.28
			3/2/2017	5.81	626.12
			5/4/2017	6.21	625.72
			8/28/2017	5.56	626.37
			11/27/2017	5.71	626.22
			2/15/2018	5.75	626.18
			5/9/2018	5.65	626.28
			9/24/2018	NA	NA
			12/4/2018	5.60	626.33
			3/7/2019	5.64	626.29
			6/3/2019	5.92	626.01
			9/9/2019	5.87	626.06
			12/2/2019	5.63	626.30
			2/26/2020	5.71	626.22
			5/27/2020	4.67	627.26
			8/27/2020	6.12	625.81
12/8/2020	5.41	626.52			
3/4/2021	5.62	626.31			

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-29 (Groundwater)	633.51	4.5-14.5	3/11/2013	13.08	620.43
			4/5/2013	6.96	626.55
			4/29/2013	6.56	626.95
			1/21/2014	6.62	626.89
			7/29/2014	6.57	626.94
			9/23/2014	6.04	627.47
			6/12/2015	5.21	628.30
			9/8/2015	6.35	627.16
			12/17/2015	5.67	627.84
			2/29/2016	5.79	627.72
			6/1/2016	5.69	627.82
			9/8/2016	5.67	627.84
			12/2/2016	6.25	627.26
			3/2/2017	6.51	627.00
			5/4/2017	5.80	627.71
			8/28/2017	5.90	627.61
			11/27/2017	6.77	626.74
			2/15/2018	6.77	626.74
			5/9/2018	5.95	627.56
			9/24/2018	NA	NA
			12/4/2018	6.12	627.39
			3/7/2019	6.07	627.44
			6/3/2019	6.27	627.24
			9/9/2019	6.25	627.26
			12/2/2019	6.27	627.24
			2/26/2020	5.18	628.33
			5/27/2020	5.09	628.42
			8/27/2020	6.96	626.55
			12/8/2020	6.06	627.45
			3/4/2021	6.12	627.39
MW-31 (Groundwater)	636.71	8-23	5/13/2013	10.58	626.13
			1/21/2014	10.87	625.84
			7/29/2014	10.81	625.90
			9/23/2014	11.32	625.39
			6/12/2015	9.61	627.10
			9/8/2015	10.53	626.18
			12/17/2015	9.42	627.29
			2/29/2016	9.78	626.93
			6/1/2016	9.82	626.89
			9/8/2016	9.90	626.81
			12/2/2016	10.21	626.50
			3/2/2017	12.23	624.48
			5/4/2017	10.58	626.13
			8/28/2017	9.99	626.72
			11/27/2017	10.82	625.89
			2/15/2018	10.90	625.81
			5/9/2018	10.19	626.52
			9/24/2018	NA	NA
			12/4/2018	10.42	626.29
			3/7/2019	10.13	626.58
			6/3/2019	10.31	626.40
			9/9/2019	10.51	626.20
			12/2/2019	9.85	626.86
			2/26/2020	8.96	627.75
			5/27/2020	8.54	628.17
			8/27/2020	10.56	626.15
			12/8/2020	9.71	627.00
			3/4/2021	9.79	626.92

