ATTACHMENT 14

TCAP

Memorandum

To: South Texas Water Authority Board of Directors
From: Carola G. Serrato, Executive Director
Date: April 23, 2020
Re: Strategic Hedging Program (SHP) – TCAP Contract for Services – Commercial Electricity Service Agreement (CESA)

Background:

During the last meeting, the Board tabled action on the Strategic Hedging Program (SHP). During the February Board meeting, the Board indicated an interest in whether the City of Kingsville would be participating in the Program. Enclosed is the latest email correspondence from TCAP regarding the entities that have formally approved the SHP contracts. The names of entities whose governmental bodies will be considering taking action in the near future are also enclosed. In addition, attached is a copy of the memo from Kingsville City Attorney Courtney Alvarez recommending to the Kingsville Council to adopt a resolution to participate in SHP as well as execute the CESA with GEXA.

Analysis:

There are the two agreements that must be executed if STWA decides to participate in SHP. It is not required to purchase energy under SHP and STWA can remain on a fixed pricing. At this time, the price of oil and gas has fallen to all-time lows. Enclosed is a NPR article on that subject. How long the decrease in demand and COVID-19 pandemic affects prices is unknown. In the last memo, staff indicated that purchasing under the SHP would begin close to the end of calendar year 2020. However, as described in the last memo, every month under the SHP one-twelfth of needs are purchased. Again, it is not certain whether the financial environment after COVID-19 will result in a gradual increase in prices or frequent fluctuations. It is important to note that there is a possibility of a recurrence of COVID-19 this coming Fall 2020.

Staff Recommendation:

As before, staff recommends that the Board table this item.

Board Action:

Determine whether to table action, participate in SHP or remain on a fixed pricing program. If selecting SHP, authorize execution of the contracts between TCAP/STWA and STWA/GEXA.

Summarization:

As a reminder, a decision by September will be necessary.

City of Kingsville
Legal Department

TO: Mayor and City Commissioners

CC: Mark McLaughlin, City Manager

FROM: Courtney Alvarez, City Attorney

DATE: April 17, 2020

SUBJECT: Resolution regarding TCAP PSA & CESA

Summary: Consider a resolution executing a Professional Services Agreement (PSA) with Texas Coalition for Affordable Power (TCAP) for the purchase of electricity and participation in Strategic Hedging Program (SHP) and executing a Commercial Electric Services Agreement (CESA) with Gexa Energy for power to be provided on and after January 1, 2023.

Background:

When the Texas Legislature deregulated the state's electricity market in 2001, Cities Aggregation Power Project and South Texas Aggregation Project (STAP) were formed to buy power in blocks for governmental entities. In 2010, CAPP and STAPP merged to form TCAP. TCAP is a non-profit organization committed to providing electricity at the lowest possible cost to it's members who are all public entities. TCAP has previously used fixed cost contracts covering 5 years in an attempt to lock in the lowest price available leading up to contract execution dates. The City currently has a contract with TCAP that covers 2018-2022. TCAP has designed a new procurement strategy that will involve TCAP initially committing to purchase power two years in advance of delivery on behalf of its members who desire participation in a SHP that will involve a series of monthly competitive auctions.

The Professional Services Agreement (PSA) enumerates services and benefits to members of TCAP and provides TCAP with specific authority to procure power in the wholesale market on behalf of members who choose to participate in the SHP. The PSA is a relational contract that defines services provided by TCAP to members regardless of whether a member decides to commit to the SHP. The attached PSA will provide TCAP with an agreement to procure energy on behalf of member cities at the best and lowest price either by SHP or, if market conditions dictate, fixed rate contracts.

The PSA and SHP have built in time periods that entities may exit SHP if they desire to return to a fixed rate contract. In addition, TCAP will move entities to a fixed rate contract if market conditions become unfavorable for SHP (ie, rising rates with no expectation rates will return to lower levels).

The industry-standard retail contract offered by a Retail Electric Provider (REP) is a Commercial Electric Service Agreement (CESA). TCAP negotiated modifications to the current CESA between the City and Gexa Energy, the current REP, to reflect participation in the SHP. The CESA will facilitate participation in the SHP effective for power deliveries in and beyond 2023.

Financial Impact: None. (In FY22-23, the new rates will be known and implemented.)

Recommendation: Staff recommends approval of the resolution to execute a Professional Services Agreement with TCAP for the purchase of electricity and participate in the SHP and to execute the CESA with Gexa Energy.

RESOLUTION #2020-_____

A RESOLUTION OF THE CITY OF KINGSVILLE, TEXAS, ADOPTING TCAP'S PROFESSIONAL SERVICES AGREEMENT AND GEXA ENERGY'S COMMERCIAL ELECTRIC SERVICE AGREEMENT FOR POWER TO BE PROVIDED ON AND AFTER JANUARY 1, 2023.

WHEREAS, the City of Kingsville, Texas (City) is a member of Texas Coalition for Affordable Power, Inc. (TCAP), a non-profit, political subdivision corporation of the State of Texas; and

WHEREAS, TCAP has previously arranged for the City to purchase power through Gexa Energy with a contract set to expire December 31, 2022; and

WHEREAS, TCAP has designed a new procurement strategy that will involve TCAP initially committing to purchase power two years in advance of delivery on behalf of its members who desire participation in a Strategic Hedging Program ("SHP") that will involve a series of monthly competitive auctions; and

WHEREAS, TCAP has prepared a Professional Services Agreement ("PSA"), attached as Exhibit A, that, in addition to enumerating services and benefits to members of TCAP, provides TCAP with specific authority to procure power in the wholesale market on behalf of members who choose to participate in the SHP; and

WHEREAS, approval of the PSA is a necessary, but not sufficient, prerequisite to participation in the SHP; and

WHEREAS, the PSA is a relational contract that defines services provided by TCAP to members regardless of whether a member decides to commit to the SHP; and

WHEREAS, the industry-standard retail contract is a Commercial Electric Service Agreement ("CESA") offered by a Retail Electric Provider ("REP"); and

WHEREAS, TCAP has negotiated modifications to the current CESA between the City and Gexa Energy to reflect participation in the SHP; and

WHEREAS, the CESA that will facilitate participation in the SHP effective for power deliveries in and beyond 2023 (attached as Exhibit B) will need to be approved and signed prior to October 1, 2020; and

WHEREAS, the City desires to participate in the SHP.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF KINGSVLLE, TEXAS:

Section 1: That the City Manager is authorized to sign Exhibit ", TCAP's Professional Services Agreement, and Exhibit B, Gexa Energy's CESA, and send the agreements to TCAP, 15455 Dallas Parkway, Ste. 600, Addison, TX 75001.

Section 2: That all resolutions or parts of resolutions in conflict with this resolution are repealed to the extent of such conflict only.

Section 3: That this Resolution shall be and become effective on or after adoption.

PASSED AND APPROVED by a majority vote of the City Commission on this the 27th day of April, 2020.

_____
Sam R. Fugate, Mayor

ATTEST:

_____
Mary Valenzuela, City Secretary

APPROVED AS TO FORM

_____
Courtney Alvarez, City Attorney

mcgserrato@stwa.org

From: mcgserrato@stwa.org
Sent: Monday, April 20, 2020 3:13 PM
To: Margaret Somereve
Subject: FW: Free-Falling: U.S. Benchmark Oil Price Goes Negative As Demand Disappears

Margaret,

Since you offered, have TCAP's oil/gas pricing consultants reported on the COVID-19 situation and whether they expect prices to rebound quickly, over a given period of time or fluctuate for the next year or so?

Below is a link to a very interesting NPR article that paints a very bleak picture.

Carola

Carola G. Serrato
Executive Director
South Texas Water Authority
PO Box 1701
Kingsville, Texas 78364
361-592-9323 x112

From: Carola Serrato <mcgserrato@stwa.org>
Sent: Monday, April 20, 2020 2:51 PM
To: Carola Serrato <mcgserrato@stwa.org>
Subject: NPR: Free-Falling: U.S. Benchmark Oil Price Goes Negative As Demand Disappears

Free-Falling: U.S. Benchmark Oil Price Goes Negative As Demand Disappears
For the first time ever, a key oil benchmark, West Texas Intermediate, fell below zero on Monday. That means some traders, instead of paying money to buy oil, are paying to get rid of it.

Read in NPR: https://apple.news/AFxaWjBDtTYyNUTE2-_se4w

Shared from Apple News

Sent from my iPhone

Coronavirus Live Updates

THE CORONAVIRUS CRISIS

Free Fall: Oil Prices Go Negative

April 20, 2020 · 11:21 AM ET

CAMILA DOMONOSKE

Pump jacks draw crude oil near Long Beach, Calif., on March 9. A U.S. crude oil benchmark has hit record lows.

David McNew/AFP via Getty Images

Updated at 3:25 p.m. ET

For the first time ever, a key U.S. oil benchmark, West Texas Intermediate, went below zero on Monday as traders approach a deadline to find buyers.

That means some traders, instead of paying money to buy oil, are paying to get rid of it.

The unprecedented shift comes as global oil markets continue to grapple with a pandemic-driven collapse in demand.

At the start of 2020, a barrel of WTI cost around $60. Prices had dropped swiftly because of the coronavirus, landing at around $18 a barrel on Friday.

Then on Monday they plummeted through the floor. And kept going. WTI for May delivery settled at a negative $37.63 — meaning traders are paying $37.63 to get someone to accept a delivery of a barrel of oil.

The plunging price of WTI is driven by a trading contract deadline; oil traders have until Tuesday to sell off the current futures contract. And they need buyers who are capable of receiving and storing that much oil. Clearly, those buyers are in short supply.

Other types of crude, without a deadline coming up that quickly, have not dropped nearly so sharply.

But in general, crude oil prices are very low and continue to fall. Brent, an international benchmark, is in the mid-$20s and fell more than 9% on Monday.

Oil-producing countries and companies are trying to reduce their output, but they can't keep pace with the extremely rapid drop in global demand, as the world economy hits the brakes.

That's creating a massive oversupply of oil and raising concerns about where buyers will be able to physically store it all.

covid-19 coronavirus oil prices oil

mcgserrato@stwa.org

From: mcgserrato@stwa.org
Sent: Monday, April 20, 2020 2:01 PM
To: 'Margaret Somereve'
Subject: RE: Strategic Hedging Program

Thank-you, this is very helpful.

Carola G. Serrato
Executive Director
South Texas Water Authority
PO Box 1701
Kingsville, Texas 78364
361-592-9323 x112

From: Margaret Somereve <msomereve@tcaptx.com>
Sent: Monday, April 20, 2020 1:54 PM
To: mcgserrato@stwa.org
Subject: Re: Strategic Hedging Program

Carola,
This is what we have right now

Members with signed SHP agreements:

Aquilla Water District
City of Aubrey
Benbrook Library District
City of Benbrook
City of Brownwood
Calhoun Port Authority
City of Dalworthington Gardens
City of Dublin
City of Duncanville
City of Everman
City of Harker Heights
City of Ovilla
City of Prosper
City of Lyford
City of Roanoke
City of Robinson
City of Seadrift
City of Sinton
City of Watuaga

Members who councils said to bring the SHP documents for approval to council at a study session/work session meeting:
City of Allen

City of Victoria

Members who are currently working on getting the SHPs to council for approval:
City of Grand Prairie
City of Grapevine
City of Kingsville
City of Lewisvilleq
City of Pleasanton (went to council last week)

Hope this helps and let me know if you have any questions.
Margaret

On Mon, Apr 20, 2020, 1:42 PM <mcgserrato@stwa.org> wrote:

> Good Afternoon Margaret,
>
> Is it possible to get a list of the entities that have formally adopted to participate in the SHP?
>
> Carola
>
> Carola G. Serrato
>
> Executive Director
>
> **South Texas Water Authority**
>
> PO Box 1701
>
> Kingsville, Texas 78364
>
> 361-592-9323 x112

ATTACHMENT 15

Resolution 20-07

RESOLUTION 20-07

RESOLUTION OF THE SOUTH TEXAS WATER AUTHORITY ADOPTING TCAP'S PROFESSIONAL SERVICES AGREEMENT AND GEXA ENERGY'S COMMERCIAL ELECTRIC SERVICE AGREEMENT FOR POWER TO BE PROVIDED ON AND AFTER JANUARY 1, 2023

WHEREAS, the South Texas Water Authority ("Authority") is a member of Texas Coalition For Affordable Power, Inc. ("TCAP"), a non-profit, political subdivision corporation of the State of Texas; and

WHEREAS, TCAP has previously arranged for the Authority to purchase power through Gexa Energy with a contract set to expire December 31, 2022; and

WHEREAS, TCAP has designed a new procurement strategy that will involve TCAP initially committing to purchase power two years in advance of delivery on behalf of its members who desire participation in a Strategic Hedging Program ("SHP") that will involve a series of monthly competitive auctions; and

WHEREAS, TCAP has prepared a Professional Services Agreement ("PSA"), attached as Exhibit A, that, in addition to enumerating services and benefits to members of TCAP, provides TCAP with specific authority to procure power in the wholesale market on behalf of members who choose to participate in the SHP; and

WHEREAS, approval of the PSA is a necessary, but not sufficient, prerequisite to participation in the SHP; and

WHEREAS, the PSA is a relational contract that defines services provided by TCAP to members regardless of whether a member decides to commit to the SHP; and

WHEREAS, the industry-standard retail contract is a Commercial Electric Service Agreement ("CESA") offered by a Retail Electric Provider ("REP"); and

WHEREAS, TCAP has negotiated modifications to the current CESA between the Authority and Gexa Energy to reflect participation in the SHP; and

WHEREAS, the CESA that will facilitate participation in the SHP effective for power deliveries in and beyond 2023 (attached as Exhibit B) will need to be approved and signed prior to October 1, 2020; and

WHEREAS, the Authority desires to participate in the SHP.

THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SOUTH TEXAS WATER AUTHORITY:

SECTION 1. That the Executive Director is authorized to sign Exhibit A, TCAP's Professional Services Agreement, and Exhibit B, Gexa Energy's CESA, and send the agreements to TCAP, 15455 Dallas Parkway, Ste 600, Addison, TX 75001.

PASSED AND APPROVED this _____ day of _____, 2020.

_____
KATHLEEN LOWMAN, PRESIDENT

ATTEST:

_____
RUDY GALVAN, JR., SECRETARY/TREASURER

ATTACHMENT 16

Corrpro CIS

Memorandum

To: South Texas Water Authority Board of Directors
From: Carola G. Serrato, Executive Director
Date: April 23, 2020
Re: Cathodic Protection Services – Corrpro Services – CP Survey for Contract 1

Background:

During the last meeting, staff reported that O&M Supervisor Armando Yruegas continues to communicate with Aegion/Corrpro representatives regarding the report on the Closed Interval Survey (CIS) of Contract 1. Attached is the entire report, including the actual survey graphs. Also attached is the most recent email correspondence with a quote in the amount of $15,175 for Corrpro to perform the services that they recommend. As before, the standard of -850-mA is used to determine whether a section of pipe is adequately protected or not. This delineation is shown as a dashed red line on the report graphs.

Analysis:

When reviewing the graphs it should be noted there are several areas where a break in the readings appears. Those gaps are actually road crossings. For example, on page 16 of 52, there is a break between station 151+70 and station 152+20. The gap is County Road 4. These gaps can be found on pages 17, 22, 23, 24, 25, 28, 30, 40, 46 and 51.

The following is a breakdown of the areas meeting the -850-mA standard and those areas that do not reach the required level to be considered adequately protected:

- Pages 1 through 5 of the survey show readings of about -650-mA to -700-mA.
- On page 5 around station 41+60, there is a noticeable jump in the readings from about -750-mA to just under/over -850mA. These readings continue from that station to 81+90 (around 4,000 lf).
- Another increase occurs with readings in the -1000+mA range to station 181+70 (around 10,000 lf).
- Thereafter, the readings are above the -850-mA standard until Oregon Street on the north side of Bishop (station 274+40 – about 9,300 feet distance).
- At that point, the readings again hover just under/over the standard until about station 283+00.
- The readings are acceptable until station 304+00 for a short distance and increase above the standard until station 311+50 with a repeat of readings being just under/over the standard.
- There is another noticeable jump at station 319+08. After that, the readings are at the -900+mA range up to several line crossings around station 461+00 or after about a 10,000 lf distance.
- The readings are then in the -800-mA range for approximately 1,000 lf.
- Then, there is a noticeable increase at station 473+60 with readings in the -950-mA range until the end of Contract 1.

Staff Recommendations:

As presented previously, the report indicates that slightly less than 15% of Contract 1 is not adequately protected. However, that includes those sections that are just below the -850-mA mark. Corrpro is recommending additional services to examine certain areas at a cost of $15,175. O&M Supervisor Armando Yruegas recommends hiring Corrpro to perform the additional work.

With regards to Contract 2, staff recommends continuing to: install anodes, repair or replace test stations, repair broken bonds and maintain/monitor impressed current stations.

Board Action:

Provide feedback to staff. Determine whether to hire Corrpro for the additional services.

Summarization:

If there are areas in Contract 1 that require additional attention, efforts should be made to address those sections of pipe. With regards to Contract 2, progress continues. Last month, the crew was north of Main Street in Driscoll. This month the crew is north of the city and south of Petronilla Creek.

ayruegas@stwa.org

From: Chris Dauzat <CDauzat@aegion.com>
Sent: Wednesday, April 22, 2020 3:27 PM
To: Armando
Cc: Steven Padden
Subject: Quote: South Texas Water
Attachments: SouthTexas Water Athority Report Recommendations Proposal No.20300156.pdf; South Texas Water Authority - TWA 42 Inch Final Report (MAR 2020) R1 .pdf

Importance: High

Armando,

I apologize, apparently this was never sent to you. See attached for our proposal to perform the services recommended in our latest report revision. I have also attached that report for your reference. If you have any questions, please don't hesitate to contact me.

Thank you,

Chris Dauzat | Operations Manager – Pipeline Services | Corrpro Companies, Inc.
7000 B Hollister | Houston, TX 77040
Office: 713.460.6000 | Mobile: 713.628.8817| Fax: 713.460.6060 | www.Aegion.com
cdauzat@aegion.com

AEGION corrpro

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corrpro

Armando Yruegas
South Texas Water Authority
Ph:361.445.5109
ayruegas@stwa.org

March 26, 2020

Proposal for Cathodic Protection Services
South Texas Water Authority
Bishop Texas

Corrpro is pleased to provide our proposal for Cathodic Protection services in support of the South Texas Water Authority TWA 42" Pipeline located in Bishop, TX. Corrpro's proposal is based on the report recommendations contained in the ***Close Interval Structure -To-Electrolyte Surveys Report dated 2/21/2020***.

SCOPE OF WORK

Corrpro will perform the following scope of work:

- Review pipeline as-built drawings and lay schedules for joint bonding, test station details and other relevant details.
- Review historical cathodic protection commissioning data and reports to ascertain free corrosion potentials. Evaluation of this data will be compared to existing operating conditions with respect to the 100 mV polarization criterion for the areas that did not meet -850 mV polarized potential. Further, a pipeline specific Instant Off potential criterion can be developed for future use that assures a minimum of 100 mV of cathodic polarization.
- Evaluate monitoring and maintenance data to examined historical changes in the levels of protection and rectifier outputs over time to develop trend analysis.
- Perform electrical continuity testing on each pipeline span where CIS data suggested possible discontinuities. This testing consists of performing CIS in one direction and immediately in the other direction to identify points where the profile levels out reflecting remote earth. Additionally, Corrpro will use a Pipeline Current Mapper to study current flow along the pipeline and identify locations where the current flow is disrupted by electrically discontinuous joints. Each testing technique will develop a more refined and detailed location for possible excavations of the pipeline to pinpoint electrical discontinuities.
- Contact and develop sequenced interference testing with each of the operators for the three foreign pipeline crossings to determine the impact to client assets and develop appropriate designed mitigation measures.
- Provide a written report detailing the data collected, analysis of the pipeline areas evaluated and recommendations.

Corrpro proposes to perform this work on a time and expense basis in accordance with our standard rate sheet. Corrpro's pricing listed below is an estimated number of days.

PRICING SUMMARY

Corrpro will provide the above items for the below pricing.

PRICING SUMMARY			
ITEM	RATE	EST# OFDAYS	TOTAL
Field Testing	$1,450	8	$11,600
Final Report			$3,575
Total Project			$15,175

*Corrpro's pricing above is based on a T&M rate. The 8 days to complete the field testing on the subject pipeline is an estimate based on our experience performing similar testing. Corrpro will charge $1,450 per day onsite and portal to portal.

Corrpro's Pricing is valid for 30 days

PRICING BASIS

Corrpro's pricing is based on the following information:

1. Corrpro will bill the above day rate for all mobilization days and any onsite training days.
2. The right of ingress, egress, and access to all properties necessary for completion of the work to be provided by others. Delays and costs associated with right-of-way or access problems will incur additional charges.
3. Corrpro will charged $1,450 per day onsite and portal to portal.

QUALIFIERS

1. Any additional scope of work items requested, not included in Corrpro's proposal will be charged according to the rates contained in the 2020 Corrpro Standard Rate Sheet.
2. Schedule shall be mutually agreed upon.
3. Any standby time that applies to work stoppages beyond Corrpro's control to include, but not limited to, drilling delays, customer directives, services provided by others, or access issues will be charged according to the rates contained in the 2020 Corrpro Standard Rate Sheet.
4. Records, drawings, and historical reports to be provided to Corrpro, if available.
5. Corrpro shall not execute any work not outlined in this quote without a fully executed Change Order.
6. Any applicable local, state and federal sales taxes are not included in the pricing shown above and will be added if required. Client is to supply a tax exemption and/or direct pay certificate if applicable.
7. Invoices payable to Corrpro will be net 30-days from date of receipt.

If you have any questions regarding our quote, please contact me at **713.299.0282,** or via email at **LZickefoose@aegion.com**. Once again, we appreciate this opportunity.

Best Regards,

Lee Zickefoose

Lee Zickefoose
Sr. Sales Representative

Proposal No. 20300156 is subject in all respects to the Corrpro Standard Terms and Conditions located at https://www.aegion.com/-/media/Aegion2017/Files/Terms/CorrproUSStandardTermsandConditions.pdf and are incorporated into this **proposal** by reference. In the event of any conflict or inconsistency between the provisions of this proposal/quote and the Corrpro Standard Terms and Conditions, the provisions of this **proposal** shall prevail to the extent of such conflict or inconsistency.