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-32 (Perched)	630.96	2.5-5	1/21/2014	4.16	626.80
			7/29/2014	4.59	626.37
			9/23/2014	4.59	626.37
			6/12/2015	3.79	627.17
			9/8/2015	R	R
			2/29/2016	3.57	627.39
			6/1/2016	3.62	627.34
			9/8/2016	3.83	627.13
			12/2/2016	3.40	627.56
			3/2/2017	3.26	627.70
			5/4/2017	3.49	627.47
			8/28/2017	3.55	627.41
			11/27/2017	3.54	627.42
			2/15/2018	3.21	627.75
			5/9/2018	3.30	627.66
			9/24/2018	NA	NA
			12/4/2018	2.70	628.26
			3/7/2019	3.88	627.08
			6/3/2019	3.67	627.29
			9/9/2019	3.92	627.04
			12/2/2019	3.32	627.64
			2/26/2020	2.92	628.04
			5/27/2020	2.39	628.57
			8/27/2020	3.86	627.10
			12/8/2020	3.16	627.80
			3/4/2021	3.29	627.67
MW-33 (Perched)	632.59	2.5-5	1/21/2014	1.09	631.50
			7/29/2014	2.14	630.45
			9/23/2014	1.55	631.04
			12/17/2015	1.21	631.38
			2/29/2016	1.07	631.52
			6/1/2016	1.09	631.50
			9/8/2016	1.07	631.52
			12/2/2016	0.95	631.64
			3/2/2017	0.88	631.71
			5/4/2017	0.91	631.68
			8/28/2017	0.86	631.73
			11/27/2017	0.85	631.74
			2/15/2018	0.81	631.78
			5/9/2018	0.80	631.79
			9/24/2018	NA	NA
			12/4/2018	0.95	631.64
			3/7/2019	0.64	631.95
			6/3/2019	0.92	631.67
			9/9/2019	1.13	631.46
			12/2/2019	0.33	632.26
			2/26/2020	0.39	632.20
			5/27/2020	0.16	632.43
			8/27/2020	0.99	631.60
			12/8/2020	0.46	632.13
			3/4/2021	0.72	631.87
MW-34 (Perched)	632.83	2.5-5	1/21/2014	4.31	628.52
			7/29/2014	4.45	628.38
			9/23/2014	4.45	628.38
			6/12/2015	3.42	629.41
			12/17/2015	3.03	629.80
			2/29/2016	1.95	630.88
			6/1/2016	2.04	630.79
			9/8/2016	2.59	630.24
			12/2/2016	2.50	630.33
			3/2/2017	2.75	630.08
			5/4/2017	3.93	628.90
			8/28/2017	2.95	629.88
			11/27/2017	3.62	629.21
			2/15/2018	3.71	629.12
			5/9/2018	3.57	629.26
			9/24/2018	NA	NA
			12/4/2018	3.08	629.75
			3/7/2019	3.41	629.42
			6/3/2019	3.17	629.66
			9/9/2019	3.31	629.52
			12/2/2019	2.89	629.94
			2/26/2020	1.37	631.46
			5/27/2020	1.86	630.97
			8/27/2020	3.49	629.34
			12/8/2020	2.58	630.25
			3/4/2021	2.76	630.07

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-35 (Perched)	632.55	2.5-5	1/21/2014	DRY	DRY
			7/29/2014	DRY	DRY
			9/23/2014	DRY	DRY
			6/12/2015	4.97	627.58
			9/8/2015	DRY	DRY
			12/17/2015	4.10	628.45
			2/29/2016	3.86	628.69
			6/1/2016	3.99	628.56
			9/8/2016	4.13	628.42
			12/2/2016	3.85	628.70
			3/2/2017	3.94	628.61
			5/4/2017	4.58	627.97
			8/28/2017	4.16	628.39
			11/27/2017	3.98	628.57
			2/15/2018	3.81	628.74
			5/9/2018	3.92	628.63
			9/24/2018	NA	NA
			12/4/2018	3.74	628.81
			3/7/2019	3.65	628.90
			6/3/2019	3.91	628.64
			9/9/2019	4.05	628.50
			12/2/2019	4.06	628.49
			2/26/2020	3.89	628.66
			5/27/2020	2.95	629.60
			8/27/2020	4.52	628.03
			12/8/2020	4.06	628.49
			3/4/2021	4.22	628.33
MW-46 (Groundwater)	630.98	10-20	1/21/2014	5.21	625.77
			7/29/2014	5.47	625.51
			9/23/2014	5.08	625.90
			6/12/2015	5.50	625.48
			9/8/2015	4.17	626.81
			2/29/2016	5.23	625.75
			6/1/2016	5.30	625.68
			9/8/2016	5.41	625.57
			12/2/2016	4.96	626.02
			3/2/2017	5.00	625.98
			5/4/2017	5.50	625.48
			8/28/2017	4.44	626.54
			11/27/2017	5.41	625.57
			2/15/2018	5.81	625.17
			5/9/2018	4.24	626.74
			9/24/2018	NA	NA
			12/4/2018	4.61	626.37
			3/7/2019	4.29	626.69
			6/3/2019	4.61	626.37
			9/9/2019	4.41	626.57
			12/2/2019	4.32	626.66
			2/26/2020	3.29	627.69
			5/27/2020	3.26	627.72
			8/27/2020	4.89	626.09
			12/8/2020	4.21	626.77
			3/4/2021	4.42	626.56

Notes:

1. bgs - below ground surface.
2. msl - above mean sea level.
3. btoc - below top of casing.
4. R - depth to groundwater was disqualified as a field error because depth was greater than total depth of the well.
5. NA - not accessible due to Site conditions.

Prepared by: SNR 04/13/2021

Checked by: EPF 04/23/2021

Reviewed by: AMF 06/22/2021

Table 3
French Drain Water
Analytical Data

	Sample ID FD031021-01		Sample ID FD031021-02	
	Laboratory ID 21030257-001		Laboratory ID 21030257-002	
	Date Collected 3/10/2021 10:45		Date Collected 3/10/2021 10:45	
Metals				
Parameter:	Result	Units	Result	Units
Arsenic	NA	mg/L	ND	mg/L
Barium	NA	mg/L	0.037	mg/L
Cadmium	NA	mg/L	ND	mg/L
Chromium	NA	mg/L	0.010	mg/L
Copper	NA	mg/L	ND	mg/L
Iron	NA	mg/L	ND	mg/L
Lead	NA	mg/L	0.005	mg/L
Manganese	NA	mg/L	ND	mg/L
Nickel	NA	mg/L	ND	mg/L
Selenium	NA	mg/L	0.0112	mg/L
Silver	NA	mg/L	ND	mg/L
Zinc	NA	mg/L	0.005	mg/L
Mercury	NA	mg/L	ND	mg/L
General Chemistry				
Parameter:	Result	Units	Result	Units
Total Suspended Solids	ND	mg/L	NA	mg/L
Total Dissolved Solids	915	mg/L	NA	mg/L

Notes:

- 1) NA - Not Analyzed
- 2) ND - Not Detected
- 3) mg/L - milligrams per liter

Prepared by: SNR 04/06/2021

Checked by: EPF 04/23/2021

Reviewed by: AMF 06/22/2021



LEGEND

- Monitoring Well Location
- Transect Location
- French Drain
- Flood Wall
- Approximate Creek Centerline

NOTE(S)

1. ELEVATIONS SHOWN ARE MEASURED IN FEET ABOVE MEAN SEA LEVEL.

REFERENCE(S)

1. ELEVATIONS COLLECTED BY BRITTAIN & CRAWFORD, LLC ON MARCH 7, 2016
2. AERIAL IMAGERY - APRIL, 2017

CLIENT

FRISCO COMMUNITY DEVELOPMENT CORPORATION

PROJECT

FRENCH DRAIN QUARTERLY REPORT
FRISCO, TEXAS

TITLE

STEWART CREEK TRANSECTS

CONSULTANT	YYYY-MM-DD	2020-12-02
DESIGNED	JWT	
PREPARED	JWT	
REVIEWED	EPF	
APPROVED	AMF	

PROJECT NO. 130208605

CONTROL 1302086Y003

REV. 0

FIGURE 1

Friday, March 19, 2021

Frisco Community Development Corp/City of Fri
Eduardo Salazar
6101 Frisco Square Blvd
Frisco, Texas 75034
Tel: (972) 335-2121 Fax:
esalazar@friscotexas.gov

Re: Project Name: F.C.D.C / Former Exide Technologies
Project Number: Influent water flows
Project Location: 7471 Fifth Street Frisco, Texas 75034

Oxidor received 6 liquid sample(s). The analysis performed were as follows:

<u>Sample</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Analysis</u>
21030257-001	FD031021-01	Liquid	3/10/2021 10:45	Total Dissolved Solids, Total Suspended Solids
21030257-002	FD031021-02	Liquid	3/10/2021 10:45	Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Zinc
21030257-003	SO031021-01	Liquid	3/10/2021 10:30	Total Dissolved Solids, Total Suspended Solids
21030257-004	SO031021-02	Liquid	3/10/2021 10:30	Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Zinc
21030257-005	L031021-01	Liquid	3/10/2021 12:30	Total Dissolved Solids, Total Suspended Solids
21030257-006	L031021-02	Liquid	3/10/2021 12:30	Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Zinc

To the best of my knowledge, all problems/ anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified via associated flags and/ or in the case narrative. The analyses and data met requirements of NELAP except where noted. All non-NELAP methods are identified accordingly and all estimated uncertainties of test results are within method or EPA specifications.