Authorized Signature	**Printed Name**
Title	**Date**

2020 Corrpro Personnel & Equipment Rate Schedule

Engineering Services Personnel

	Per Hour	Overtime Per Hour	Day Rate (8 hrs/day)	Mileage
Principal Engineer	$ 265.00	$ 265.00	$ 2,144.00	
SME (Const, AC Mit, Eng)	$ 235.00	$ 235.00	$ 1,880.00	
Senior Engineer / CP Specialist	$ 220.00	$ 220.00	$ 1,760.00	
Project Manager II	$ 170.00	$ 170.00	$ 1,360.00	
Project Manager I	$ 130.00	$ 130.00	$ 1,040.00	
Project Coordinator	$ 101.00	$ 101.00	$ 808.00	
AC Modeling Engineer	$ 155.00	$ 155.00	$ 1,240.00	
Engineer II	$ 150.00	$ 150.00	$ 1,200.00	
Engineer I	$ 139.00	$ 139.00	$ 1,112.00	
Drafting Designer/CAD	$ 78.00	$ 109.00	$ 624.00	
Coating Specialist	$ 139.00	$ 139.00	$ 1,112.00	
Senior Coating Inspector	$ 129.00	$ 180.00	$ 1,032.00	
Coating Technologist	$ 80.00	$ 112.00	$ 640.00	
Coating Inspector	$ 88.00	$ 123.00	$ 704.00	
Senior Corrosion Technician	$ 100.00	$ 140.00	$ 800.00	
Corrosion Technician	$ 93.00	$ 130.00	$ 744.00	
Senior Corrosion Technologist	$ 113.00	$ 158.00	$ 904.00	
Corrosion Technologist	$ 104.00	$ 145.00	$ 832.00	
Soil/Water Testing	$ 155.00			
CDEGS Runtime Charge	$ 52.00			
Subsistence Per Diem / Per Person			$ 225.00	

Close Interval Survey Personnel

	Per Hour	Overtime Per Hour	Per Day	Mileage
Standard CIS Crew (3-man crew)			$3,400.00	
DCVG, AC Current Attenuation (4-man crew)			$4,100.00	
Marsh and River Crossing Surveys (3-man crew) & Marsh Buggy			$5,550.00	
Soil Resistivity Survey (2-man crew)			$2,200.00	
Crew Standby (3 Man)	$425/HR			
Sub-Foot GPS			$ 360.00	
Current Interrupters (over 15)			$ 35.00	
Offshore Wire			$0.10/FT	

Construction Services Personnel

	Per Hour	Overtime Per Hour	Day Rate (8 hrs/day)	Mileage
Project Manager II/Construction Manager	$ 170.00	$ 170.00	$1,360.00	
Project Manager I	$ 130.00	$ 130.00	$1,040.00	
Project/Construction Superintendent	$ 125.00	$ 125.00	$1,000.00	
Deep Well Driller	$ 85.00	$ 119.00	$ 680.00	
Project/Construction Foreman	$ 79.00	$ 110.00	$ 632.00	
Equipment Operator	$ 72.00	$ 101.00	$ 576.00	
Laborer	$ 65.00	$ 90.00	$ 520.00	
CDL Truck Driver	$ 68.00	$ 94.00	$ 544.00	
Subsistence Per Diem / Per Person			$ 225.00	

Safety Personnel

	Per Hour	Overtime Per Hour	Per Day	Mileage
Safety Specialist	$ 80.00	$ 112.00		
Safety Technician	$ 70.00	$ 98.00		

Equipment

	Per Hour	Overtime Per Hour	Per Day	Mileage
1 Ton Field/Utility Truck w/ Tools (F-350)	$ 21.00		$ 160.00	$ 1.20
2 Ton Stake Bed Truck (F-550)	$ 26.50		$ 212.00	$ 1.30
Air Compressor (Small)	$ 25.00		$ 200.00	
Auger Truck (50' Max)	$ 85.00		$ 680.00	$ 1.80
Backhoe w/Trailer	$ 85.00		$ 680.00	
Cable Plow	$ 62.00		$ 476.00	
Coke Breeze Pump	$ 45.00		$ 360.00	
Drill Rig (Mud Rotary / Air)	$ 250.00		$2,000.00	$ 2.30
Dump Truck	$ 50.00		$ 400.00	$ 2.10
Equipment Trailer (12'-20')	$ 15.00		$ 120.00	
Equipment Trailer (40')	$ 18.00		$ 144.00	
Flatbed Material Truck	$ 37.50		$ 300.00	$ 2.00
Geotechnical Drill	$ 30.00		$ 240.00	
Hydro Vacuum Excavator	$ 175.00		$1,400.00	$ 2.10
Mini Excavator & Trailer	$ 58.00		$ 464.00	
Solid Waste Control System (Mud Puppy Trailer)	$ 31.00		$ 248.00	
Pickup	$ 12.00		$ 96.00	$ 1.00
Pickup 4-Wheel Drive w/ Tools (F-150)	$ 16.00		$ 128.00	$ 1.10
Portable Generator	$ 10.00		$ 80.00	
Portable Pit	$ 40.00		$ 320.00	

RFID Tags (Per Tag)	$ 25.00		
SAFETRACK Pin Braze Package		$ 75.00	
Skid steer w/Attachments & Trailer	$ 78.00	$ 624.00	
Soil Compactor	$ 10.00	$ 80.00	
Trencher w/Trailer (Over 66")	$ 60.00	$ 480.00	
Trencher w/Trailer (Under 66")	$ 55.00	$ 440.00	
Vacuum Excavator (Hydro)	$ 150.00	$ 1,200.00	$ 2.10
Water Truck	$ 65.00	$ 520.00	$ 2.00
Subcontract Services		Cost + 15%	

Expenses

	Per Hour	Overtime Per Hour	Per Day	Mileage
Commercial Travel			Cost + 15%	
Outside Consulting and Testing			Cost + 15%	
Rental Equipment			Cost + 15%	
Design/Modeling Software run Times	$ 44.00			

Terms & Conditions:

1. All rates are portal to portal from the office where the personnel and equipment are based.
2. This schedule of rates is effective through December 31, 2020.
3. Four (4) hour minimum charge.
4. Rates are subject to availability of personnel and equipment.
5. Per Day rates are based on an eight (8) hour day.
6. Equipment rates include all maintenance, fuel, lubricants and insurance.
7. Hourly rates of personnel and equipment pertain to transportation, operating time on the job and standby time.
8. Regular time rates apply to work performed Monday through Friday up to 8 hours per day and/or 40 hours per week.
9. Overtime charges apply to all hours over 8 hours per day and/or 40 hours per week.
10. Special license, taxes and permits required for the job due to local, government and/or state regulations and ordinances will be billed at cost +15%
11. Crafts that fall under Prevailing Wage are not included.
12. Equipment rates are based on equipment availability in respective offices.
13. Mileage rates are based on a $3.00 Per Gallon diesel base rate. Rates subject to change. When rates fluctuate by 10% from the base rate, a surcharge will be applied.

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South Texas Water Authority
Close Interval Structure-To-Electrolyte Potential Surveys Report
TWA 42" (February 2020)

Prepared for:

South Texas Water Authority – Armando Yruegas

Bishop, Tx

Corrpro Project No.: 340410178

02/21/2020

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QUALITY ASSURANCE FORM

Project Identifier			
Project Name	TWA 42"	**Type of Document**	Close Interval Pipe-to-Soil Potential Survey
Project Scope of Work			
On/Off Survey			
Referenced Customer Standards for Compliance			
N/A			
Compliance/Criteria Achieved?	No	**Test procedures documented?**	Yes
Recommendations w/ cost estimates included?	N/A	**Data Tables and/or Charts Included?**	Yes
Compliant with Scope of Work?	Yes		
Assumptions included in analysis			
N/A			
Corrpro Project Team			
Field Crew - Jon Roberts Data Processor - Elizabeth Minjarez Project Manager - Chris Dauzat			
Summary of conclusions			
N/A			

Review completed by:	Name	Chris Dauzat
	Job Title	Project Manager
	Qualifications	N/A
	Date	02/21/2020

REVISION HISTORY

Revision:	Date:	Status:	Approved by:
0	02/21/20	CIS Report	C. Dauzat

Original

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SUMMARY

Corrpro Companies, Inc. performed an ON/OFF Close Interval Pipe-to-Soil Potential Survey (CIS) during February - 2020 on 9.66 miles of pipeline. The pipeline surveyed was:

Line	Area	Miles	Survey
TWA 42"	Riser SN/0+00 to Test Station SN/523+18	9.66	On/Off Survey

All work performed was completed under normal pipeline operating conditions in accordance with the Company's technical specifications for an ON/OFF. Test results indicate that:

8.32 miles (86.13 %) of the pipeline surveyed has "ON" potentials more negative than –850mV.
8.22 miles (85.07 %) of the pipeline surveyed has "OFF" potentials more negative than –850mV.

Line Surveyed	Miles Surveyed	Less Negative than -850mV "ON"		Less Negative than -850mV "Instant OFF"	
		Miles	Percent	Miles	Percent
TWA 42"	9.66	1.34	13.87	1.44	14.93
Total	9.66	1.34	13.87	1.44	14.93

All potentials are taken with respect to a $CuCuSO_4$ reference electrode.

During the course of the project, daily field plots were submitted to the Company's representatives for review.

Refer to Appendix A for detailed exception tables for this pipeline.

RECOMMENDATIONS

Based on the results of the survey, it is recommended that pipelines not meeting the established cathodic protection criteria be further investigated.

By specific location, it should be determined if;

- The location satisfies another industry accepted criterion for adequate cathodic protection
- The current from existing rectifier(s) can be increased to provide the required level of protection
- Repair or upgrade of existing CP systems can be made to provide the required level of protection+
- Design and installation of additional CP systems can be made to provide the required level of protection
- Repair or upgrade of insulating devices can be made to provide the required level of protection.
- The rehabilitation of coating at selected locations would be a cost effective approach to improving the level of cathodic protection.

At selected localized depressions in the potential profile, it is recommended that the pipeline be excavated and inspected or compared and correlated with previous in-line inspection results and/or other inspection methodologies as applicable.

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Revised

SUMMARY

Corrpro Companies, Inc. performed an ON/OFF Close Interval Pipe-to-Soil Potential Survey (CIS) during February - 2020 on 9.66 miles of pipeline. The pipeline surveyed was:

Line	Area	Miles	Survey
TWA 42"	Riser SN/0+00 to Test Station SN/523+18	9.66	On/Off Survey

All work performed was completed under normal pipeline operating conditions in accordance with standard industry practices (See Appendix E). Test results indicate that:

8.32 miles (86.13 %) of the pipeline surveyed has "ON" potentials more negative than –850mV.
8.22 miles (85.07 %) of the pipeline surveyed has "OFF" potentials more negative than –850mV.

Line Surveyed	Miles Surveyed	Less Negative than -850mV "ON"		Less Negative than -850mV "Instant OFF"	
		Miles	Percent	Miles	Percent
TWA 42"	9.66	1.34	13.87	1.44	14.93
Total	9.66	1.34	13.87	1.44	14.93

All potentials are recorded with respect to a $Cu/CuSO_4$ (CSE) reference electrode.

During the course of the project, daily field plots were submitted to the Company's representatives for review.

Refer to Appendix A for detailed exception tables listing areas where On and Instant Off potentials are less negative than -850 mV CSE. Appendix B contains the CIS graphics with Rectifier Data in Appendix C and Test Station Data in Appendix D.

New Section

DISCUSSION

SP0100-2019 is a recently updated NACE International standard practice for "Cathodic Protection to Control External Corrosion of Concrete Pressure Pipelines and Mortar-Coated Steel Pipelines for Water or Waste Water Service." Section 5 presents two criteria for cathodic protection:

1. A cathodic polarization of at least 100 mV, which can be calculated by subtracting the free corrosion potential (native potential before the application of cathodic protection current) from the Instant Off potential.

2. A polarized potential of -850 mV CSE or more negative, which corresponds to the Instant Off potentials recorded during the CIS survey.

As reported above, 85% of the TWA 42" pipeline is well protected with polarized pipe-to-soil potentials more negative than -850 mV CSE.

The remaining 15% of the pipeline may satisfy the 100 millivolt polarization criterion, but this cannot be calculated without either referencing the free corrosion potentials that quite possibly were collected during the commissioning of the cathodic protection system, or turning the protective current off and allowing the pipeline to depolarize. Potentials recorded following depolarization would then be used to calculate the cathodic polarization with the systems placed back in operation. Depolarization of this pipelines would require a minimum of 30 days, which could be avoided if the historical potential data is available.

The CIS survey also identified other areas of concern. The Near Ground / Far Ground / Metal IR measurements recorded at test point connections indicate that some of the pipe spans between test connections may be electrically discontinuous. In addition, there is a 100 mV depression in both the On and Instant Off potential profiles at survey station numbers 461+20, 461+35 and 461+53 corresponding to the crossings of foreign pipelines.

RECOMMENDATIONS

Revised

Further investigation and testing are needed to address the areas of the pipeline which do not satisfy the polarized potential criterion, pipeline spans between test points that may be electrically discontinuous, and the area of depressed potentials associated with the foreign line crossings. A study and additional field testing are recommended:

- Pipeline as-built drawings and lay schedules should be reviewed for joint bonding, test station and other relevant details.
- Cathodic protection commissioning data and reports should be reviewed to ascertain free corrosion potentials. With this data, current operating conditions can be evaluated with respect to the 100 mV polarization criterion for the areas that do not meet -850 mV polarized potential. Further, a pipeline

specific Instant Off potential criterion can be developed for future use that assures a minimum of 100 mV of cathodic polarization.

- Monitoring and maintenance data should be examined to evaluate changes in levels of protection and rectifier outputs over time.
- Electrical continuity testing should be performed on pipeline spans where the CIS data suggests possible discontinuities. This testing should consist of performing CIS in one direction and immediately in the other direction to identify points where the profile levels out reflecting remote earth; and using the Pipeline Current Mapper to study current flow along the pipeline and identify locations where the current flow is disrupted by electrically discontinuous joints. Both of these testing techniques will help to better define locations for excavation to contact the pipe for pinpointing electrical discontinuities.
- Interference testing with the operators of the three crossing pipelines to determine the impact and design appropriate mitigation.

double check →

Not part of Russell Corrosion Study in 2017

We propose to perform this work on a time and expense basis in accordance with our standard rate sheet. Note that a future phase of the work will require pipeline excavations in conjunction with confirmatory testing to bond electrical discontinuities.

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APPENDIX A: EXCEPTION TABLES

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South Texas Water Authority
TWA 24"
Riser SN/0+00 to Test Station SN/523+18

Areas less negative than -850 mV "ON"							
Survey Station						Length (ft)	Comments
Start	Latitude	Longitude	End	Latitude	Longitude		
0+00	27.53936005	-97.84096527	46+97	27.55128860	-97.83914948	4697.0	
47+25	27.55134010	-97.83909098	47+27	27.55134392	-97.83908844	2.0	
47+35	27.55136490	-97.83906937	47+65	27.55142021	-97.83899689	30.0	
47+90	27.55146408	-97.83893585	47+92	27.55146885	-97.83892822	2.0	
48+82	27.55164846	-97.83875021	49+92	27.55187607	-97.83849335	110.0	
49+95	27.55188084	-97.83848954	50+17	27.55191803	-97.83843994	22.0	
50+20	27.55192280	-97.83843231	50+45	27.55197334	-97.83838273	25.0	
65+55	27.55490494	-97.83499146	65+57	27.55490971	-97.83498383	2.0	
69+62	27.55567169	-97.83405304	69+75	27.55569458	-97.83403015	13.0	
69+77	27.55570030	-97.83402252	69+90	27.55572319	-97.83399709	13.0	
73+17	27.55634499	-97.83327103	74+77	27.55665779	-97.83290863	160.0	
74+95	27.55669212	-97.83287811	75+52	27.55680370	-97.83274841	57.0	
75+65	27.55682755	-97.83272552	76+00	27.55689812	-97.83264160	35.0	
76+02	27.55690289	-97.83263397	76+17	27.55692673	-97.83260345	15.0	
76+42	27.55697823	-97.83254242	76+45	27.55698205	-97.83253861	3.0	
76+50	27.55699063	-97.83252716	76+52	27.55699539	-97.83251953	2.0	
76+67	27.55702782	-97.83248901	76+80	27.55704498	-97.83246613	13.0	
76+82	27.55704975	-97.83245850	76+95	27.55707741	-97.83242798	13.0	
77+80	27.55724144	-97.83225250	77+87	27.55725670	-97.83222961	7.0	
78+00	27.55728022	-97.83220419	78+02	27.55728340	-97.83219910	2.0	
78+27	27.55732918	-97.83213552	78+30	27.55733299	-97.83213043	3.0	
78+40	27.55735779	-97.83211517	78+42	27.55736351	-97.83210754	2.0	
78+55	27.55738831	-97.83208212	78+95	27.55746269	-97.83199310	40.0	
78+97	27.55746746	-97.83198547	79+00	27.55747223	-97.83197784	3.0	
79+22	27.55751419	-97.83193207	79+25	27.55751991	-97.83192826	3.0	
79+37	27.55755234	-97.83190155	79+50	27.55757523	-97.83187103	13.0	
79+52	27.55757904	-97.83186594	79+77	27.55761910	-97.83181000	25.0	
79+82	27.55763054	-97.83179856	79+97	27.55765724	-97.83176422	15.0	
80+22	27.55770620	-97.83171590	80+27	27.55771446	-97.83170319	5.0	
80+30	27.55772018	-97.83169556	81+77	27.55800629	-97.83136749	147.0	
271+67	27.59033585	-97.79544830	274+97	27.59097291	-97.79473496	330.0	
275+00	27.59097672	-97.79473114	275+30	27.59103775	-97.79466248	30.0	
277+62	27.59147453	-97.79415894	277+65	27.59147835	-97.79415513	3.0	
277+75	27.59149551	-97.79412842	277+77	27.59150028	-97.79412461	2.0	
278+07	27.59155846	-97.79405975	278+20	27.59158134	-97.79402924	13.0	
310+52	27.59948921	-97.78937531	310+60	27.59950829	-97.78936005	8.0	
310+70	27.59952545	-97.78935242	310+72	27.59952354	-97.78935242	2.0	
311+02	27.59960556	-97.78932190	311+67	27.59975815	-97.78923035	65.0	
313+90	27.60030556	-97.78893280	313+92	27.60031128	-97.78892899	2.0	
314+12	27.60036564	-97.78890228	314+15	27.60037231	-97.78889465	3.0	
314+20	27.60038757	-97.78888702	314+57	27.60047531	-97.78884125	37.0	
314+62	27.60049057	-97.78884125	314+97	27.60057449	-97.78879038	35.0	
462+95	27.63759041	-97.76892090	473+65	27.64023717	-97.76751489	1070.0	

Total pipeline distance less negative than -850 mV "ON" = 7,079 feet or 13.87 percent
Total pipeline distance surveyed = 51,020 feet or 9.66 miles

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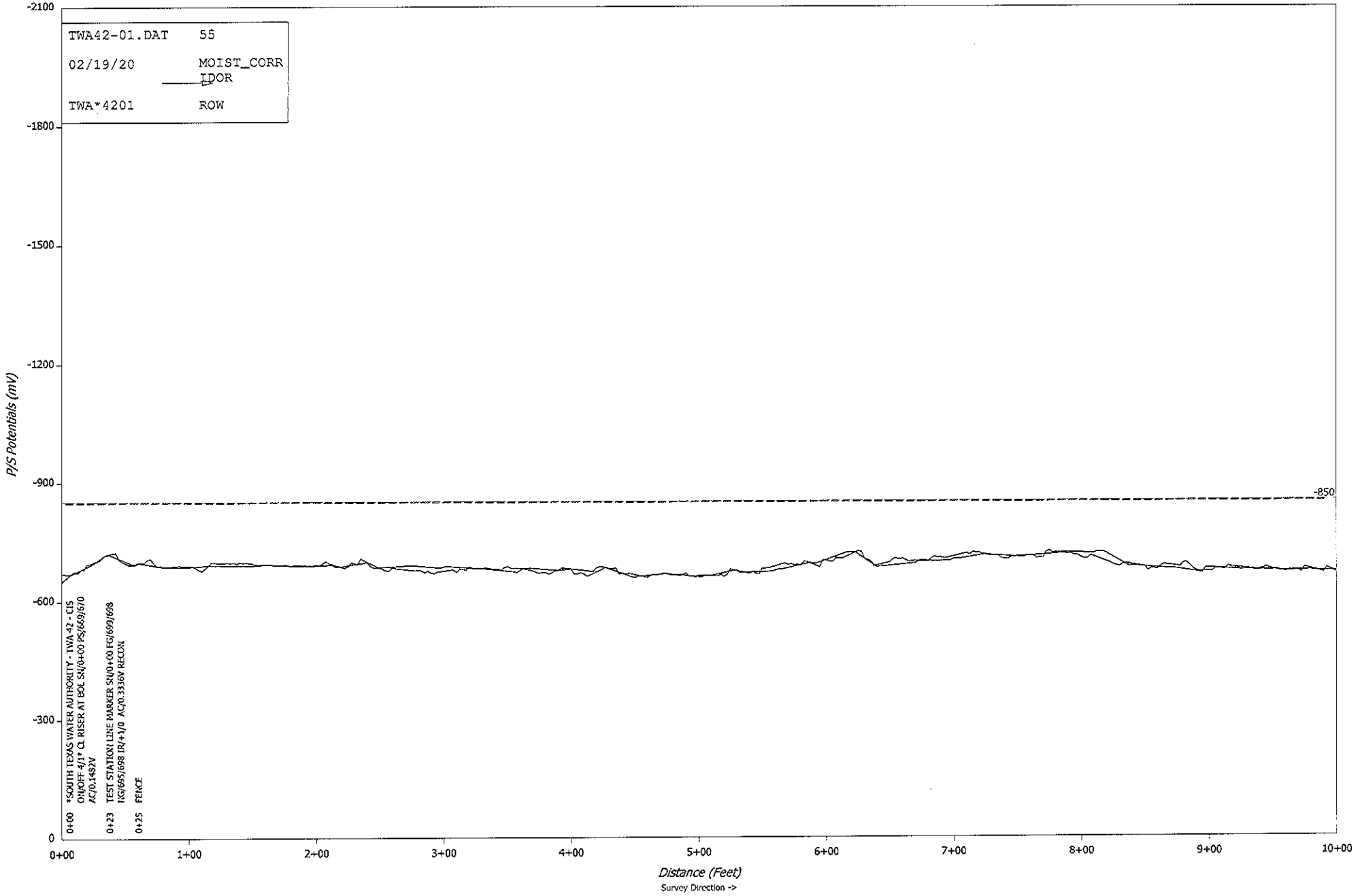
South Texas Water Authority
TWA 24"
Riser SN/0+00 to Test Station SN/523+18

Areas less negative than -850 mV "Instant OFF"							
Survey Station						Length (ft)	Comments
Start	Latitude	Longitude	End	Latitude	Longitude		
0+02	27.53938293	-97.84095764	41+70	27.55031204	-97.84032440	4168.0	
41+85	27.55032158	-97.84029388	47+20	27.55133247	-97.83909607	535.0	
47+45	27.55138588	-97.83904648	47+72	27.55143166	-97.83898163	27.0	
49+00	27.55167961	-97.83871460	50+60	27.55200291	-97.83835602	160.0	
60+45	27.55387688	-97.83615112	60+67	27.55388928	-97.83609391	22.0	
69+65	27.55567551	-97.83405050	69+67	27.55567932	-97.83404795	2.0	
73+32	27.55637932	-97.83323669	76+35	27.55696201	-97.83256150	303.0	
76+60	27.55701256	-97.83250427	76+62	27.55701828	-97.83249664	2.0	
78+75	27.55742741	-97.83203888	79+02	27.55747700	-97.83197403	27.0	
79+57	27.55758667	-97.83185577	80+15	27.55769539	-97.83172989	58.0	
80+42	27.55774689	-97.83166886	81+80	27.55800056	-97.83136749	138.0	
271+62	27.59032249	-97.79545593	280+00	27.59196091	-97.79365540	838.0	
280+42	27.59205246	-97.79357529	281+62	27.59231758	-97.79335785	120.0	
304+10	27.59789372	-97.79024125	304+35	27.59795857	-97.79020310	25.0	
311+12	27.59962845	-97.78930664	311+60	27.59973908	-97.78923798	48.0	
314+25	27.60040092	-97.78888702	314+50	27.60045529	-97.78885270	25.0	
314+75	27.60052395	-97.78882218	315+00	27.60057831	-97.78878784	25.0	
315+02	27.60058594	-97.78878784	315+25	27.60064697	-97.78874969	23.0	
462+90	27.63756561	-97.76893616	473+60	27.64022636	-97.76752116	1070.0	

Total pipeline distance less negative than -850 mV "Instant OFF" = 7,616 feet or 14.93 percent
Total pipeline distance surveyed = 51,020 feet or 9.66 miles