Respectfully submitted,



Charles Brungardt
President

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Analytical Report

Project Name: **F.C.D.C / Former Exide Technologies**

Customer Sample ID: **FD031021-01**

Oxidor Sample ID: 21030257-001

Sample Received: 3/11/2021

Matrix: **Liquid**

Sample Collected: **3/10/2021 10:45**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
General Chemistry								
Total Dissolved Solids	25	25.0	915	mg/L	03/15/21 15:40	SM-2540-C	K.V.	
Total Suspended Solids	5	5.0	ND	mg/L	03/15/21 09:50	SM-2540-D	K.V.	

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Analytical Report

Project Name: **F.C.D.C / Former Exide Technologies**

Customer Sample ID: **FD031021-02**

Oxidor Sample ID: 21030257-002

Sample Received: 3/11/2021

Matrix: **Liquid**

Sample Collected: **3/10/2021 10:45**

Parameter	MQL	SQL	Result	Units	Date Analyzed	Method	Analyst	Flags
Metals								
<i>Digested by method 200.8 on 03/12/21 at 13:30</i>								
Arsenic	0.005	0.005	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Barium	0.005	0.005	0.037	mg/L	03/15/21 16:25	200.8	K.E.L.	
Cadmium	0.001	0.0010	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Chromium	0.005	0.005	0.010	mg/L	03/15/21 16:25	200.8	K.E.L.	
Copper	0.005	0.0050	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Iron	0.5	0.50	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Lead	0.005	0.005	0.005	mg/L	03/15/21 16:25	200.8	K.E.L.	
Manganese	0.002	0.002	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Nickel	0.005	0.005	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Selenium	0.005	0.0050	0.0112	mg/L	03/15/21 16:25	200.8	K.E.L.	
Silver	0.001	0.001	ND	mg/L	03/15/21 16:25	200.8	K.E.L.	
Zinc	0.005	0.005	0.005	mg/L	03/15/21 16:25	200.8	K.E.L.	
<i>Digested by method 245.1 on 03/16/21 at 11:04</i>								
Mercury	0.0002	0.0002	ND	mg/L	03/16/21 16:11	245.1	C.L.B.	

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Sample Cross Reference

Project Name: **F.C.D.C / Former Exide Technologies**

Customer ID:	Lab ID:	Test	Method	QCBatchID:
FD031021-01	21030257-001	Total Dissolved Solids	SM-2540-C	TDS__13227_L
		Total Suspended Solids	SM-2540-D	TSS__12845_L
FD031021-02	21030257-002	Mercury	245.1	MERC_07147_L
		Arsenic	200.8	META_07480_L
		Selenium	200.8	META_07480_L
		Silver	200.8	META_07480_L
		Zinc	200.8	META_07480_L
		Manganese	200.8	META_07480_L
		Lead	200.8	META_07480_L
		Iron	200.8	META_07480_L
		Copper	200.8	META_07480_L
		Chromium	200.8	META_07480_L
		Nickel	200.8	META_07480_L
		Barium	200.8	META_07480_L
		Cadmium	200.8	META_07480_L
SO031021-01	21030257-003	Total Dissolved Solids	SM-2540-C	TDS__13327_L
		Total Suspended Solids	SM-2540-D	TSS__12845_L
SO031021-02	21030257-004	Mercury	245.1	MERC_07147_L
		Copper	200.8	META_07480_L
		Silver	200.8	META_07480_L
		Selenium	200.8	META_07480_L
		Nickel	200.8	META_07480_L
		Manganese	200.8	META_07480_L
		Iron	200.8	META_07480_L
		Chromium	200.8	META_07480_L
		Zinc	200.8	META_07480_L
		Cadmium	200.8	META_07480_L
		Barium	200.8	META_07480_L
		Arsenic	200.8	META_07480_L
		Lead	200.8	META_07480_L
L031021-01	21030257-005	Total Dissolved Solids	SM-2540-C	TDS__13327_L
		Total Suspended Solids	SM-2540-D	TSS__12845_L
L031021-02	21030257-006	Mercury	245.1	MERC_07147_L
		Lead	200.8	META_07480_L
		Arsenic	200.8	META_07480_L
		Barium	200.8	META_07480_L
		Cadmium	200.8	META_07480_L
		Chromium	200.8	META_07480_L
		Iron	200.8	META_07480_L
		Manganese	200.8	META_07480_L
		Nickel	200.8	META_07480_L
		Selenium	200.8	META_07480_L
		Silver	200.8	META_07480_L
		Zinc	200.8	META_07480_L
		Copper	200.8	META_07480_L

Frisco Community Development Corp/City of Fri
Eduardo Salazar

QC Summary

Project Name: **F.C.D.C / Former Exide Technologies**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
QCBatchID TDS__13227_L									
Blank	Total Dissolved Solids	ND mg/L							
LCS	Total Dissolved Solids	990 mg/L		1000 mg/L	99%	90-110%			
LCSD	Total Dissolved Solids	995 mg/L		1000 mg/L	100%	90-110%	0.5%	0-5%	
Replicate	Total Dissolved Solids	53600 mg/L	53700 mg/L				0.2%	0-5%	
QCBatchID TDS__13327_L									
Blank	Total Dissolved Solids	ND mg/L							
LCS	Total Dissolved Solids	995 mg/L		1000 mg/L	100%	90-110%			
LCSD	Total Dissolved Solids	985 mg/L		1000 mg/L	99%	90-110%	1.0%	0-5%	
Replicate	Total Dissolved Solids	12200 mg/L	12200 mg/L				0.0%	0-5%	
QCBatchID TSS__12845_L									
Blank	Total Suspended Solids	ND mg/L							
LCS	Total Suspended Solids	484 mg/L		500 mg/L	97%	85-115%			
LCSD	Total Suspended Solids	514 mg/L		500 mg/L	103%	85-115%	6.0%	0-15%	
Replicate	Total Suspended Solids	224 mg/L	232 mg/L				3.5%	0-15%	
QCBatchID MERC_07147_L									
Blank	Mercury	ND mg/L							
LCS	Mercury	0.0095 mg/L		0.01 mg/L	95%	85-115%			
LCSD	Mercury	0.0095 mg/L		0.01 mg/L	95%	85-115%	0.2%	0-25%	
MS	Mercury	0.0095 mg/L	ND	0.01 mg/L	95%	80-120%			
MSD	Mercury	0.0096 mg/L	ND	0.01 mg/L	96%	80-120%	1.3%	0-25%	
QCBatchID META_07480_L									
Blank	Arsenic	ND mg/L							
	Barium	ND mg/L							
	Cadmium	ND mg/L							
	Chromium	ND mg/L							
	Copper	ND mg/L							
	Iron	ND mg/L							
	Lead	ND mg/L							
	Manganese	ND mg/L							
	Nickel	ND mg/L							
	Selenium	ND mg/L							
	Silver	ND mg/L							
	Zinc	ND mg/L							
LCS	Arsenic	0.520 mg/L		0.5 mg/L	104%	85-115%			
	Barium	0.517 mg/L		0.5 mg/L	103%	85-115%			
	Cadmium	0.5374 mg/L		0.5 mg/L	108%	85-115%			
	Chromium	0.526 mg/L		0.5 mg/L	105%	85-115%			
	Copper	0.4981 mg/L		0.5 mg/L	100%	85-115%			
	Iron	53.8 mg/L		50.5 mg/L	107%	85-115%			
	Lead	0.523 mg/L		0.5 mg/L	105%	85-115%			