APPENDIX B: GRAPHS



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

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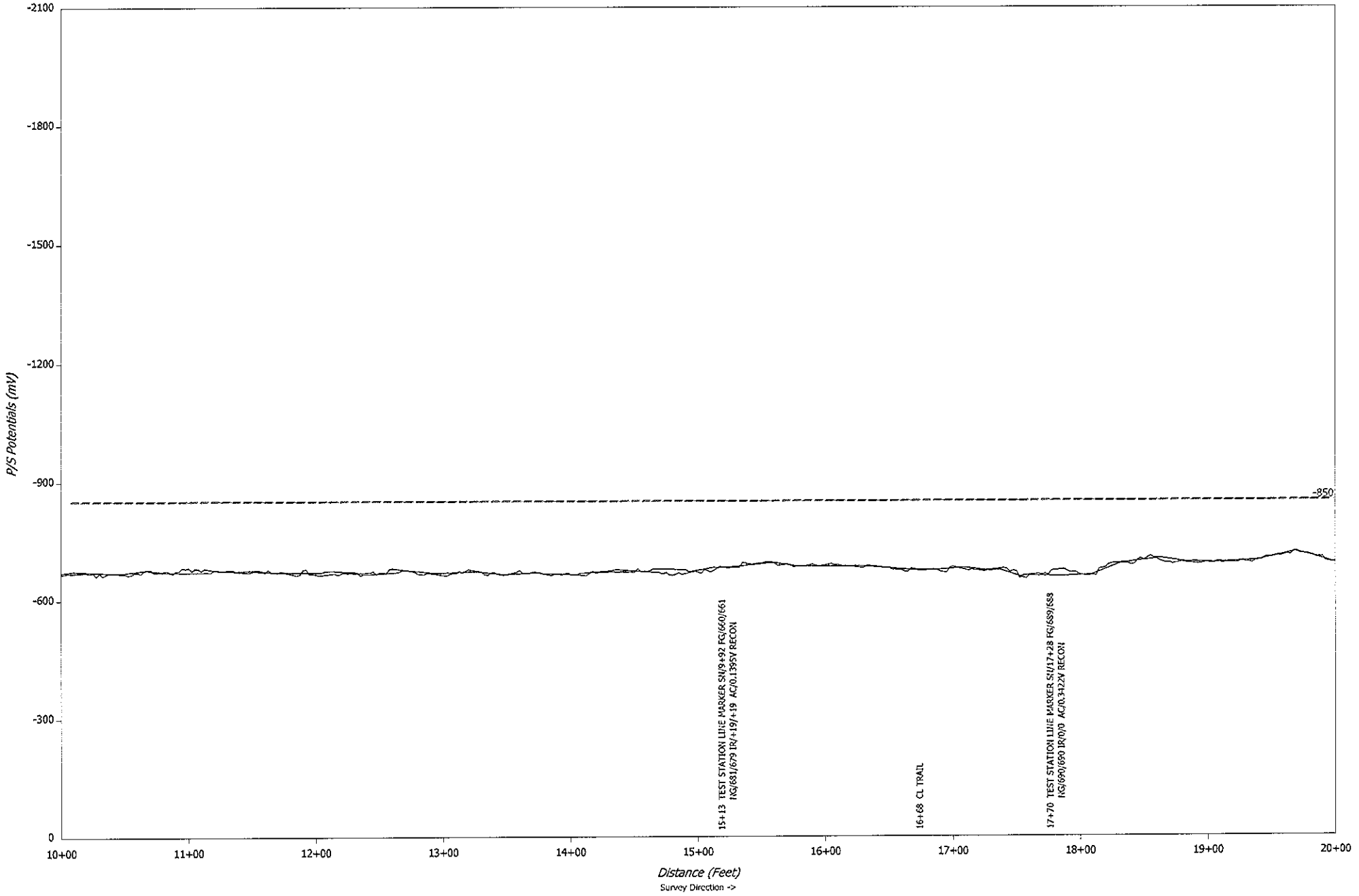
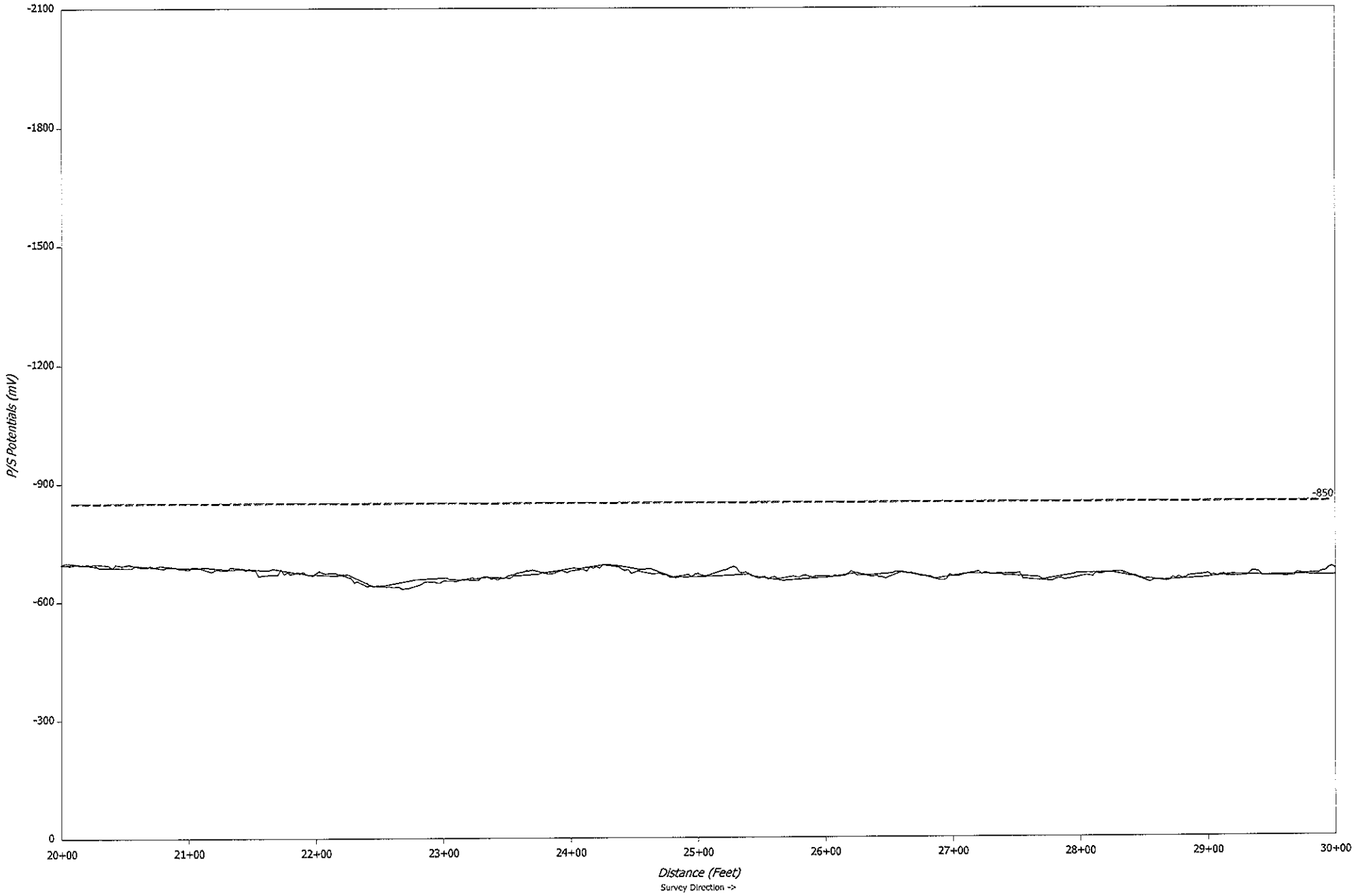
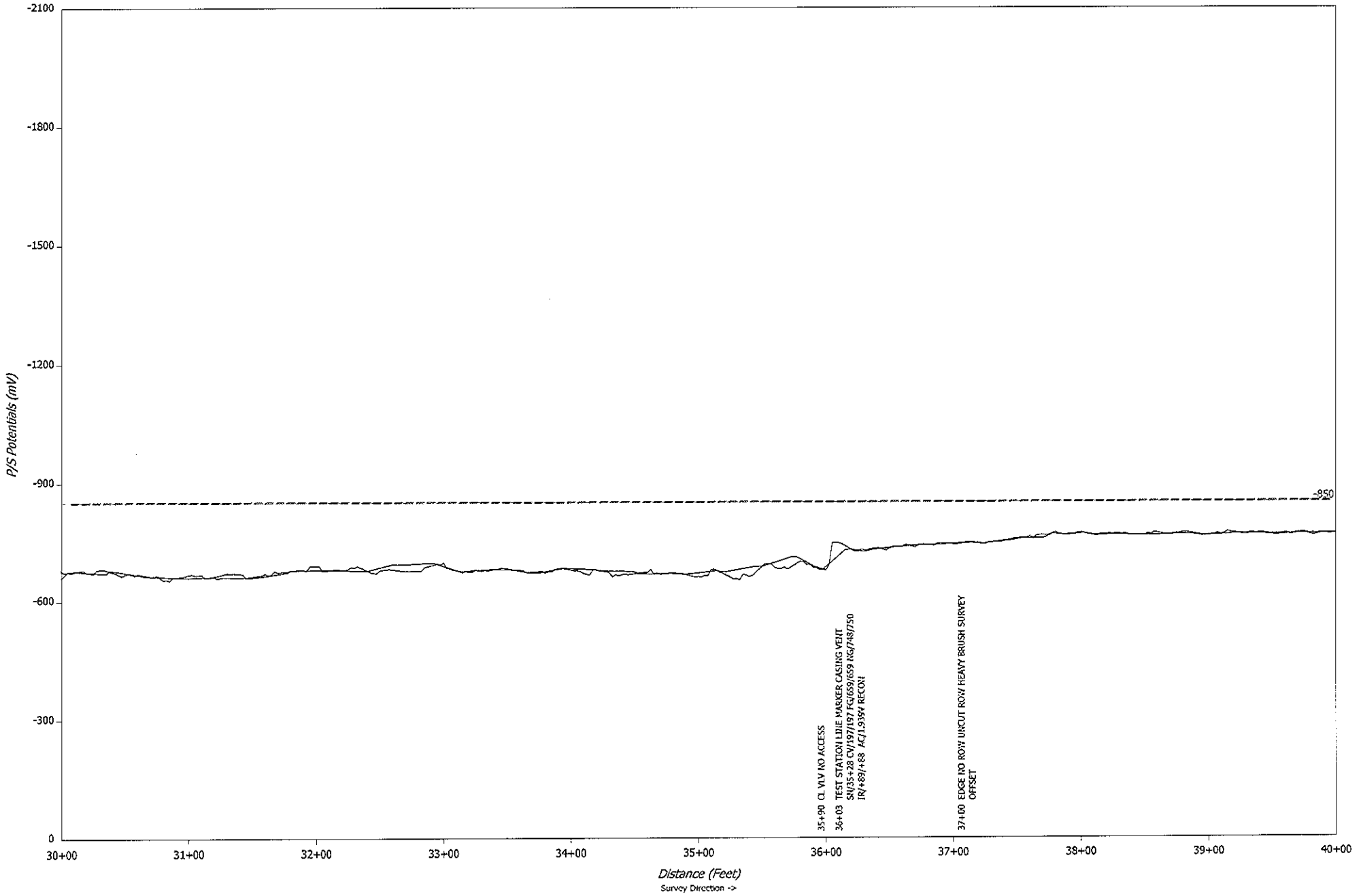


SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
28+00
29+00
30+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

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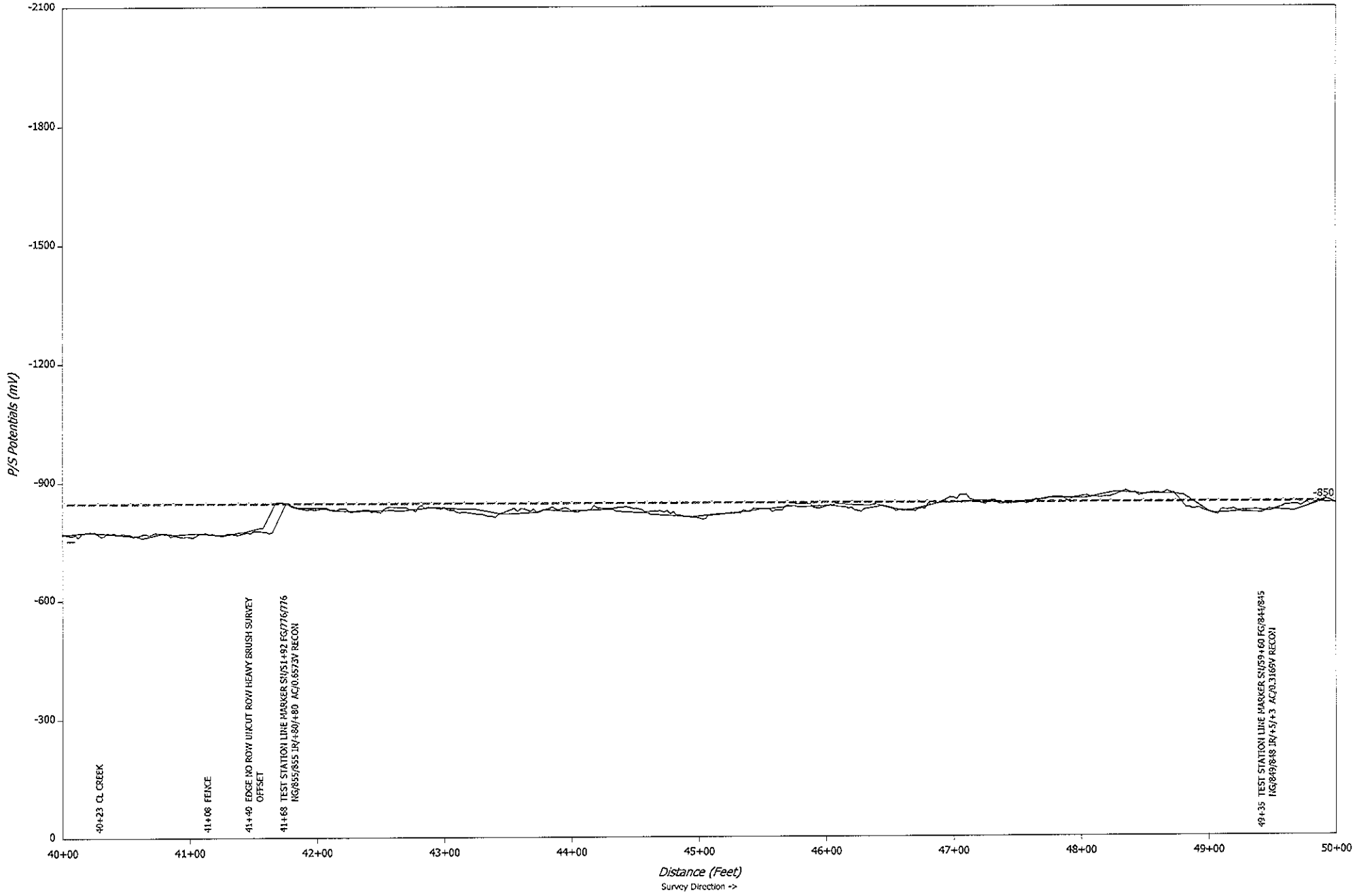

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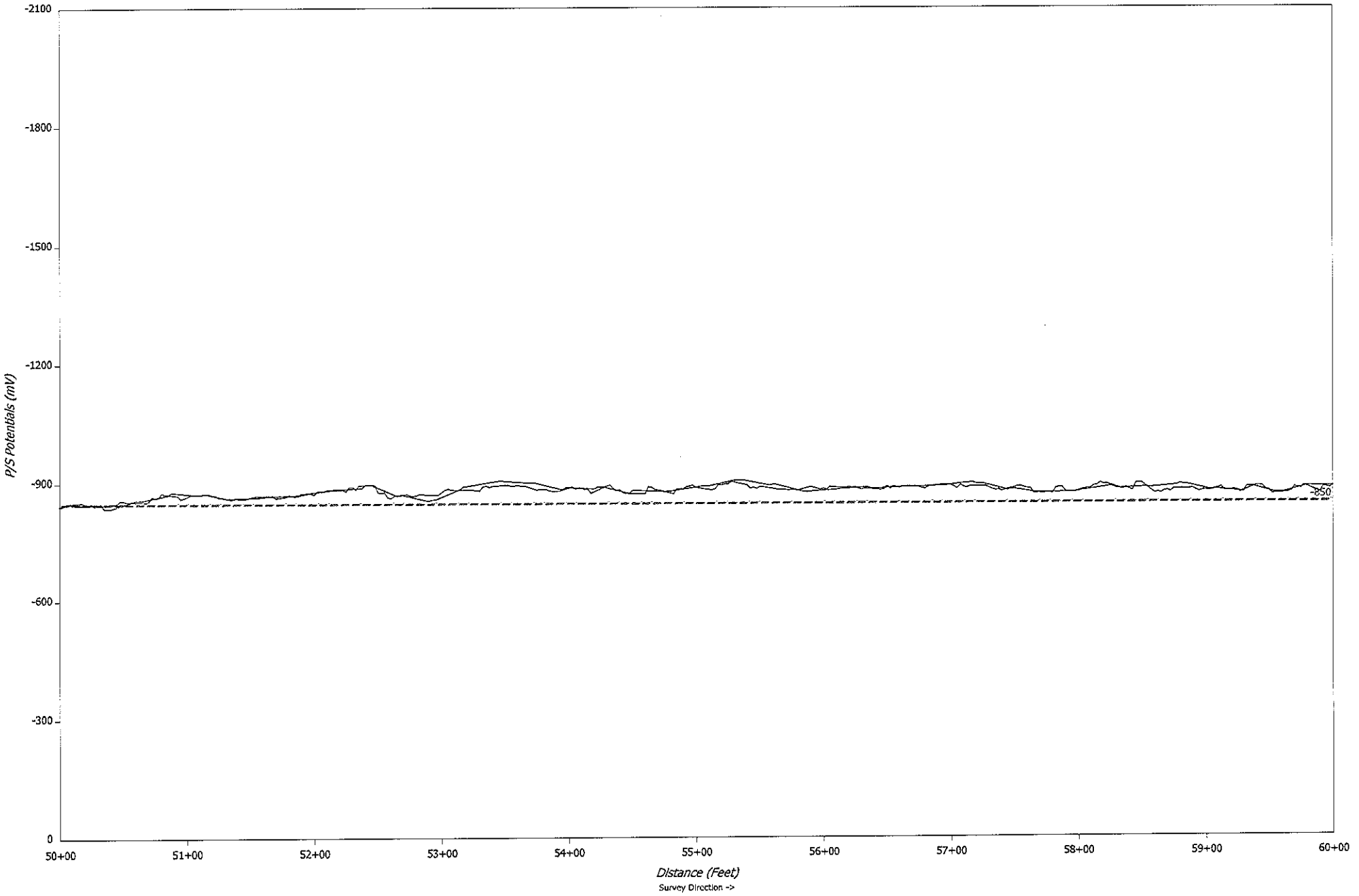

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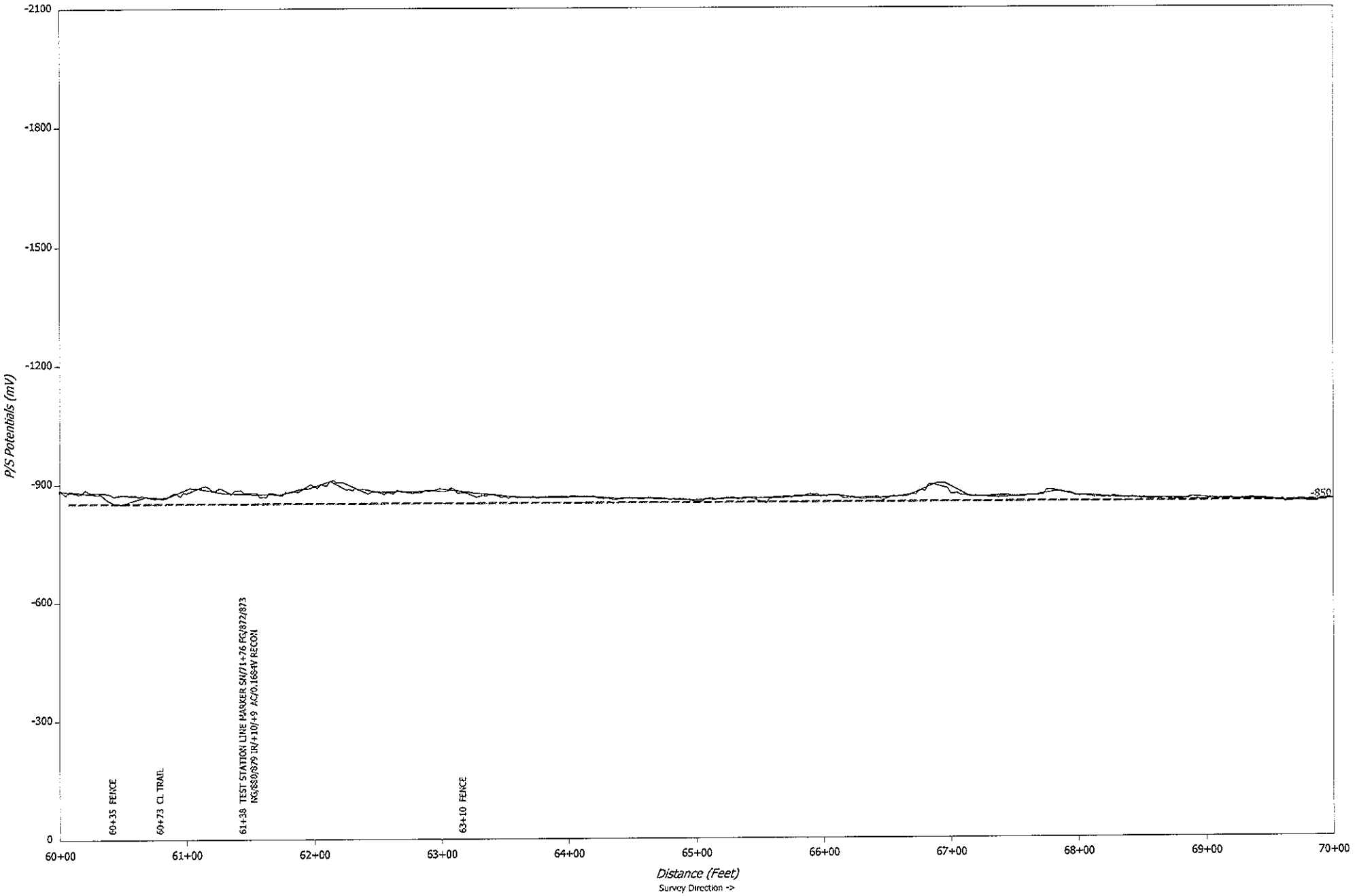

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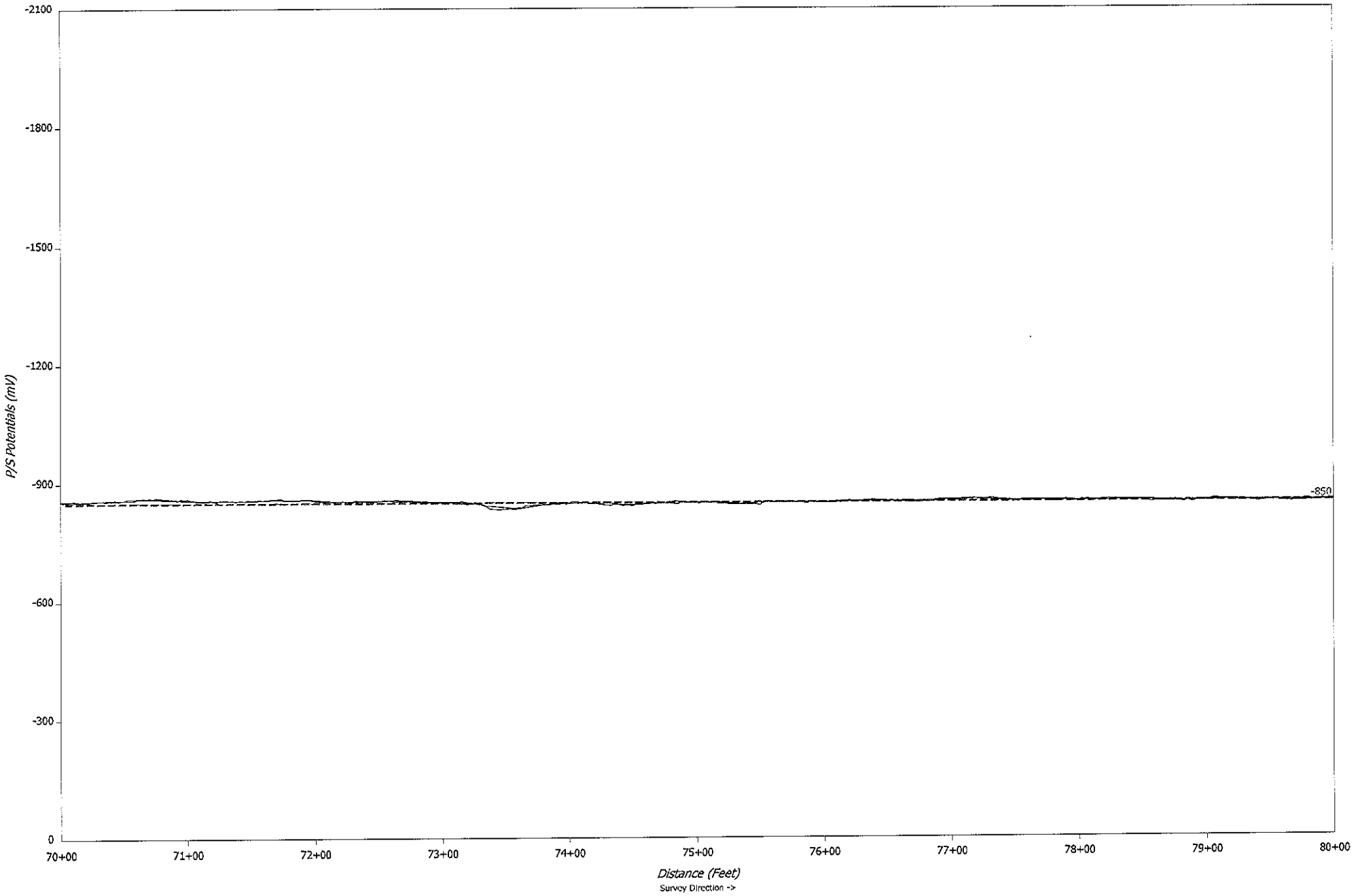

SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

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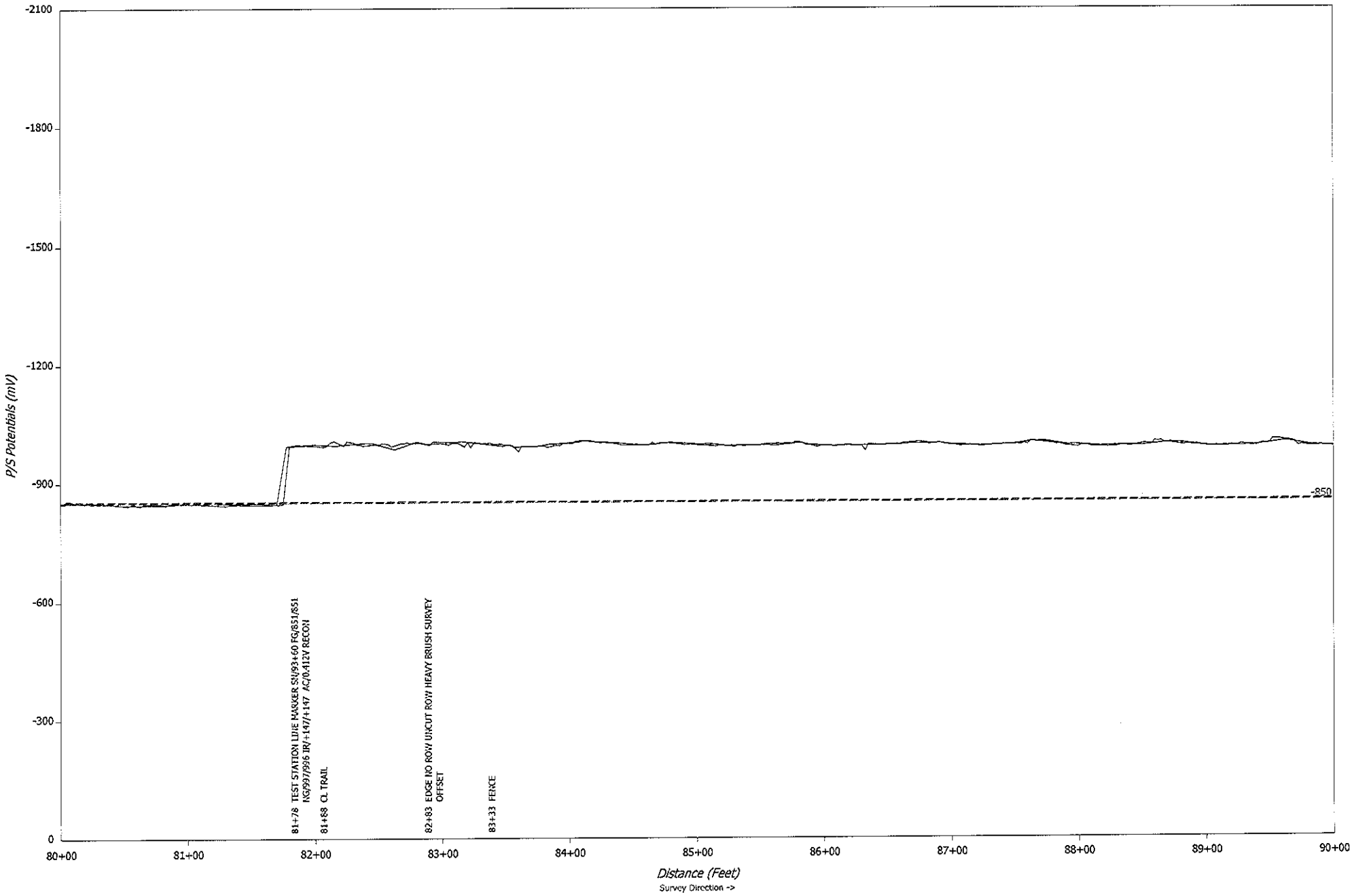

SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

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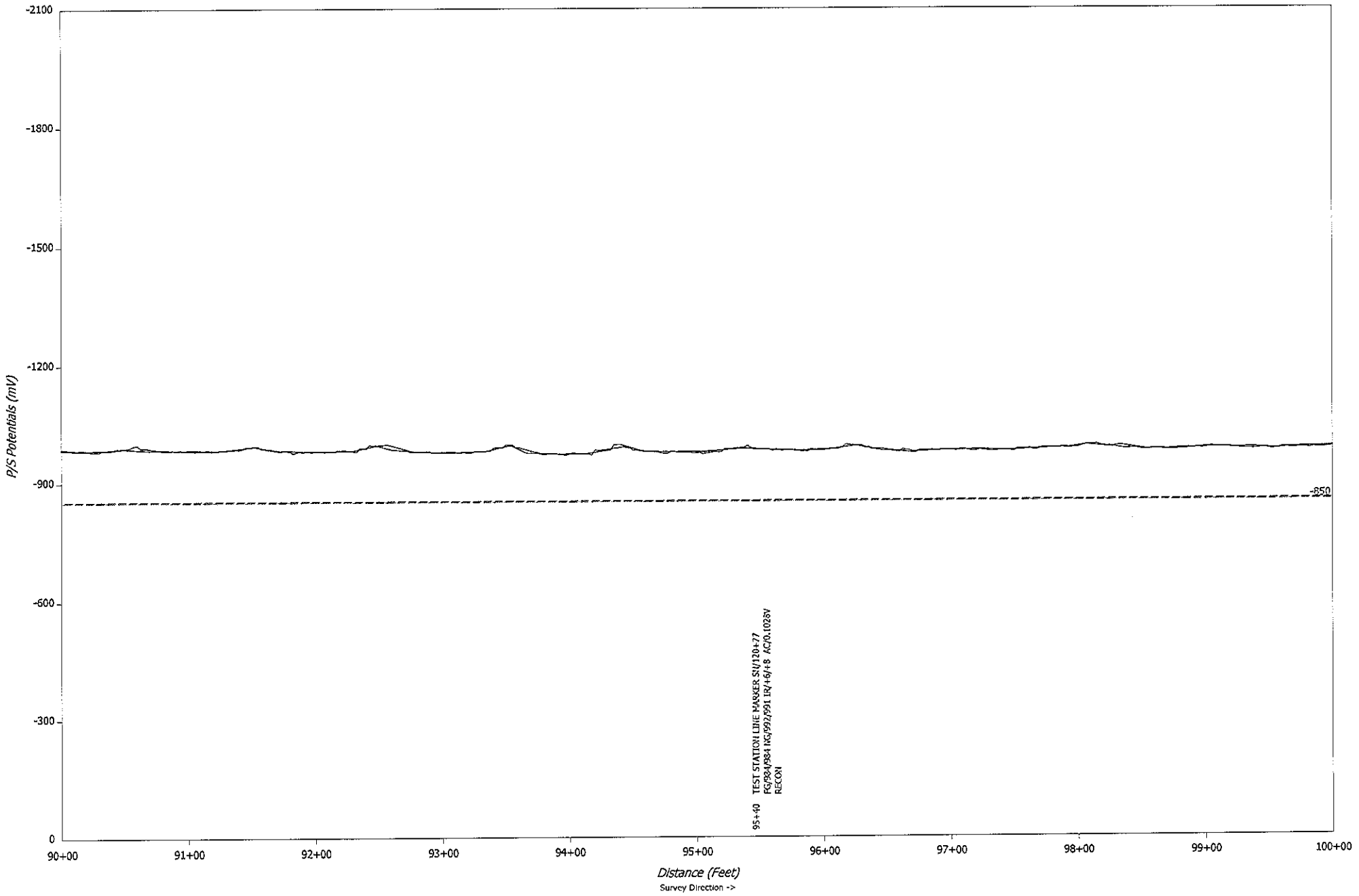

SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

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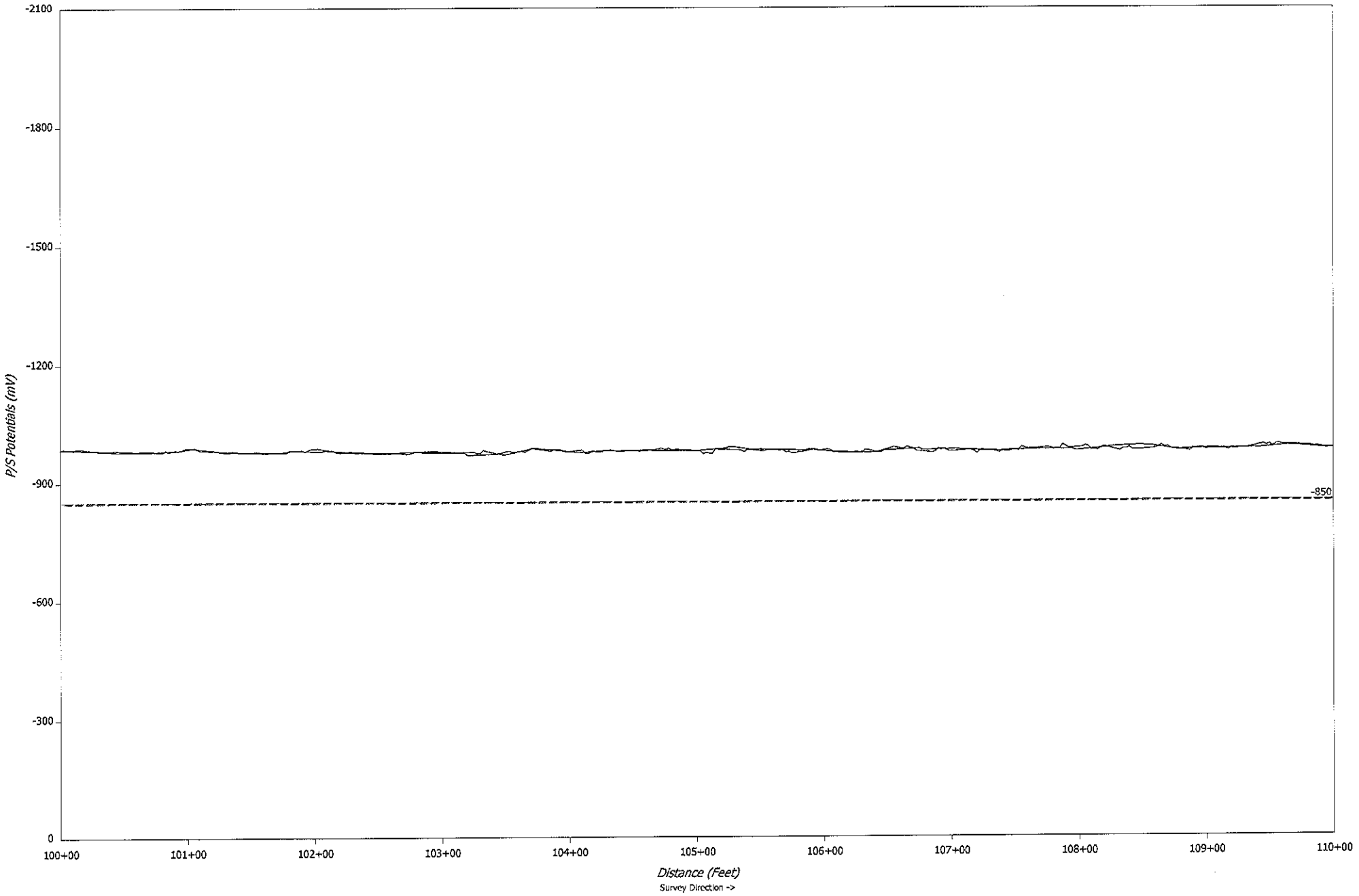

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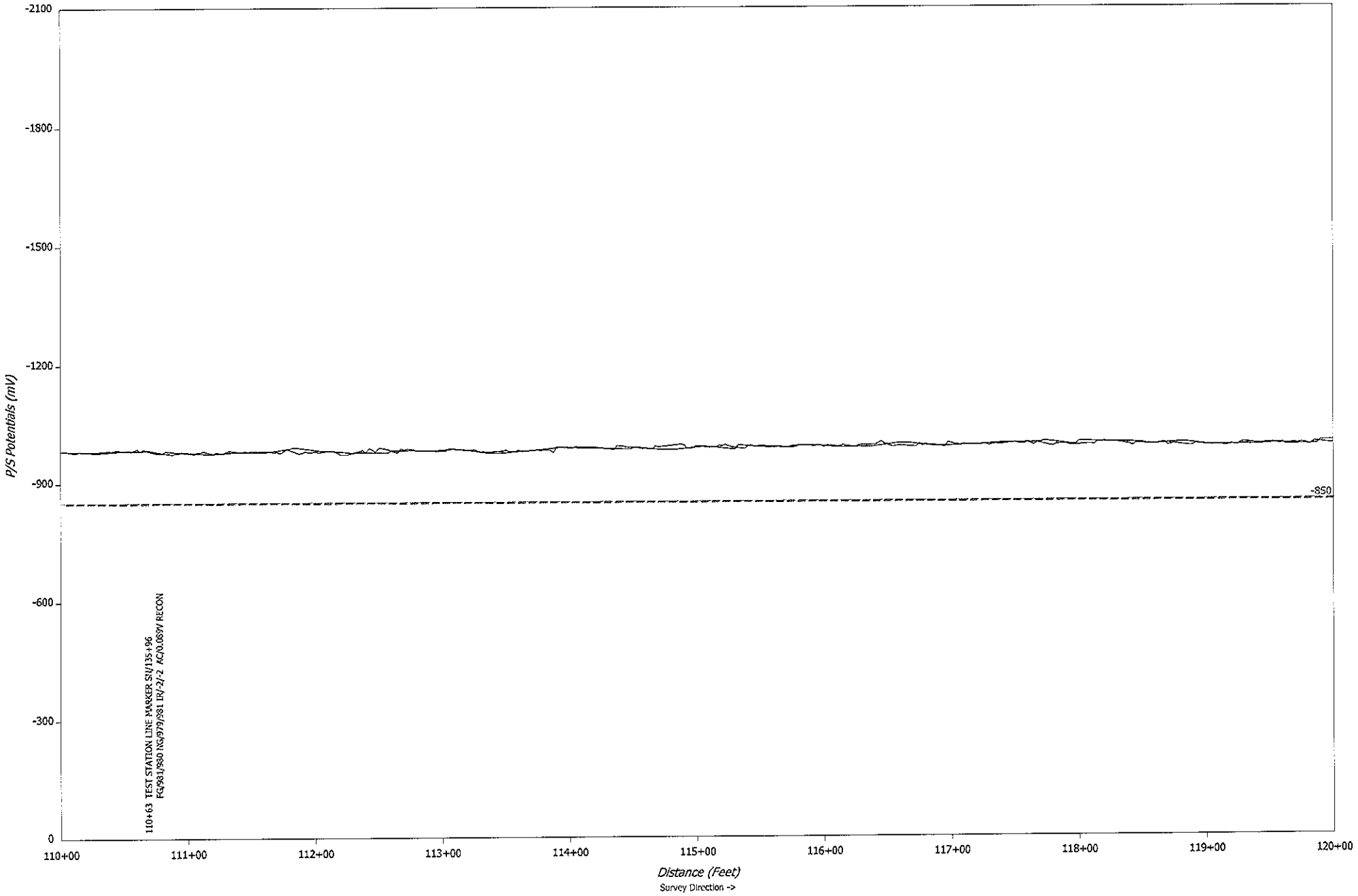

SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

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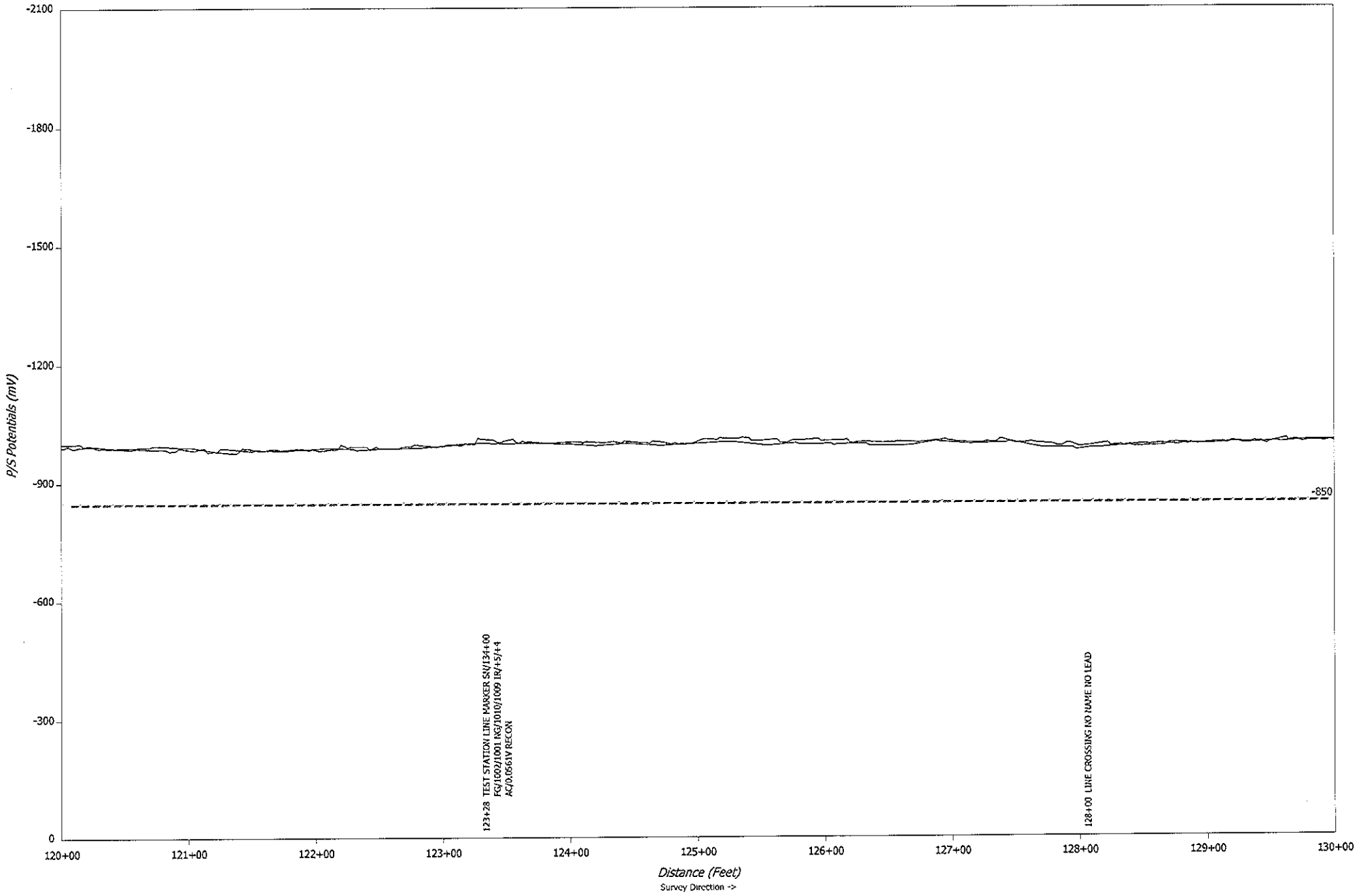

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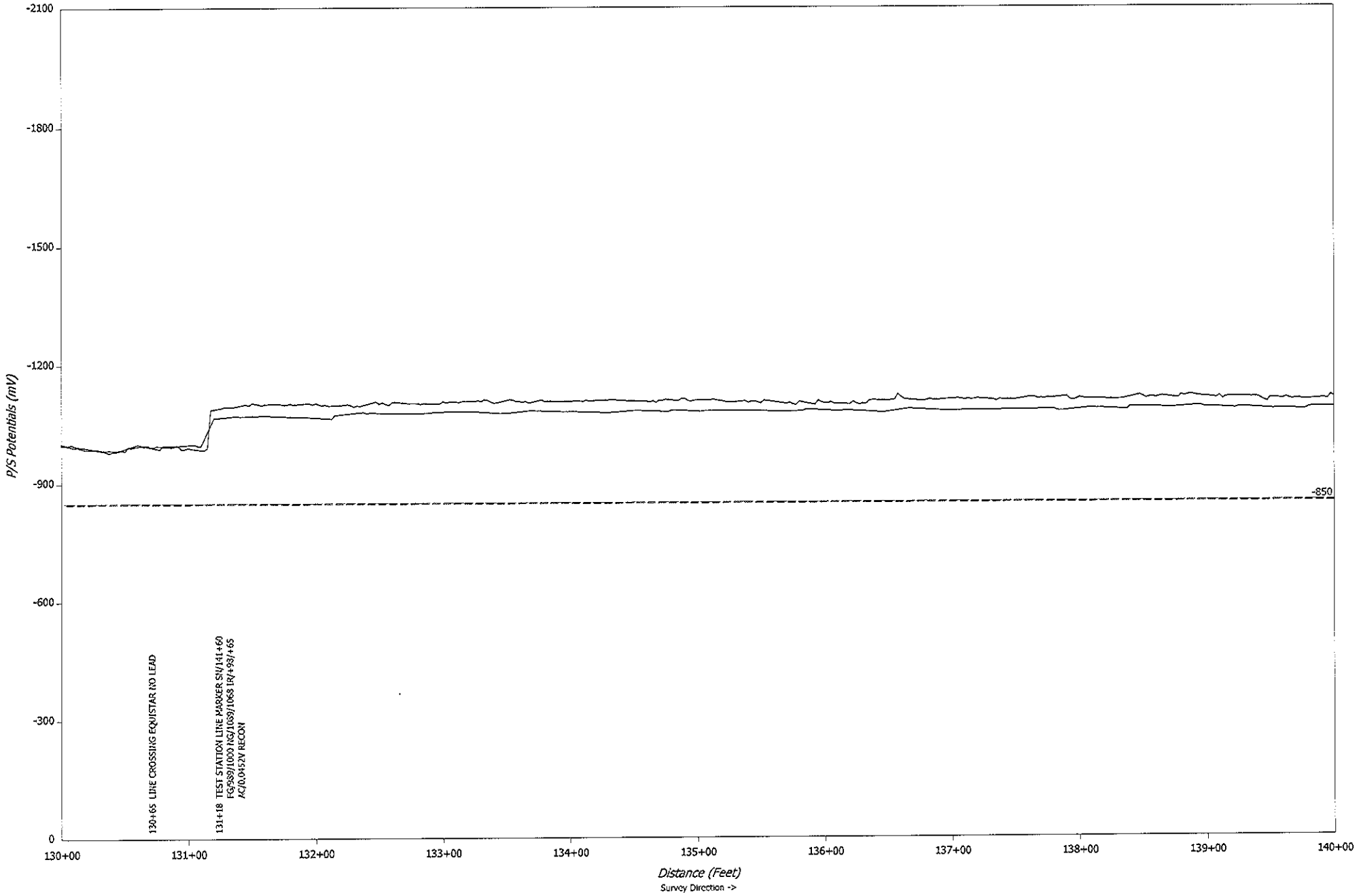
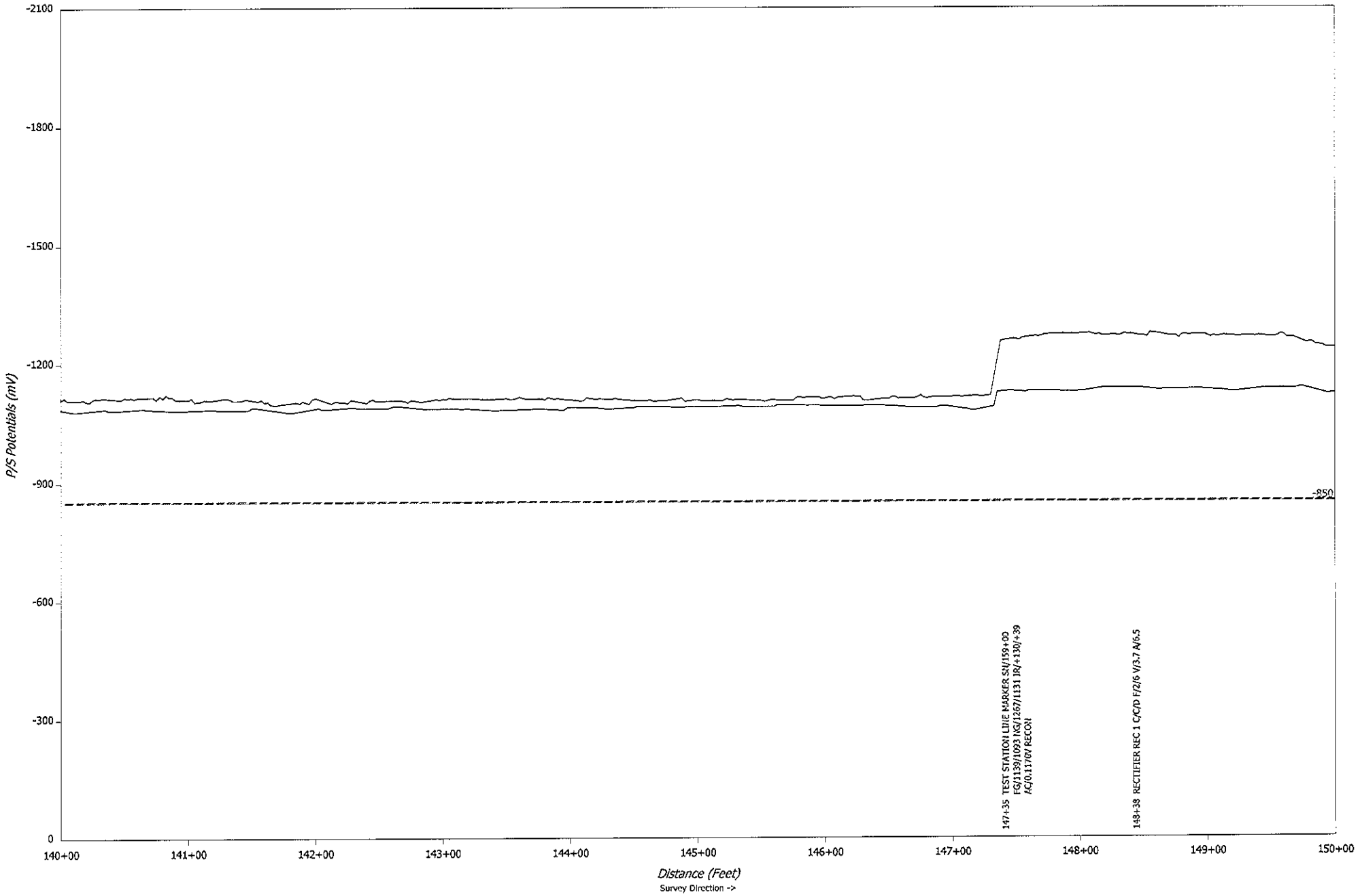