Frisco Community Development Corp/City of Fri
Eduardo Salazar

QC Summary

Project Name: **F.C.D.C / Former Exide Technologies**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
QCBatchID META_07480_L									
	Manganese	0.529 mg/L		0.5 mg/L	106%	85-115%			
	Nickel	0.523 mg/L		0.5 mg/L	105%	85-115%			
	Selenium	0.5221 mg/L		0.5 mg/L	104%	85-115%			
	Silver	0.491 mg/L		0.5 mg/L	98%	85-115%			
	Zinc	0.499 mg/L		0.5 mg/L	100%	85-115%			
LCSD	Arsenic	0.519 mg/L		0.5 mg/L	104%	85-115%	0.3%	0-20%	
	Barium	0.514 mg/L		0.5 mg/L	103%	85-115%			
	Cadmium	0.5367 mg/L		0.5 mg/L	107%	85-115%	0.1%	0-20%	
	Chromium	0.520 mg/L		0.5 mg/L	104%	85-115%	1.1%	0-20%	
	Copper	0.5046 mg/L		0.5 mg/L	101%	85-115%	1.3%	0-20%	
	Iron	53.9 mg/L		50.5 mg/L	107%	85-115%	0.2%	0-20%	
	Lead	0.539 mg/L		0.5 mg/L	108%	85-115%	3.0%	0-20%	
	Manganese	0.526 mg/L		0.5 mg/L	105%	85-115%	0.7%	0-20%	
	Nickel	0.520 mg/L		0.5 mg/L	104%	85-115%	0.7%	0-20%	
	Selenium	0.5289 mg/L		0.5 mg/L	106%	85-115%	1.3%	0-20%	
	Silver	0.490 mg/L		0.5 mg/L	98%	85-115%			
	Zinc	0.505 mg/L		0.5 mg/L	101%	85-115%	1.2%	0-20%	
MS	Arsenic	0.530 mg/L	ND	0.5 mg/L	93%	80-120%			
	Barium	0.543 mg/L	0.018 mg/L	0.5 mg/L	105%	80-120%			
	Cadmium	0.5944 mg/L	0.0674 mg/L	0.5 mg/L	105%	80-120%			
	Chromium	0.532 mg/L	0.007 mg/L	0.5 mg/L	105%	80-120%			
	Copper	0.5292 mg/L	0.0168 mg/L	0.5 mg/L	103%	80-120%			
	Iron	54.7 mg/L	0.104 mg/L	50.5 mg/L	108%	80-120%			
	Lead	0.528 mg/L	ND	0.5 mg/L	106%	80-120%			
	Manganese	0.523 mg/L	0.002 mg/L	0.5 mg/L	104%	80-120%			
	Nickel	0.523 mg/L	ND	0.5 mg/L	105%	80-120%			
	Selenium	0.5290 mg/L	ND	0.5 mg/L	106%	80-120%			
	Silver	0.491 mg/L	ND	0.5 mg/L	98%	80-120%			
	Zinc	0.512 mg/L	0.007 mg/L	0.5 mg/L	101%	80-120%			
MSD	Arsenic	0.517 mg/L	ND	0.5 mg/L	90%	80-120%	2.4%	0-20%	
	Barium	0.534 mg/L	0.018 mg/L	0.5 mg/L	103%	80-120%	1.7%	0-20%	
	Cadmium	0.5849 mg/L	0.0674 mg/L	0.5 mg/L	104%	80-120%	1.6%	0-20%	
	Chromium	0.515 mg/L	0.007 mg/L	0.5 mg/L	102%	80-120%	3.3%	0-20%	
	Copper	0.5174 mg/L	0.0168 mg/L	0.5 mg/L	100%	80-120%	2.3%	0-20%	
	Iron	53.2 mg/L	0.104 mg/L	50.5 mg/L	105%	80-120%	2.8%	0-20%	
	Lead	0.526 mg/L	ND	0.5 mg/L	105%	80-120%	0.5%	0-20%	
	Manganese	0.518 mg/L	0.002 mg/L	0.5 mg/L	103%	80-120%	1.0%	0-20%	
	Nickel	0.507 mg/L	ND	0.5 mg/L	101%	80-120%	3.1%	0-20%	
	Selenium	0.5178 mg/L	ND	0.5 mg/L	104%	80-120%	2.1%	0-20%	
	Silver	0.517 mg/L	ND	0.5 mg/L	104%	80-120%	5.2%	0-20%	
	Zinc	0.497 mg/L	0.007 mg/L	0.5 mg/L	98%	80-120%	3.0%	0-20%	