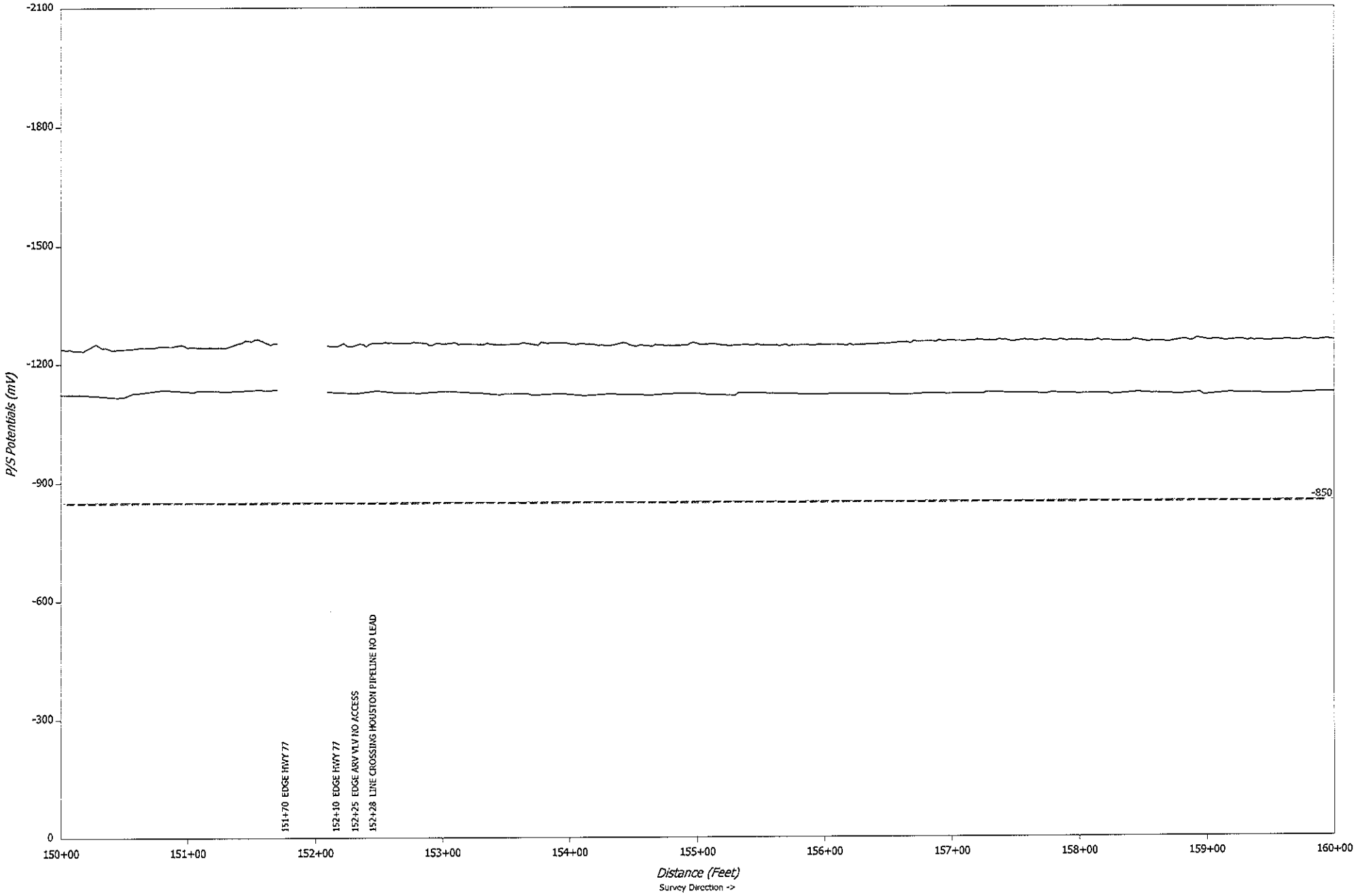
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



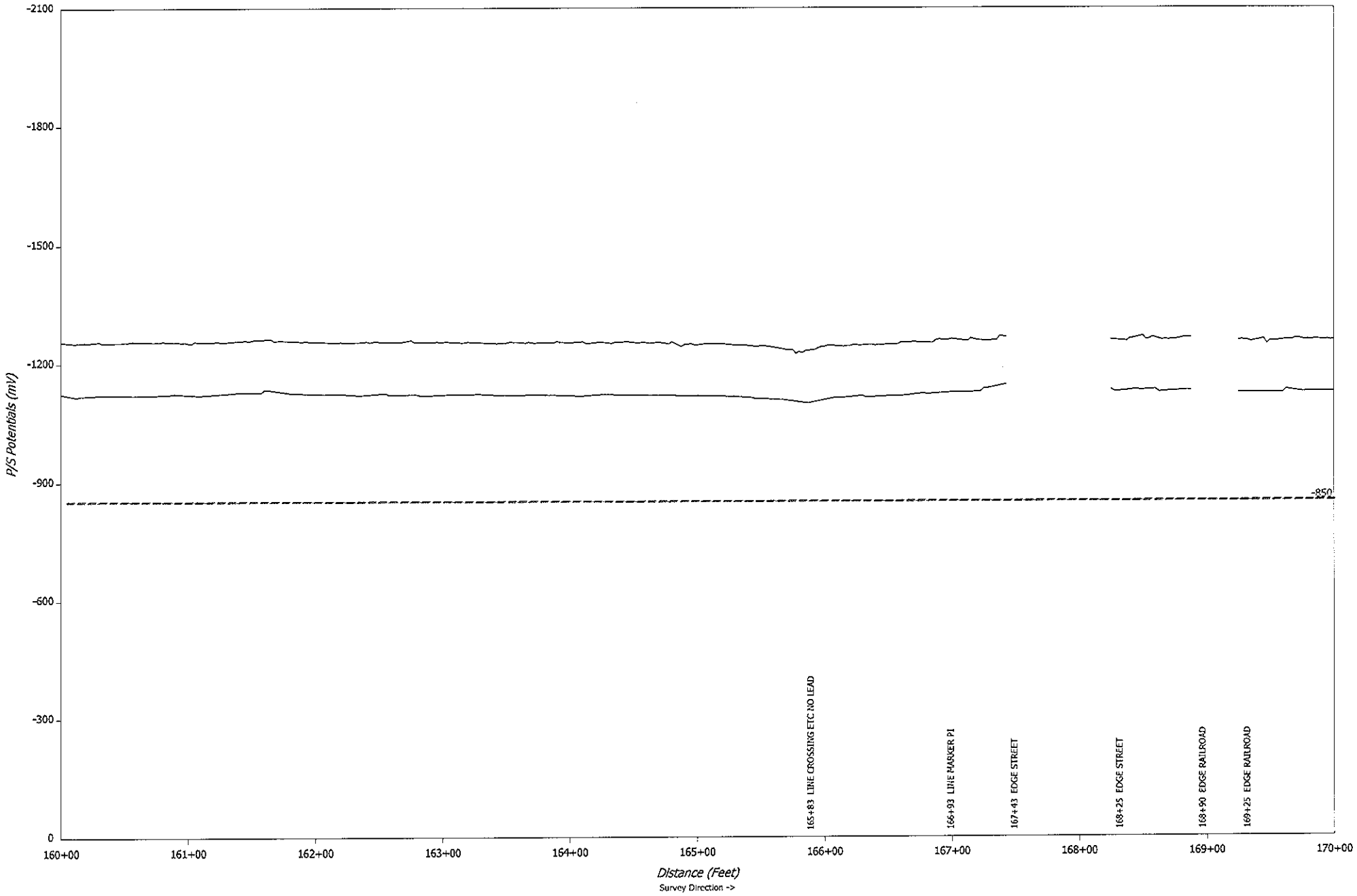
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



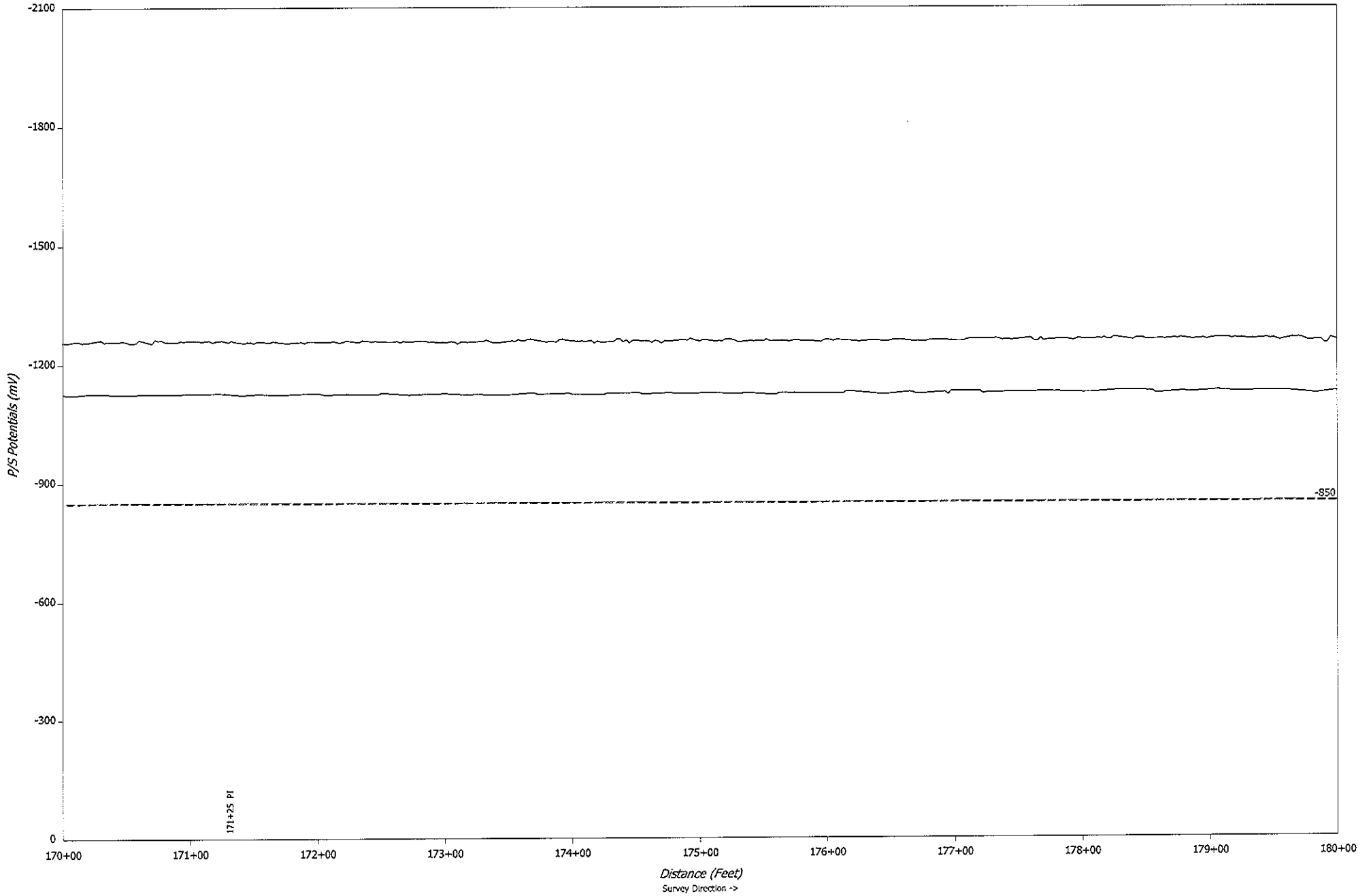
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



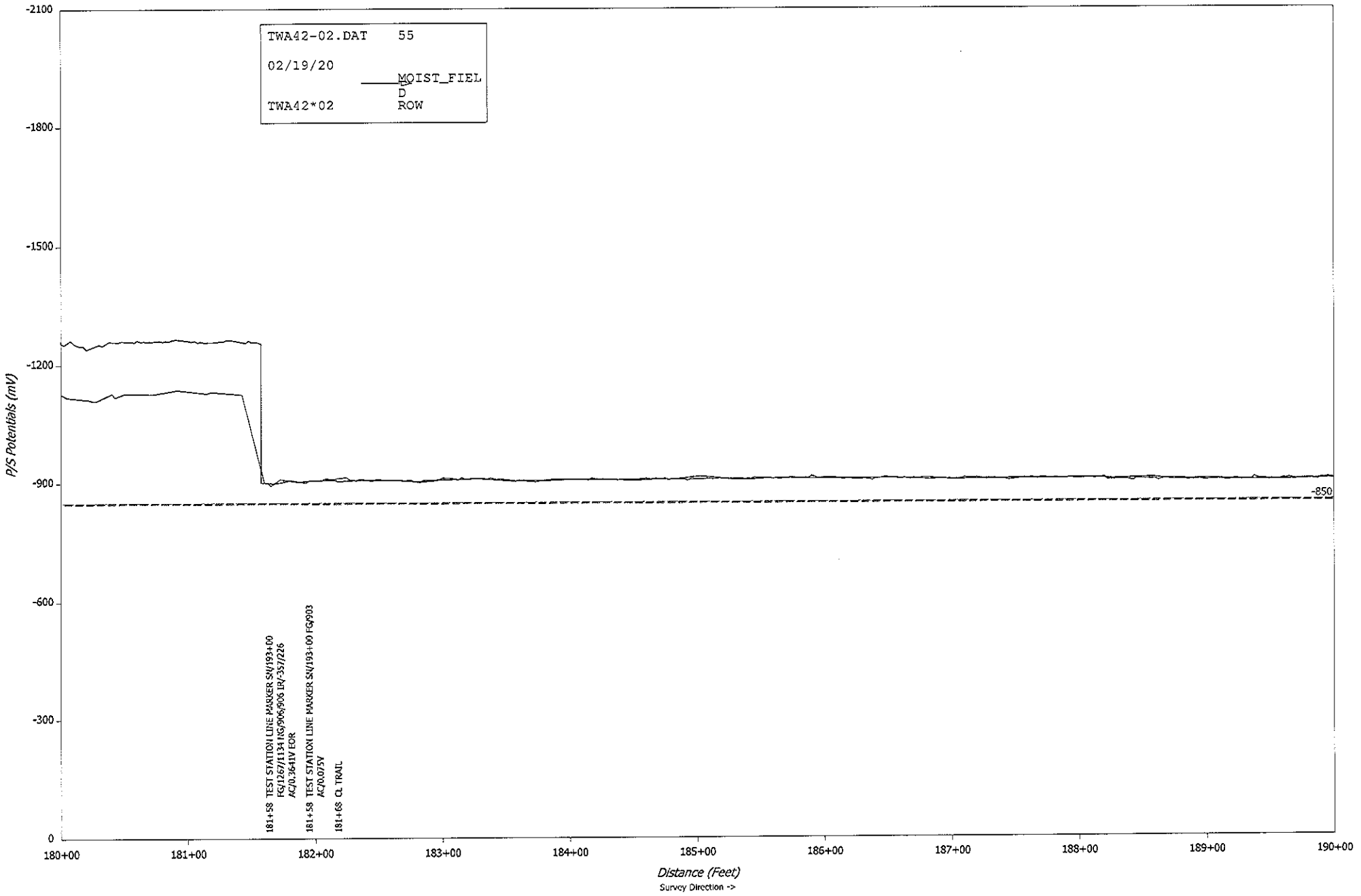
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro

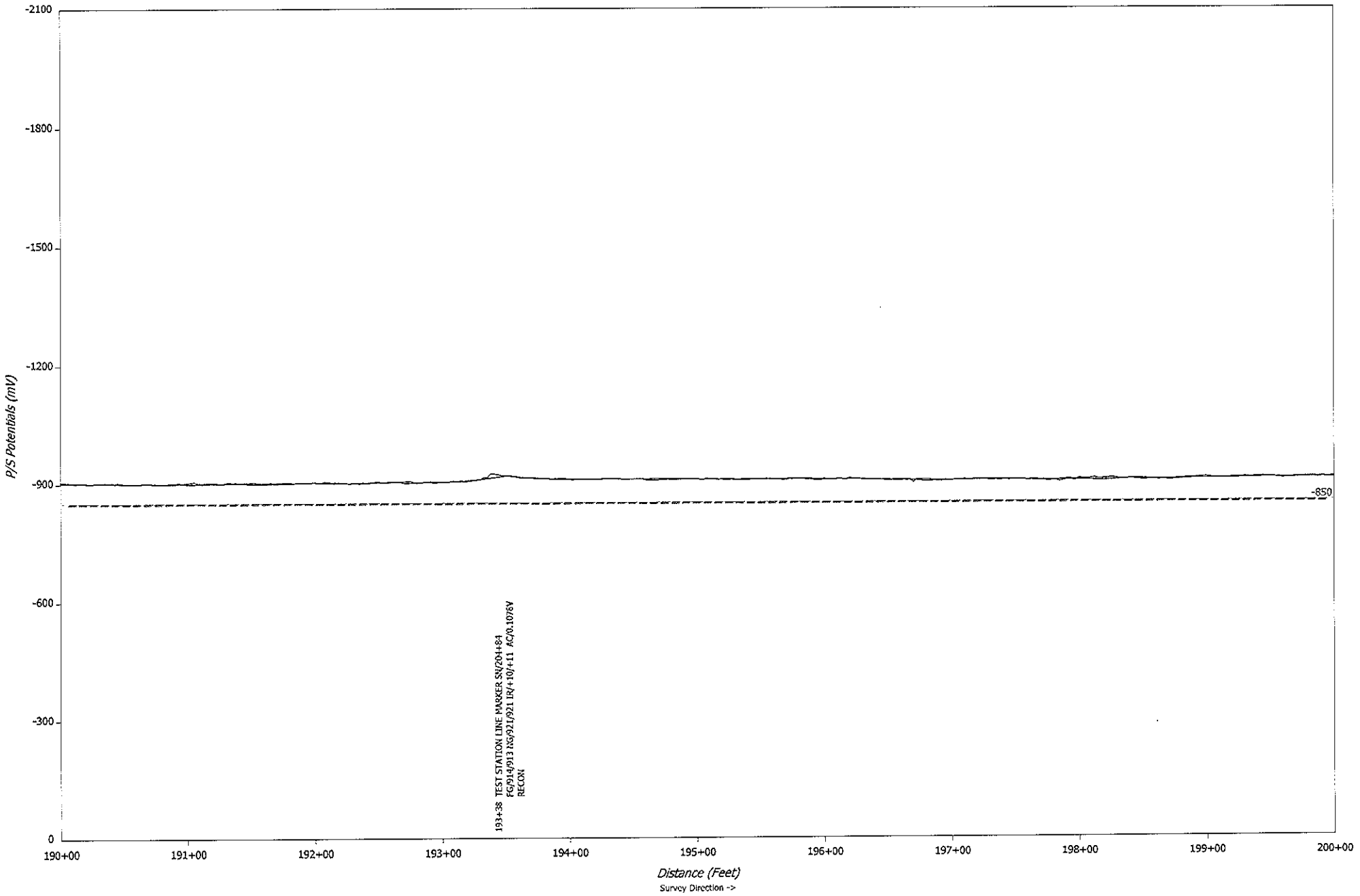


SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro

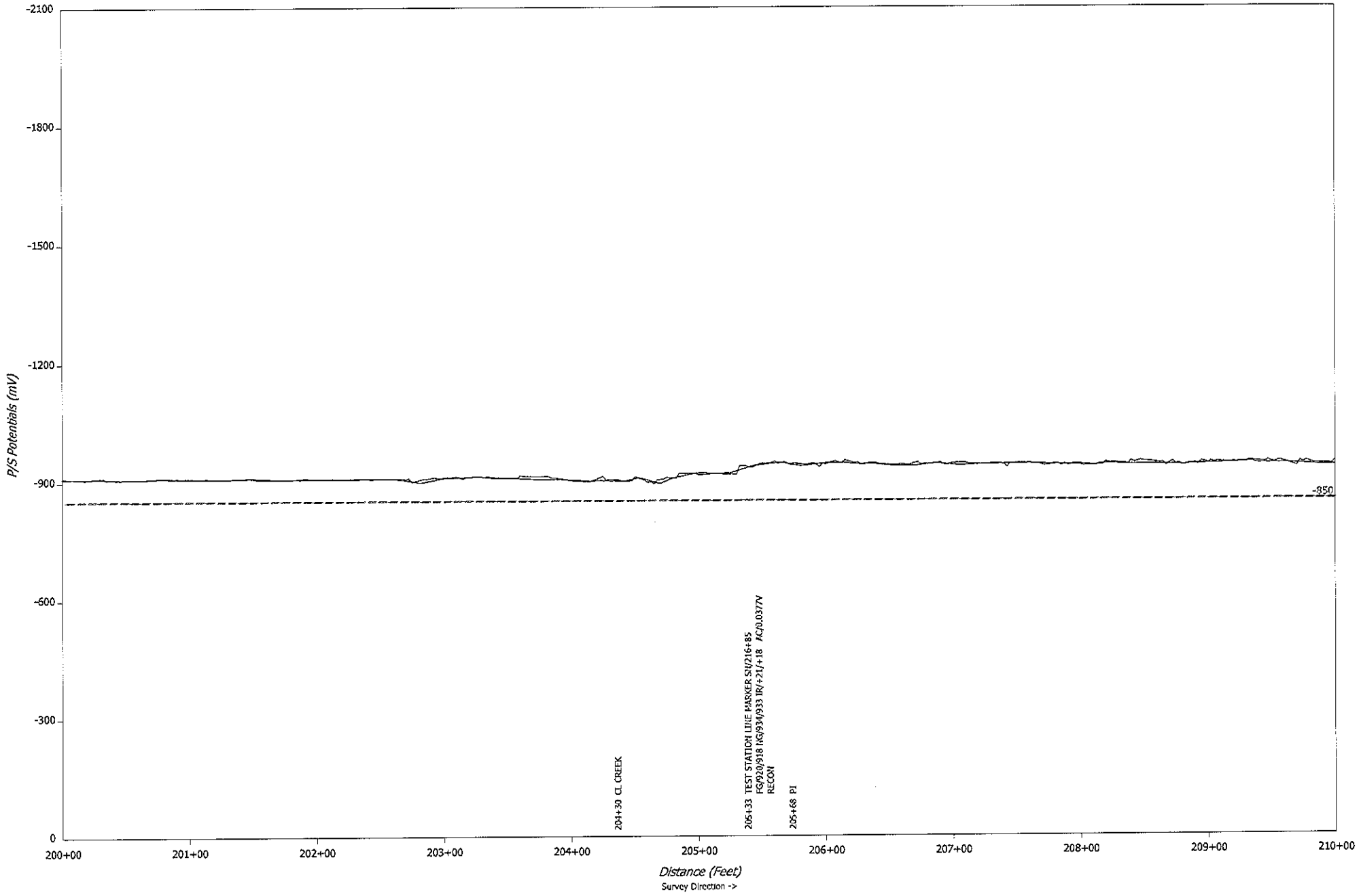


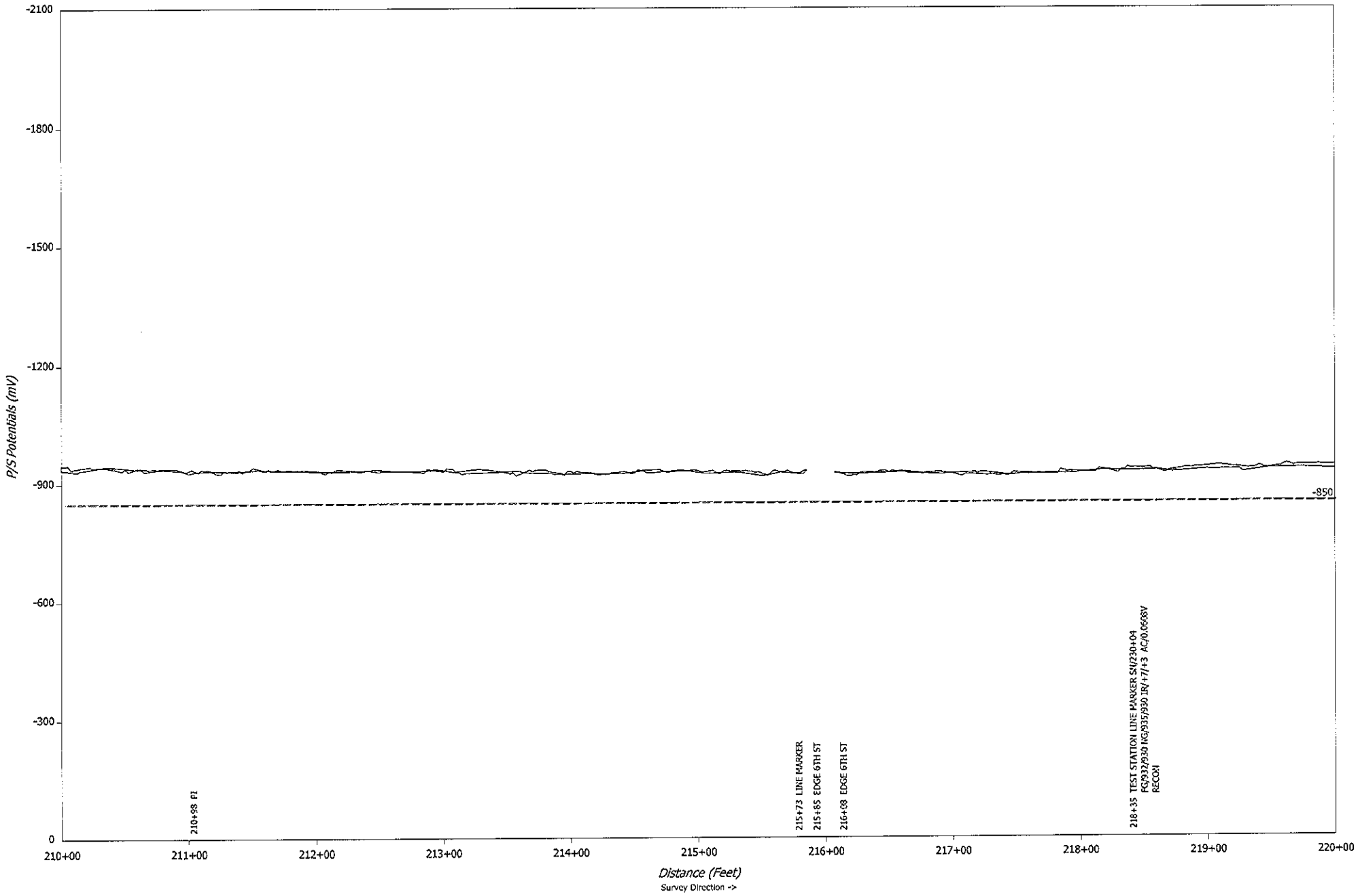
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	corpro