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Case Narrative

Project Name: **F.C.D.C / Former Exide Technologies**

D-1	Elevated reporting limit(s) due to dilution. Dilution resulted from sample matrix interference, high target analyte(s), high non-target analyte(s) or a combination thereof.
ppm	Parts per million = mg/Kg or mg/L
ppb	Parts per billion = ug/Kg or ug/L
MQL	Method quantitation limit
SDL	Sample detection limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilutions)
SQL	Sample quantitation limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilution)
ND	Analyte not detected at or above SQL
LCS/LCSD	Laboratory control spike / Laboratory control spike duplicate
MS/MSD	Matrix spike / Matrix spike duplicate
RPD	Relative percent difference
Sub	Analysis performed by subcontract laboratory

Solid samples submitted to the laboratory for analysis by SW-846 Method 8260 should be collected by SW-846 Method 5035. Those samples in which concentrations are less than or equal to 200 ug/kg should be collected in accordance with SW-846 Method 5035, Section 6.2.1. For samples with higher concentrations (> 200 ug/kg), collect samples by SW-846 Method 5035, Section 6.2.2 or 6.2.3. Sample results may not accurately reflect volatile concentrations if collection is not performed according to the referenced methodologies.

Solid samples submitted to the laboratory for analysis by TNRCC Method 1005 should be collected in accordance to the methodology. Those samples in which concentrations of C6 to C12 are known to be absent, or fall under the Petroleum Storage Tank (PST) rule, may be collected in bulk sample jars in accordance with TNRCC Method 1005, Revision 3 clarifications. For samples with concentrations of C6 to C12, or where knowledge of the site does not exist, collect samples by TNRCC Method 1005, Section 6.1. Sample results may not accurately reflect TPH concentrations if collection is not performed according to the referenced methodologies.

Solid sample results reported on a dry weight basis for all applicable analysis, unless otherwise noted. Dry weight calculations based upon % solids obtained as outlined in EPA method 5035 section 7.5.

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Oxidor Laboratories, LLC certifies to the best of its knowledge that all results contained in this report are consistent with the National Environmental Laboratory Accreditation Program, except where otherwise noted.

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Sample Preservation Verification

Project Name: **F.C.D.C / Former Exide Technologies**

Receipt temp: **1.5 °C on Ice**

Receipt method: **Customer Courier**

Custody seal intact: **Yes**

All samples / labels received intact: **Yes**

Customer Sample ID: **FD031021-01**

Oxidor Sample ID: **21030257-001**

Collected: **03/10/21 10:45**

Collected By: **Eduardo Salazar**

Collector Affiliation: **City of Frisco**

Matrix: **Liquid**

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated / Observed Preservation</u>	<u>pH</u>
1000 mL Plastic	1	Grab		Temp	-

Customer Sample ID: **FD031021-02**

Oxidor Sample ID: **21030257-002**

Collected: **03/10/21 10:45**

Collected By: **Eduardo Salazar**

Collector Affiliation: **City of Frisco**

Matrix: **Liquid**

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated / Observed Preservation</u>	<u>pH</u>
250 mL Plastic	1	Grab		HNO3	<2

Customer Sample ID: **SO031021-01**

Oxidor Sample ID: **21030257-003**

Collected: **03/10/21 10:30**

Collected By: **Eduardo Salazar**

Collector Affiliation: **City of Frisco**

Matrix: **Liquid**

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated / Observed Preservation</u>	<u>pH</u>
1000 mL Plastic	1	Grab		Temp	-

Customer Sample ID: **SO031021-02**

Oxidor Sample ID: **21030257-004**

Collected: **03/10/21 10:30**

Collected By: **Eduardo Salazar**

Collector Affiliation: **City of Frisco**

Matrix: **Liquid**

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated / Observed Preservation</u>	<u>pH</u>
250 mL Plastic	1	Grab		HNO3	<2