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

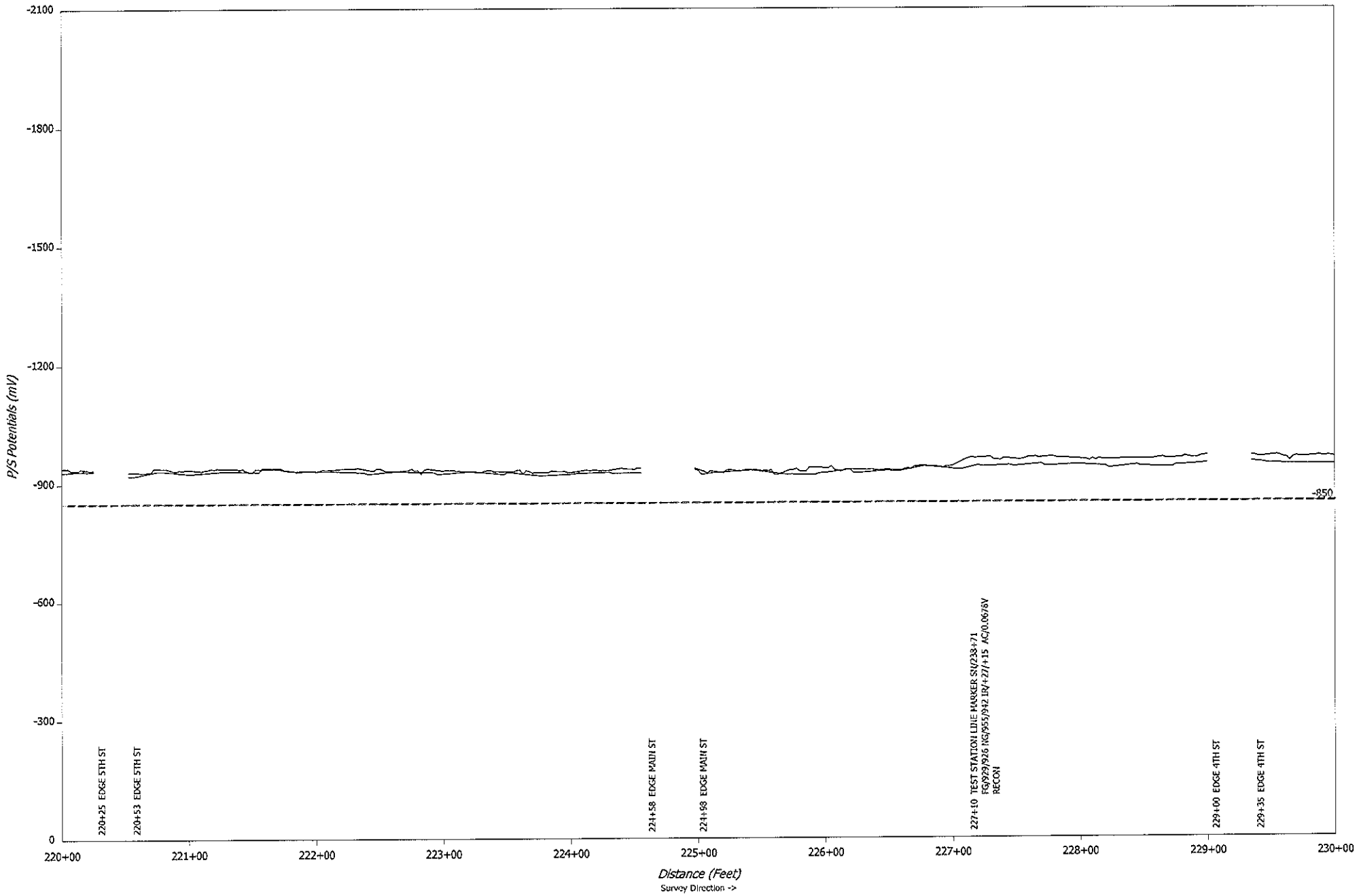
corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
204+30 CL CREEK
205+33 TEST STATION LINE MARKER SU/216+85
FG/920/918 HG/934/933 IR/+21/+18 AC/0.037V
RECON
205+68 PI
200+00
201+00
202+00
203+00
204+00
205+00
206+00
207+00
208+00
209+00
210+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro



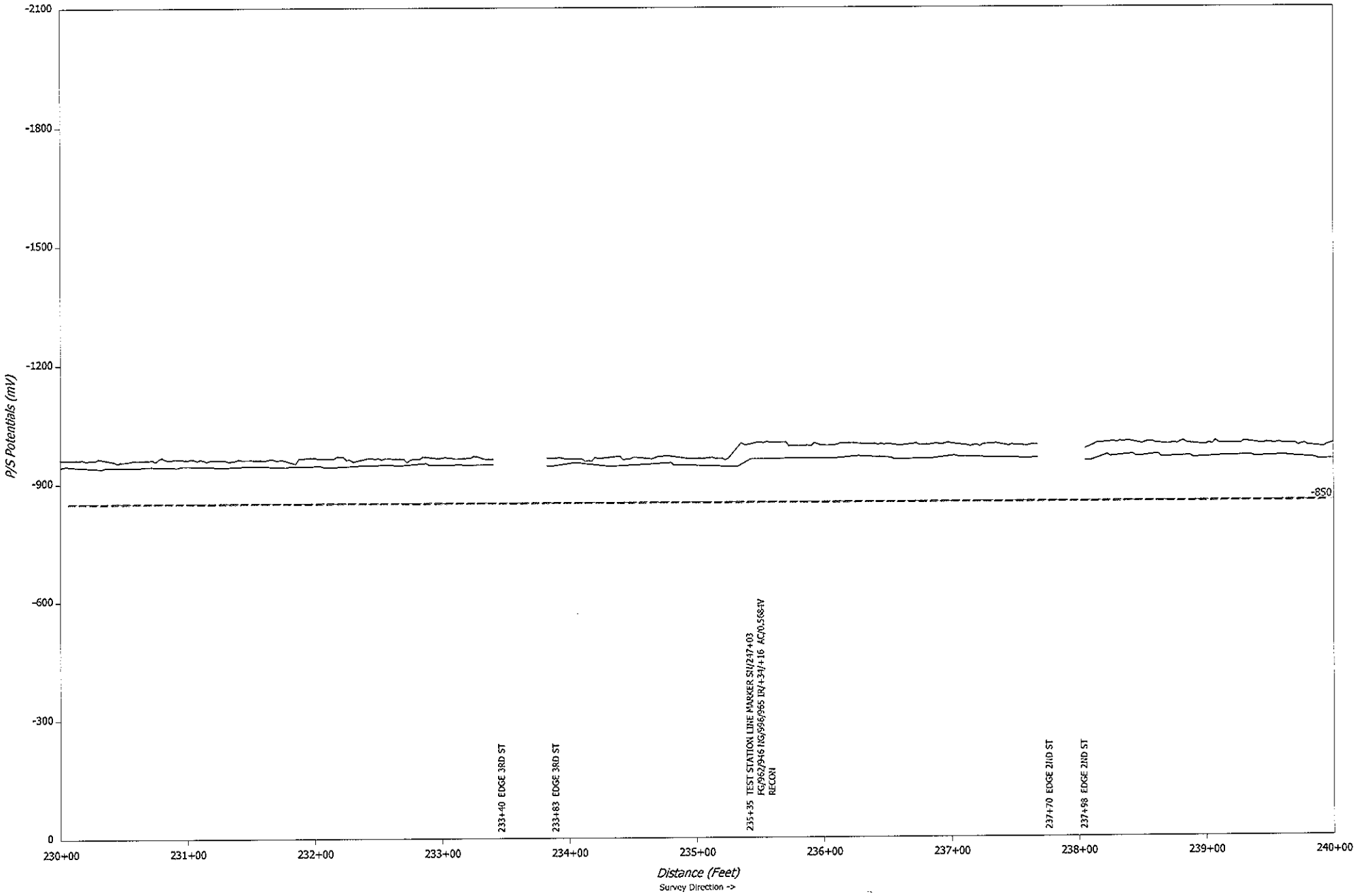
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



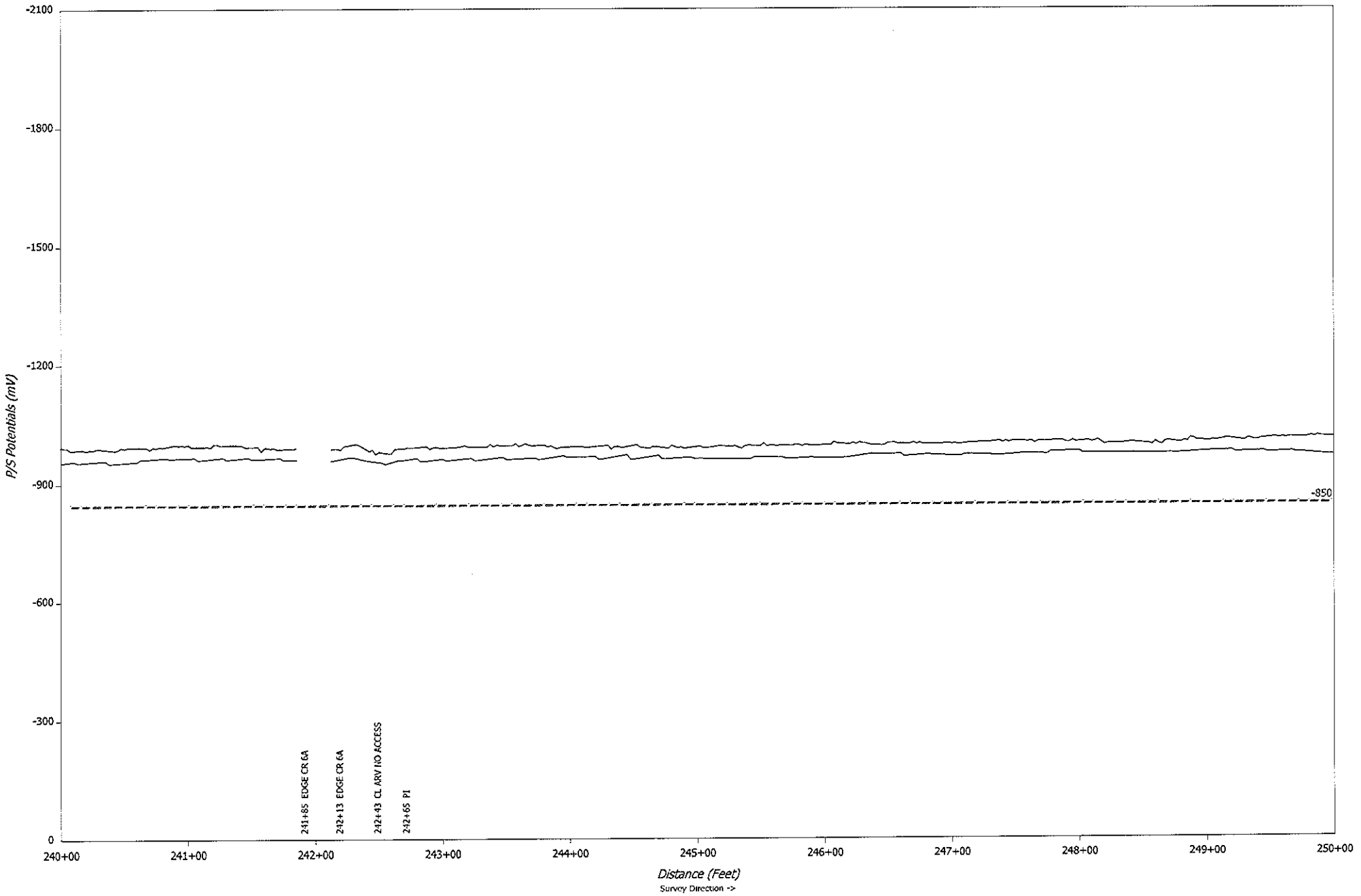
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



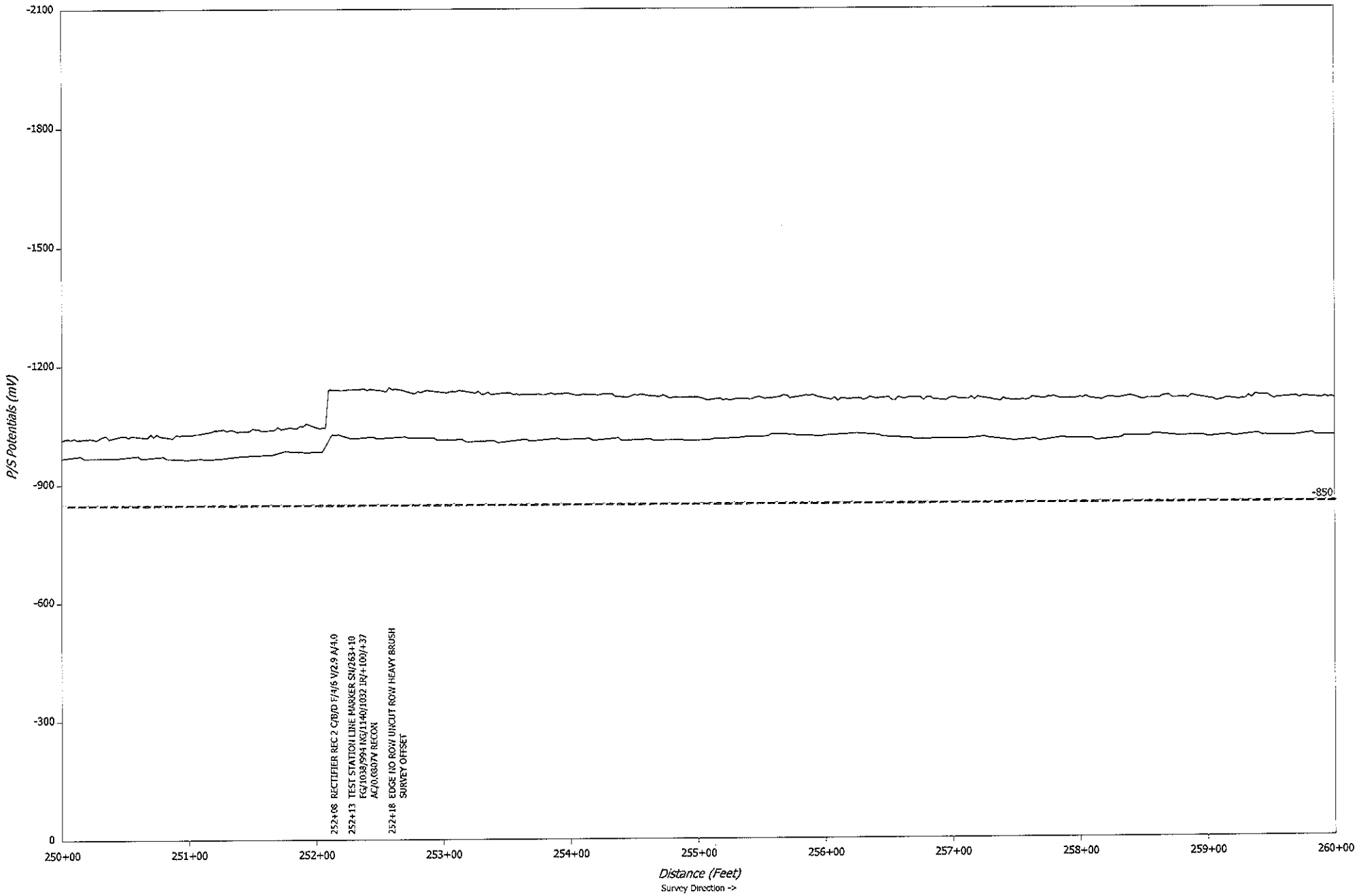
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



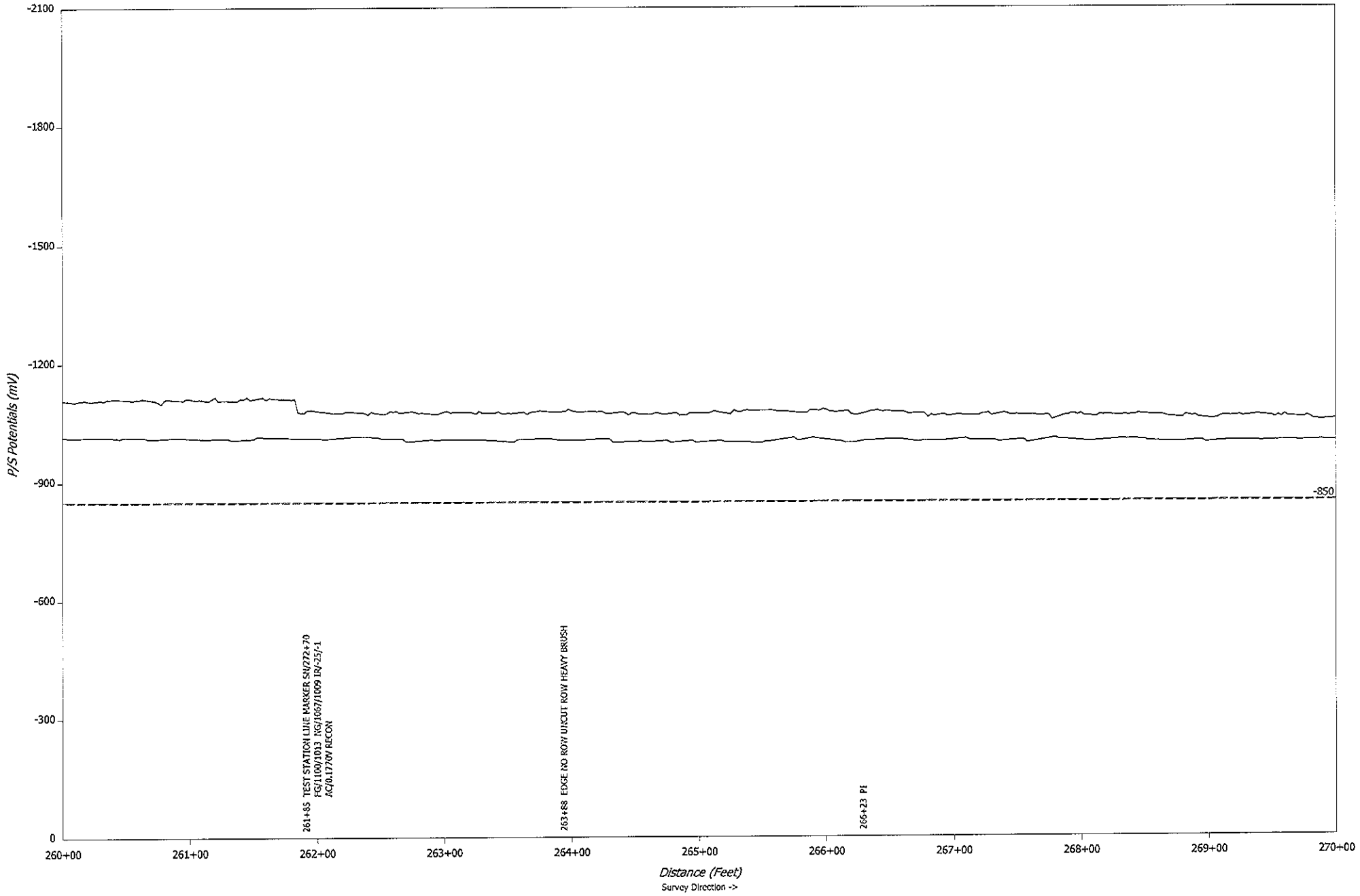
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



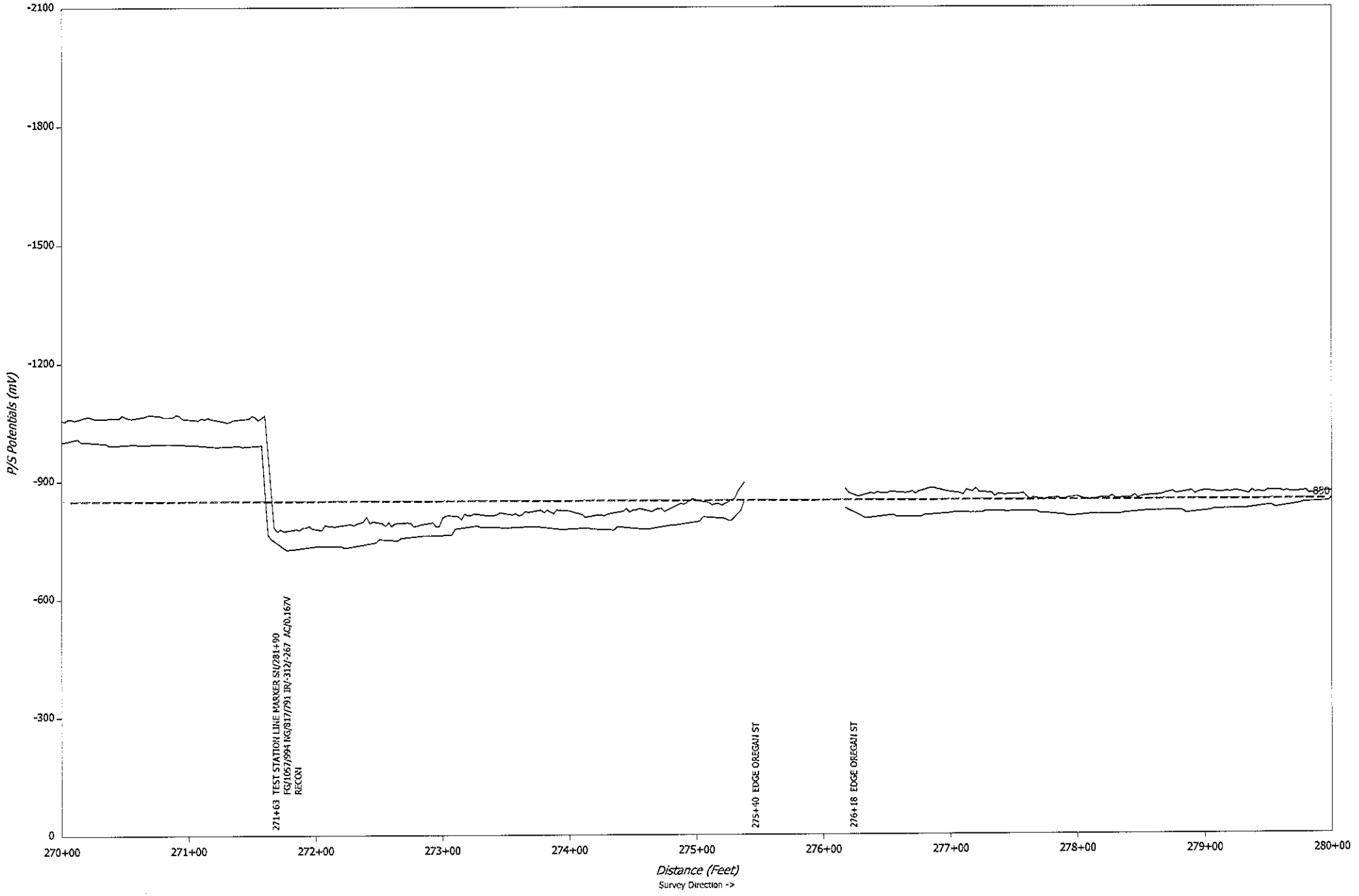
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

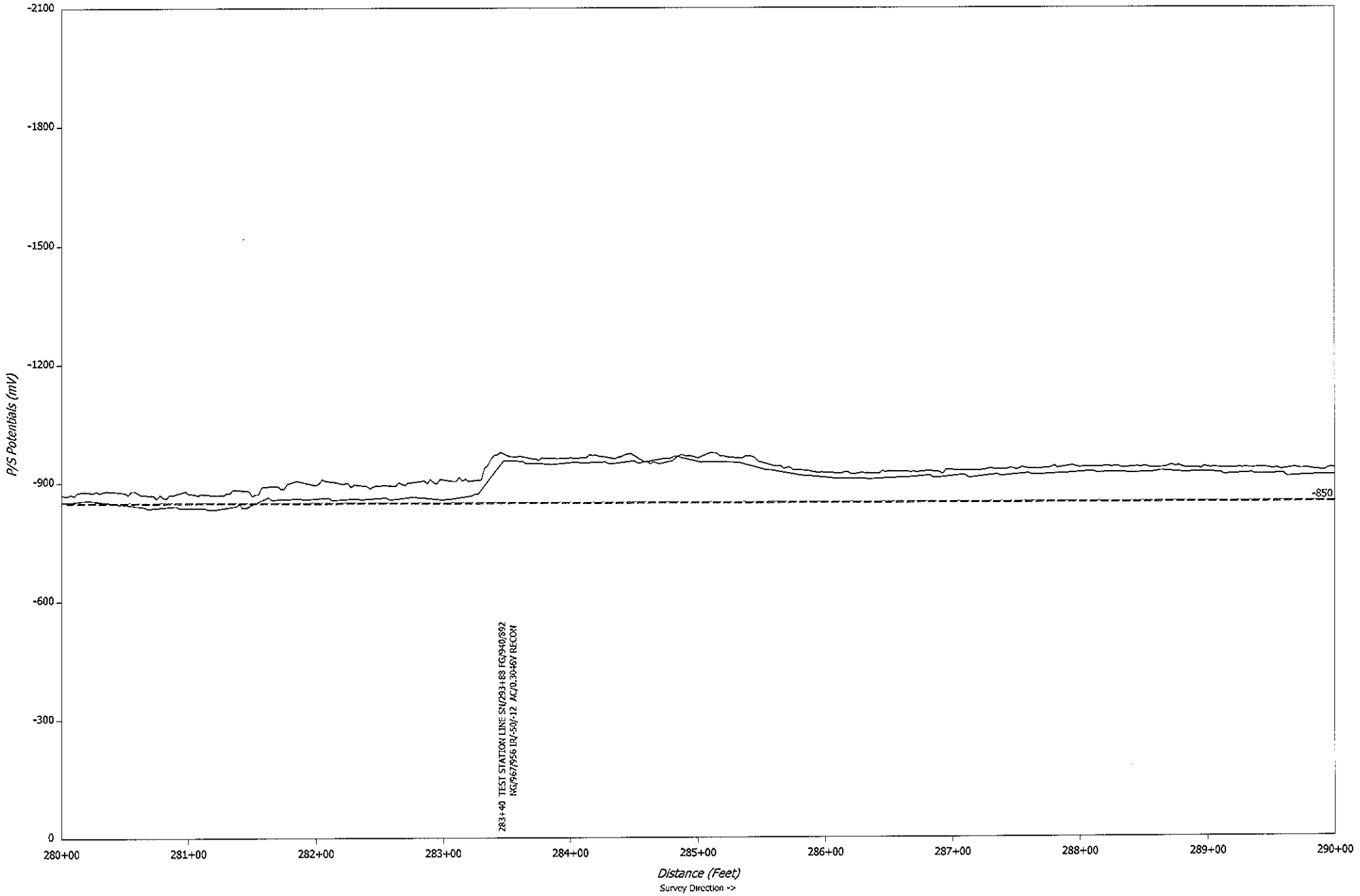
corrpro



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

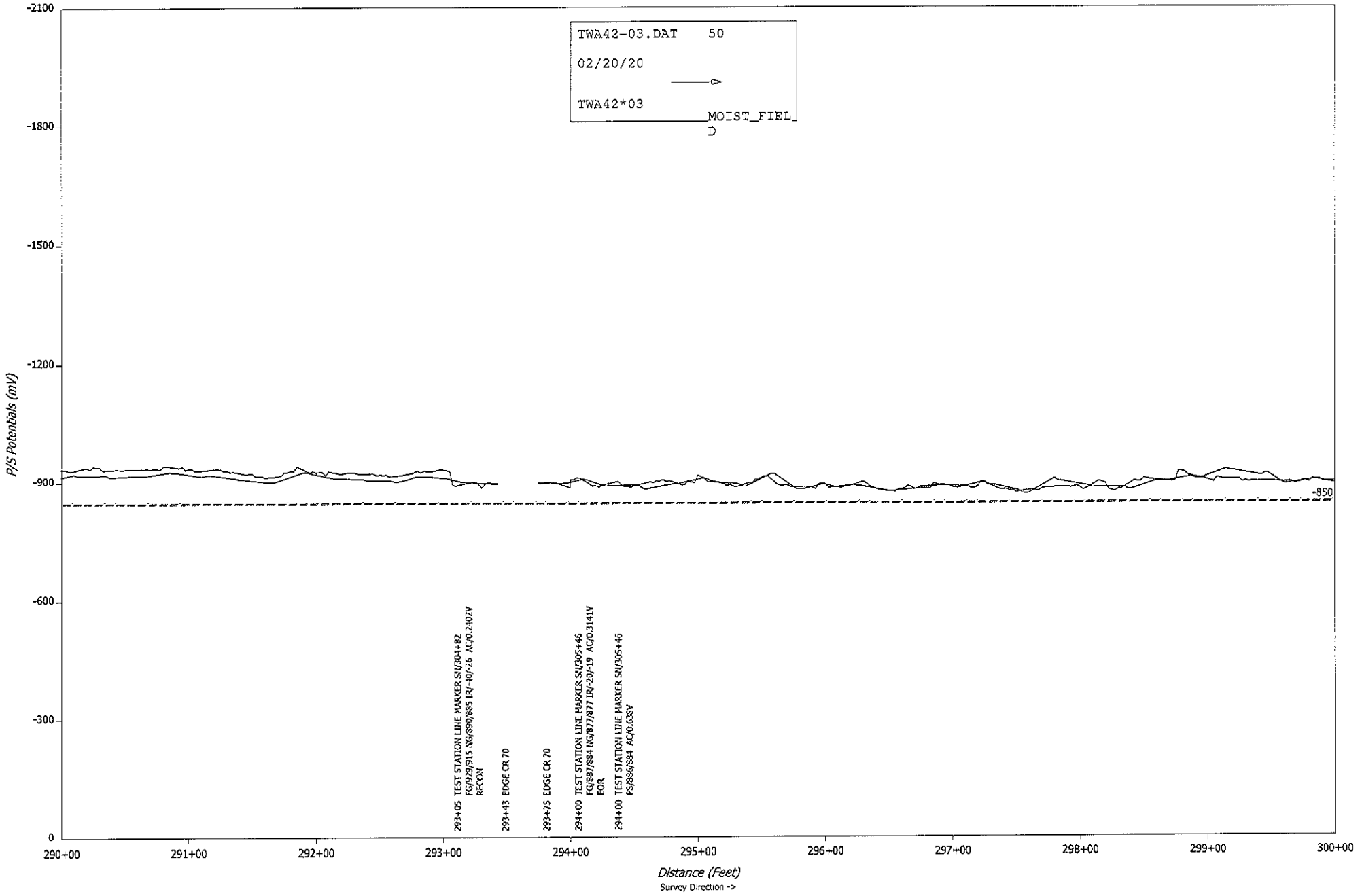
corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
271+63 TEST STATION LINE MARKER SI/281+90
FG/1057/994 HG/817/791 IR/-312/-267 AC/0.167V
RECON
275+40 EDGE OREGAN ST
276+18 EDGE OREGAN ST
270+00
271+00
272+00
273+00
274+00
275+00
276+00
277+00
278+00
279+00
280+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro



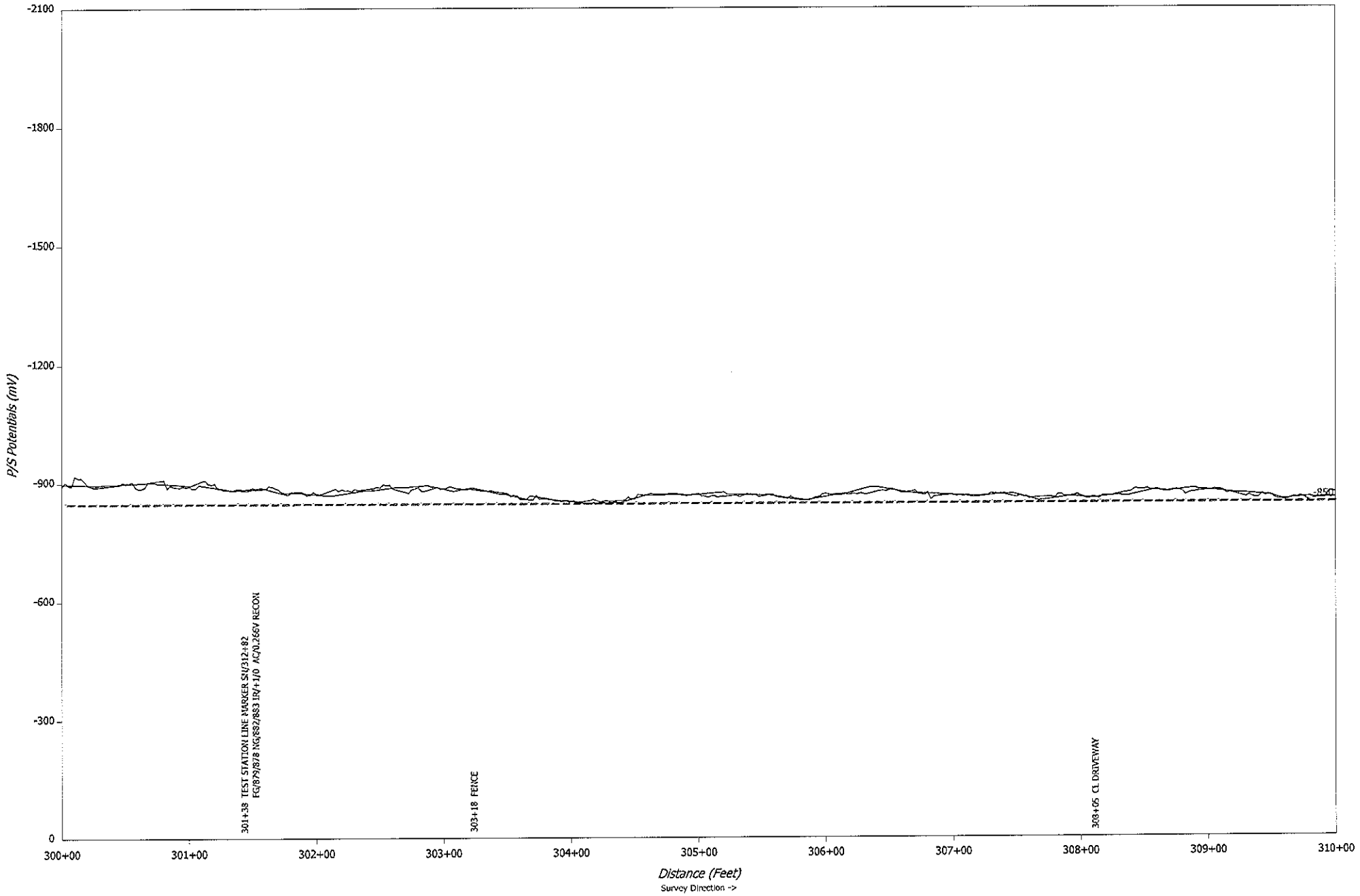
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



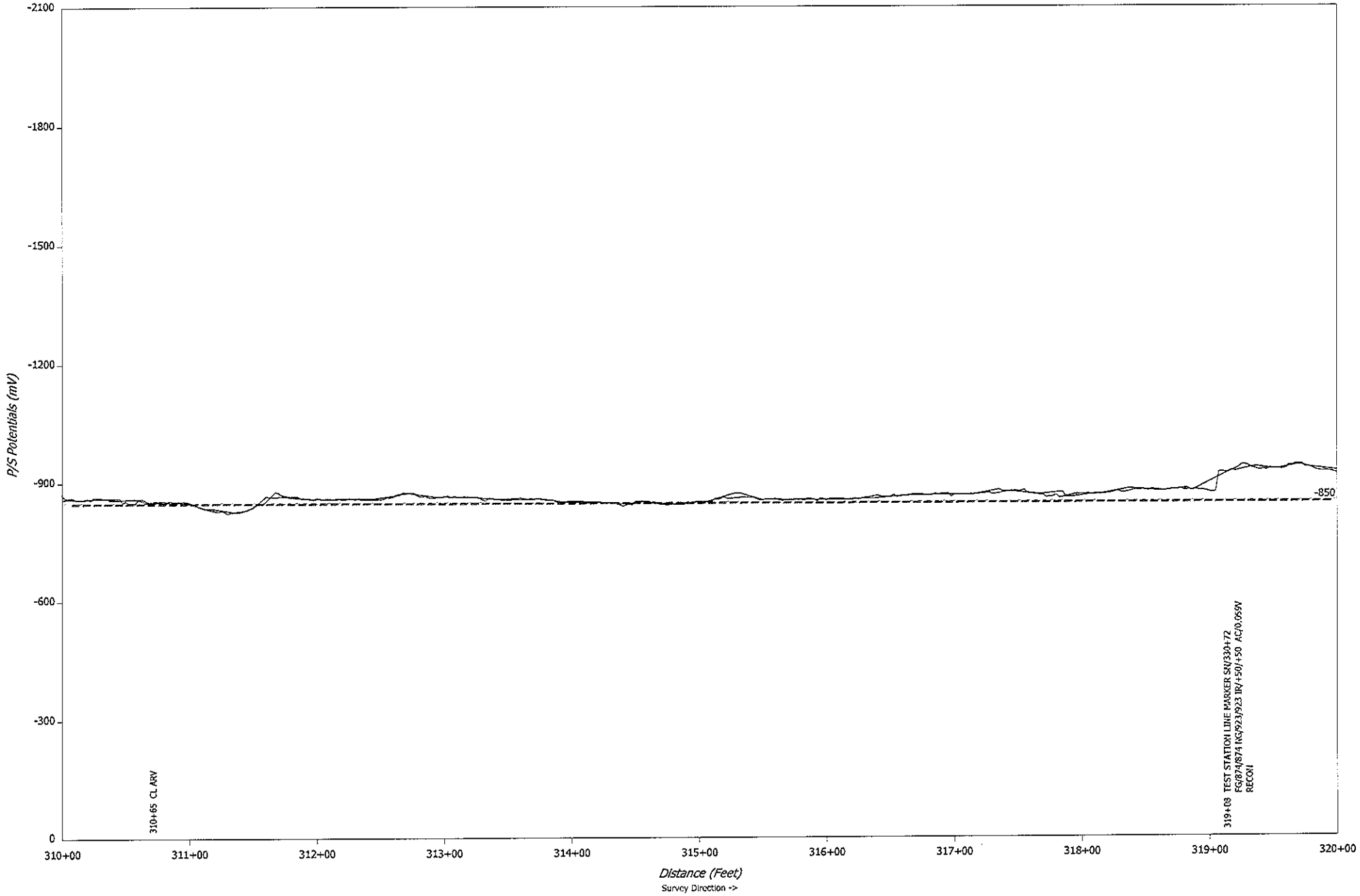
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



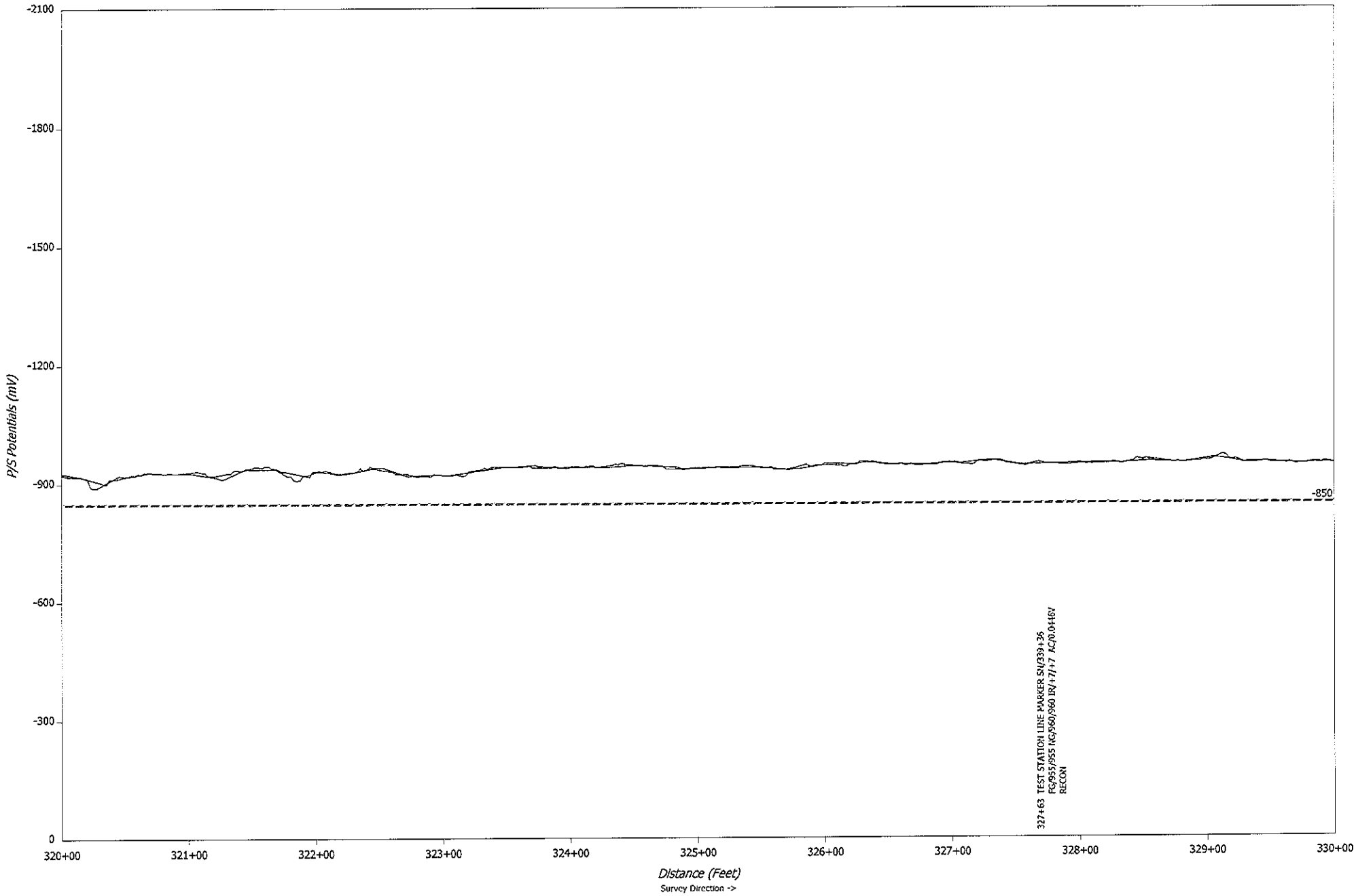
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



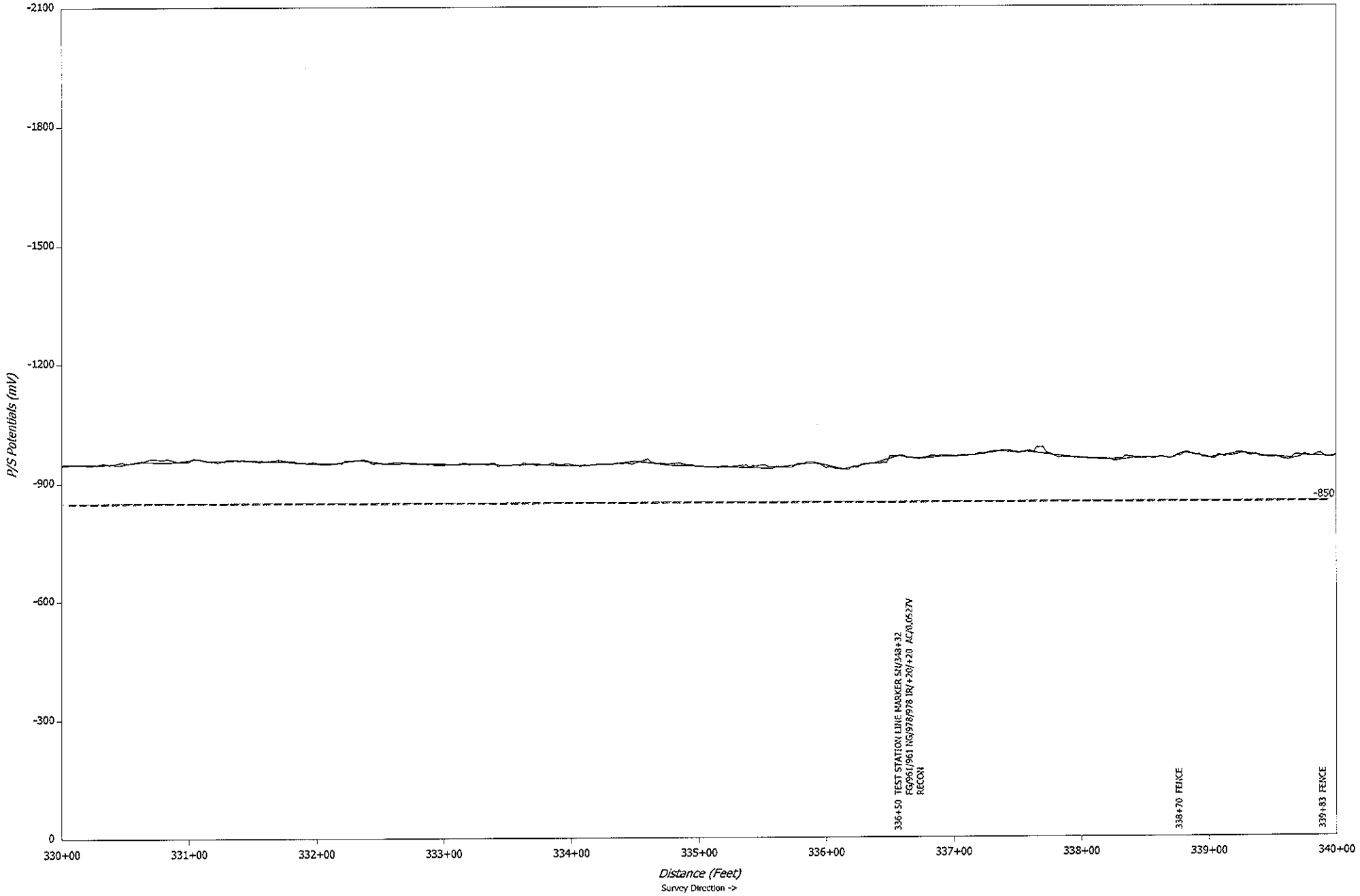
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



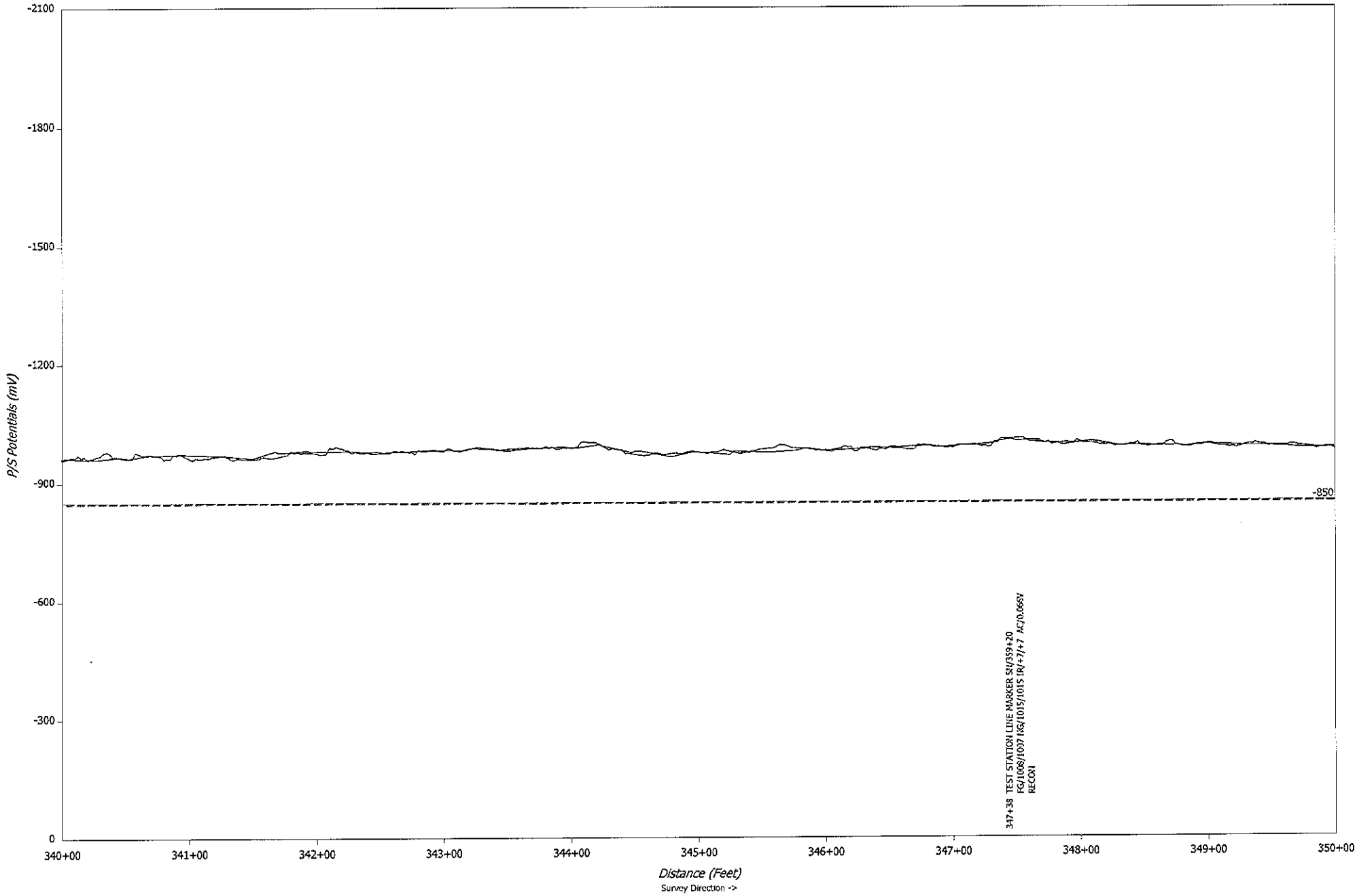
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