Customer Sample ID: **L031021-01**

Oxidor Sample ID: **21030257-005**

Collected: **03/10/21 12:30**

Collected By: **Eduardo Salazar**

Collector Affiliation: **City of Frisco**

Matrix: **Liquid**

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated / Observed Preservation</u>	<u>pH</u>
1000 mL Plastic	1	Grab		Temp	-

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Sample Preservation Verification

Project Name: **F.C.D.C / Former Exide Technologies**

Customer Sample ID: **L031021-02**

Collected By: **Eduardo Salazar**

Oxidor Sample ID: **21030257-006**

Collector Affiliation: **City of Frisco**

Collected: **03/10/21 12:30**

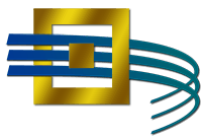
Matrix: **Liquid**

Indicated / Observed

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Preservation</u>	<u>pH</u>
250 mL Plastic	1	Grab		HNO3	<2

Sample conditions at time of receipt at laboratory verified in part or in whole by:

A.J.



Documentation

PROJECT DESCRIPTION: **F.C.D.C / Former Exide Technologies**

Frisco Community Development Corporation

6101 Frisco Square Blvd
Frisco, TX 75034
Telephone 972-335-2121
Facsimile 972-377-2707

CHAIN OF CUSTODY RECORD

INDUSTRY: F.C.D.C / Former Exide Technologies	OUTFALL: Influent water flows	SAMPLER: Eduardo Salazar
ADDRESS: 7471 Fifth Street Frisco, Texas 75034	NATURE OF INDUSTRY: Former Secondary Smelting	REPRESENTING: City of Frisco
INDUSTRY REPRESENTATIVE (S): Eduardo Salazar		SIGNATURE: <i>Eduardo Salazar</i>

SAMPLE No. / IDENTIFICATION	DATE (S)	TIME (S)	SAMPLE TYPE **	ANALYSES REQUESTED	pH	DATE TIME	INITIALS	PRESERVATION/REMARKS/CONTAINERS / ALL SAMPLES COOL ≤ 6° C	INITIALS
24030257									
FD031021-01	03/10/21	10:45 am	Grab	TDS-TSS	10.0			None/1 liter	ES
FD031021-02	03/10/21	10:45 am	Grab	As,Cd,Cu,Mn, Ni,Ag,Fe,Ba,C r,Pb,Hg,Se,Zn	10.0			HN03//250ml/plastic	ES
SO031021-01	03/10/21	10:30 am	Grab	TDS-TSS	3.7			None/1 liter	ES
SO031021-02	03/10/21	10:30 am	Grab	As,Cd,Cu,Mn, Ni,Ag,Fe,Ba,C r,Pb,Hg,Se,Zn	3.7			HN03//250ml/plastic	ES
L031021-01	03/10/21	12:30 pm	Grab	TDS-TSS	13.2			None/1 liter	ES
L031021-02	03/10/21	12:30 pm	Grab	As,Cd,Cu,Mn, Ni,Ag,Fe,Ba,C r,Pb,Hg,Se,Zn	13.2			HN03//250ml/plastic	ES

001
002
003
004
005
006

FIELD INFORMATION: Raw Grab Samples Quarterly E-MAIL RESULTS TO Billy.king@netc@gmail.com ESalazar@friscotexas.gov

USE WASTE WATER REPORT FORMAT

RELINQUISHED BY: (Signature)	REPRESENTING	DATE	TIME	RECEIVED BY: (Signature)	REPRESENTING	DATE	TIME
<i>Eduardo Salazar</i>	FC	3/11/21	9:45 am	<i>Billy King</i>	JCS6	3/11/2021	9:45 AM
RELINQUISHED BY: (Signature)	REPRESENTING	DATE	TIME	RECEIVED BY: (Signature)	REPRESENTING	DATE	TIME
<i>Billy King</i>	JCS6	3/11/21	12:45 PM	<i>Eduardo Salazar</i>	JCS6	3/11/21	12:45

1.50 x 10⁴

** TC = TIME COMPOSITE (96 PARTS) FC = FLOW WEIGHTED COMPOSITE (96 PARTS) G = GRAB