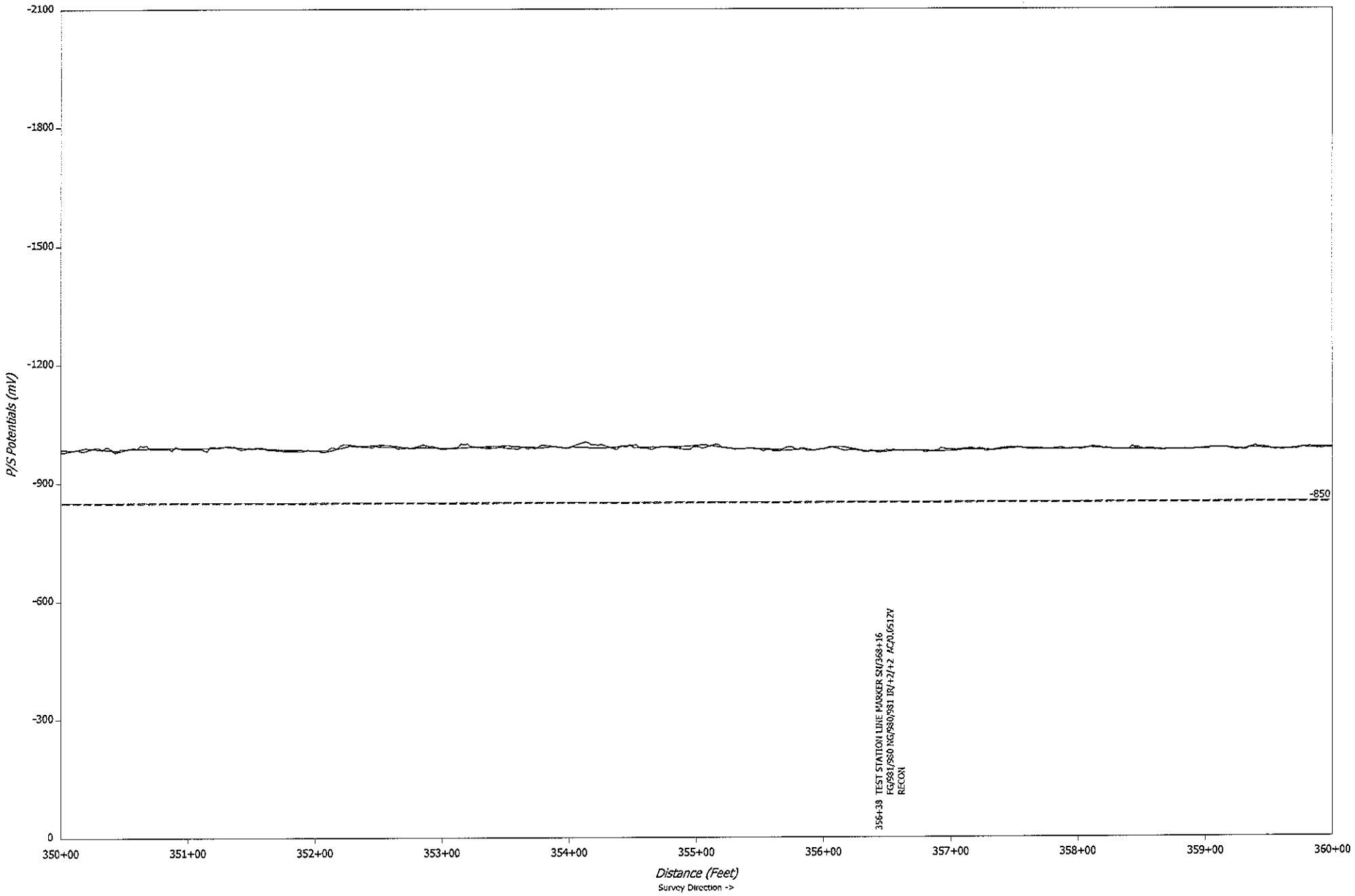
corrpro



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

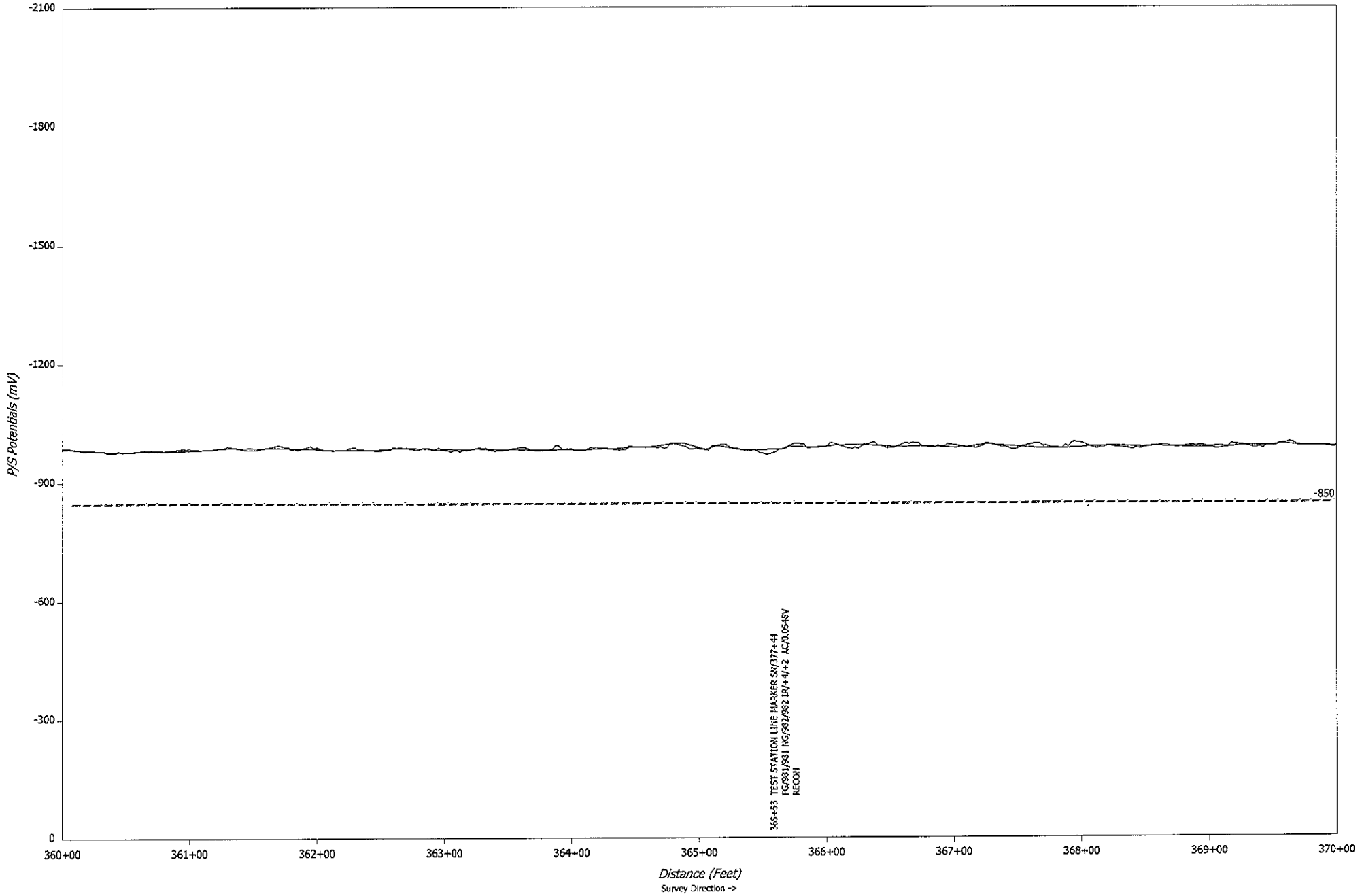
corrpro

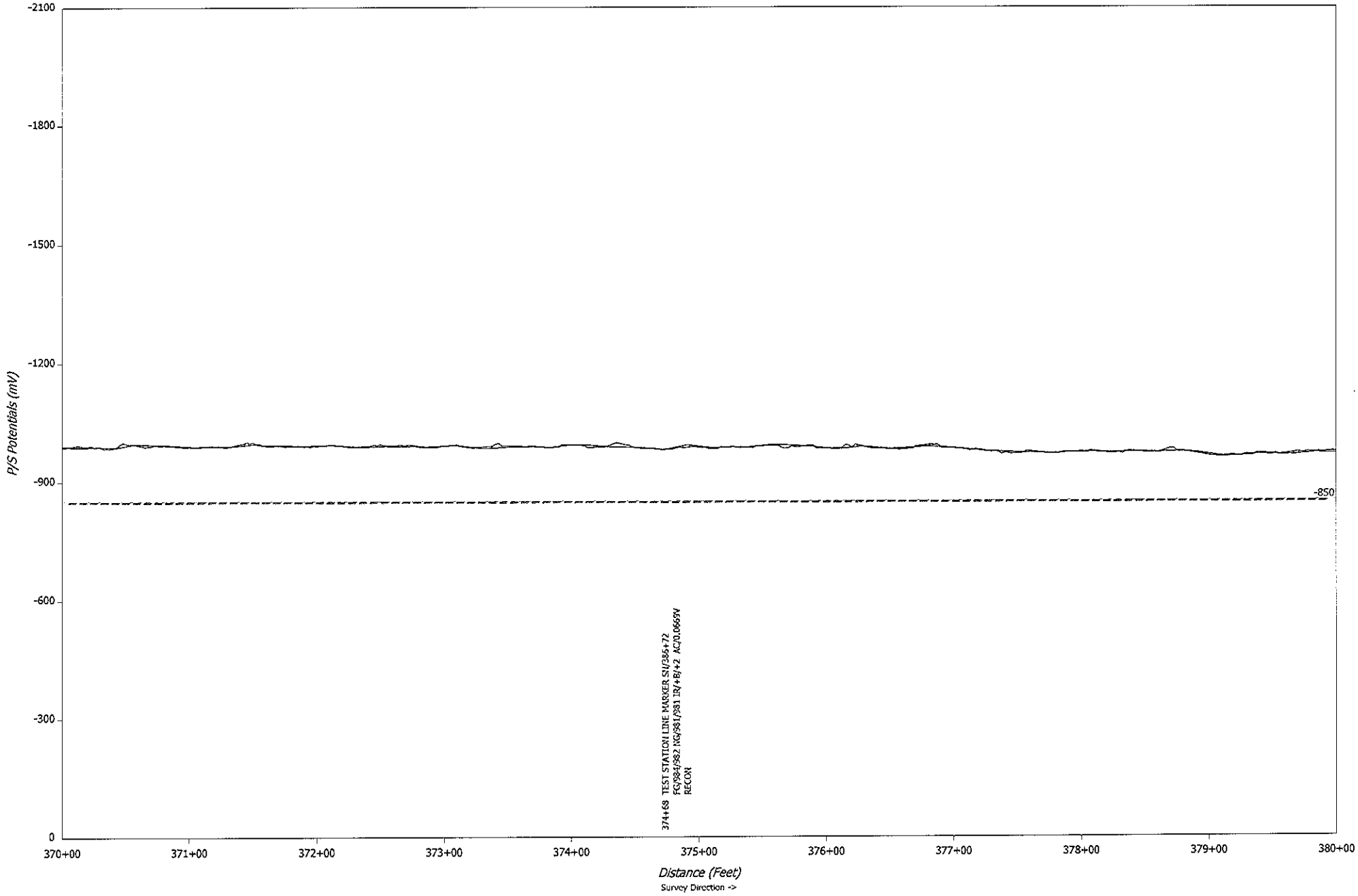

-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
347+38 TEST STATION LINE MARKER SW359+20
FG/1008/1007 NG/1015/1015 IR/+7/+7 AC/0.065V
RECON
340+00
341+00
342+00
343+00
344+00
345+00
346+00
347+00
348+00
349+00
350+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro

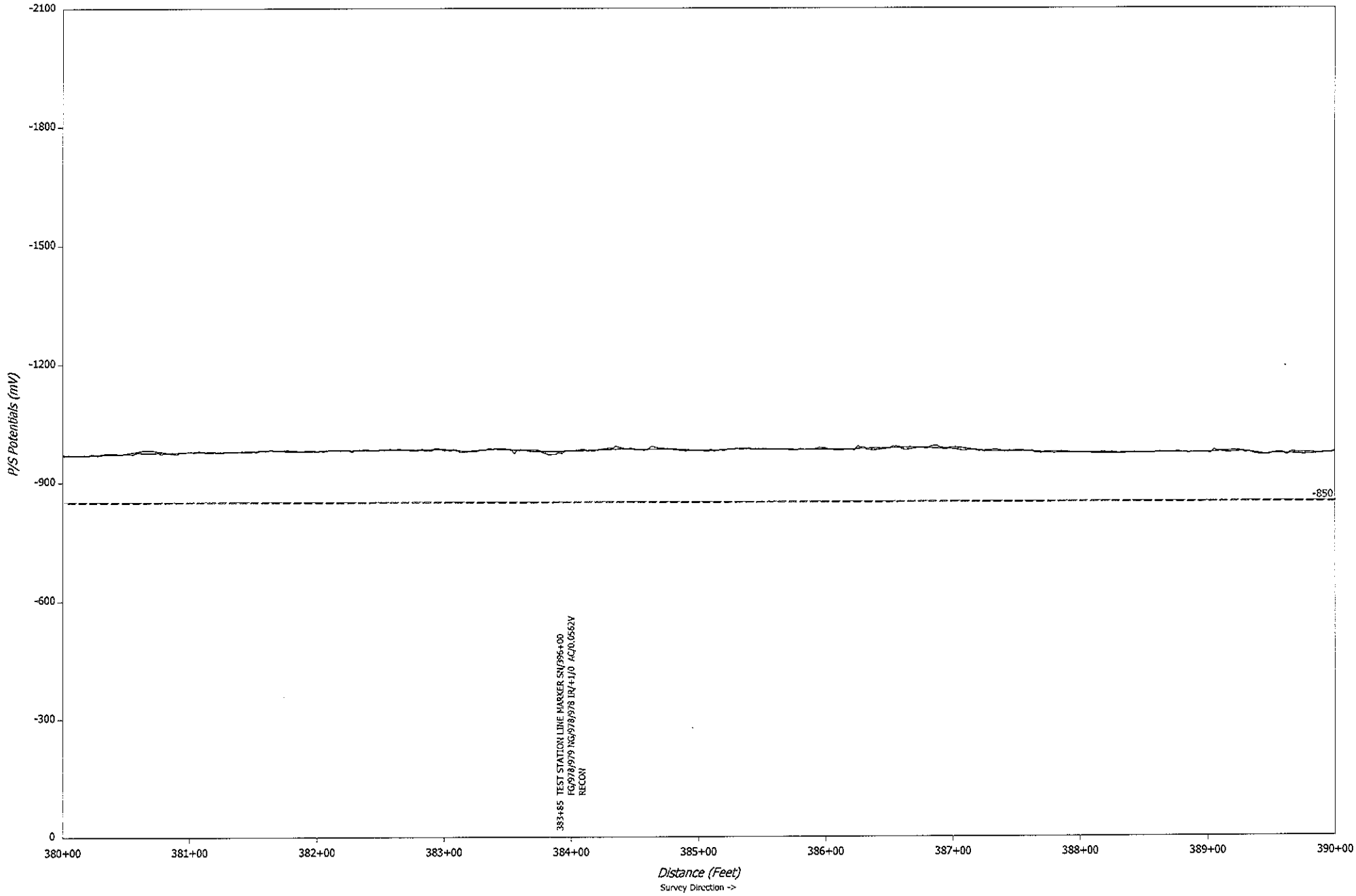


SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro

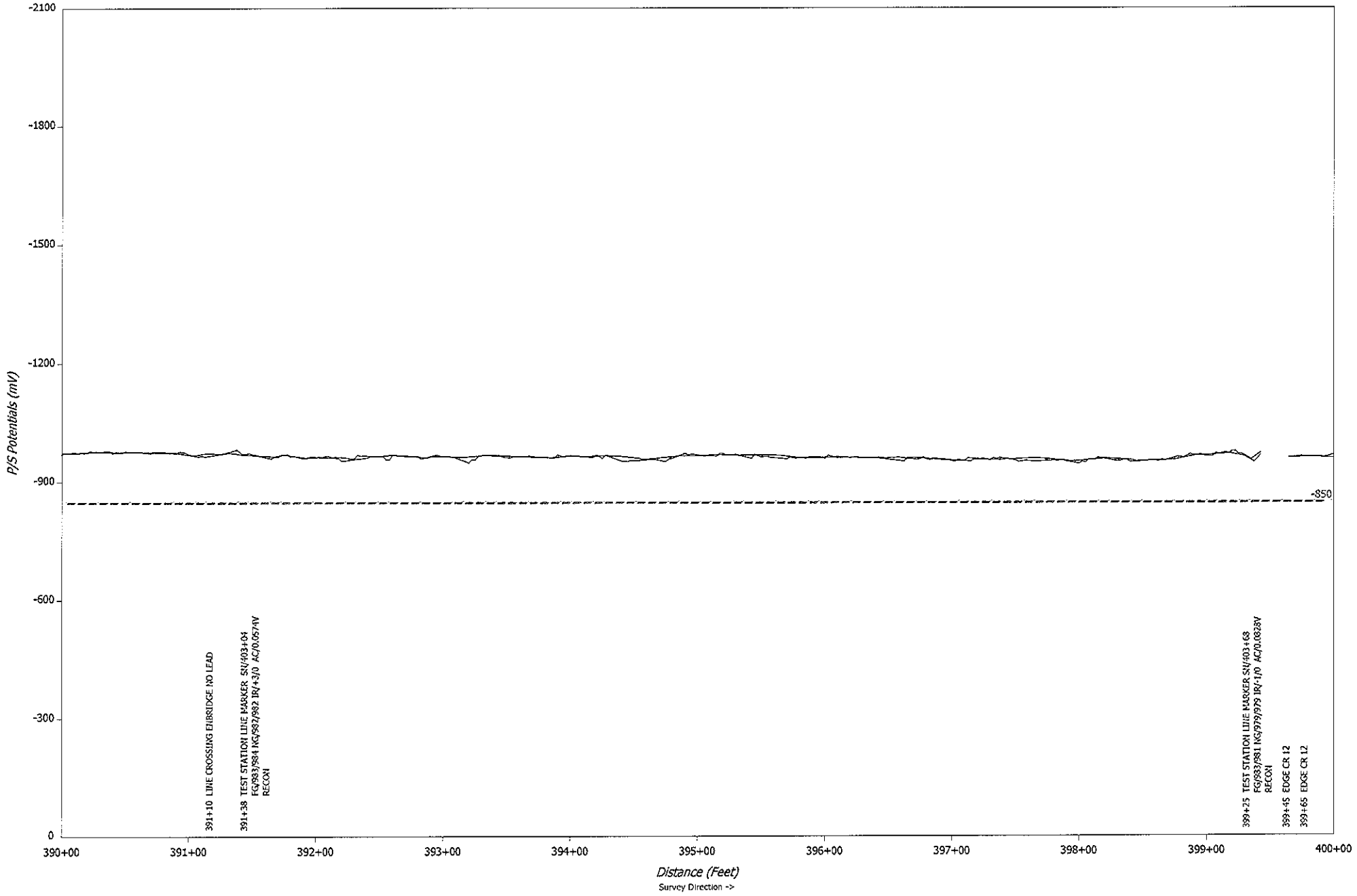

-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
365+53 TEST STATION LINE MARKER SN/377+44
FG/981/981 NG/982/982 LP/+4/+2 AC/0.05-48V
RECOH
360+00
361+00
362+00
363+00
364+00
365+00
366+00
367+00
368+00
369+00
370+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
374+69 TEST STATION LINE MARKER SU/386+72
FG/984/982 NG/981/983 1R/+B/+2 AC/0.0665V
RECOM
370+00
371+00
372+00
373+00
374+00
375+00
376+00
377+00
378+00
379+00
380+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro



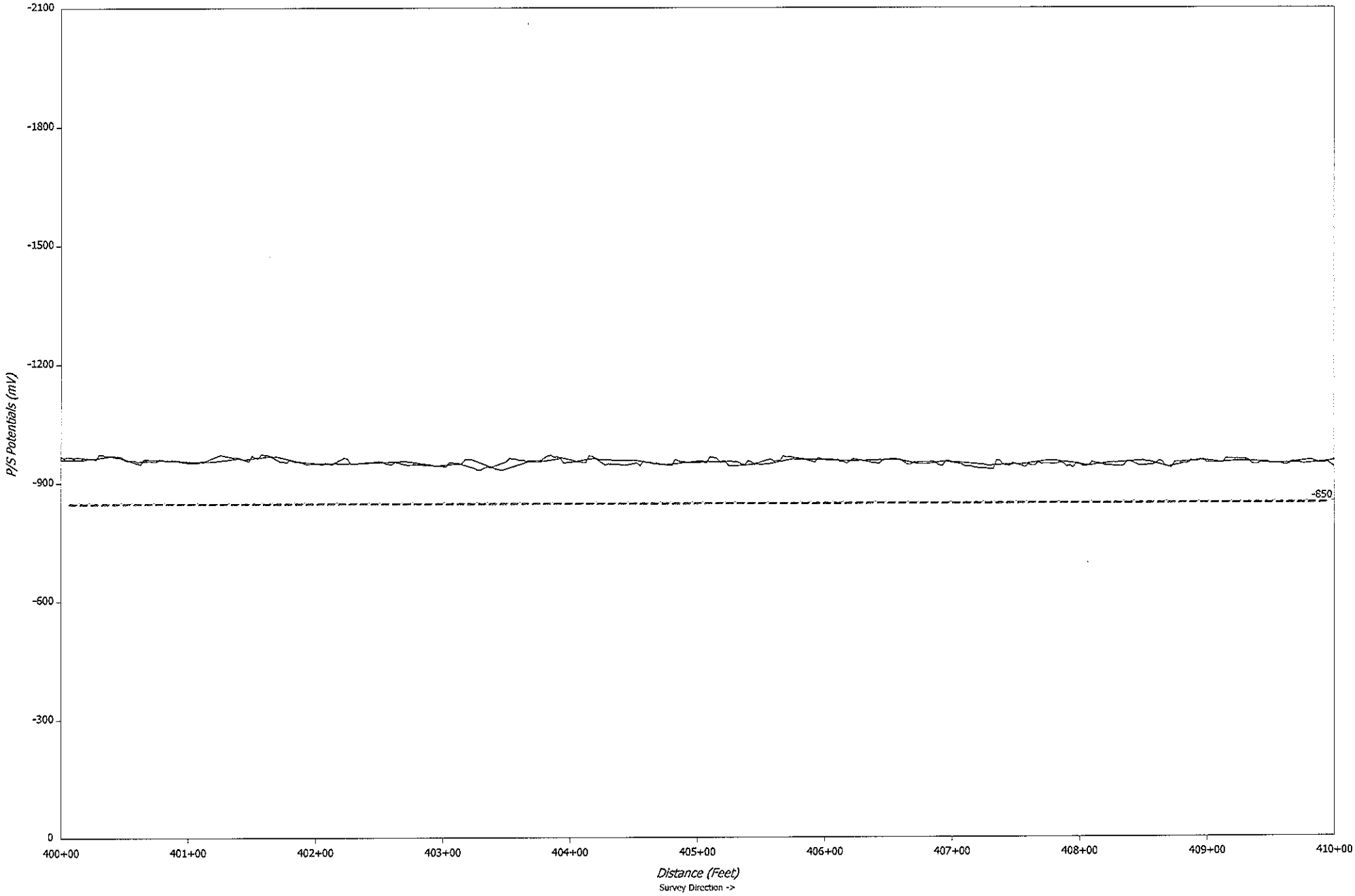
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



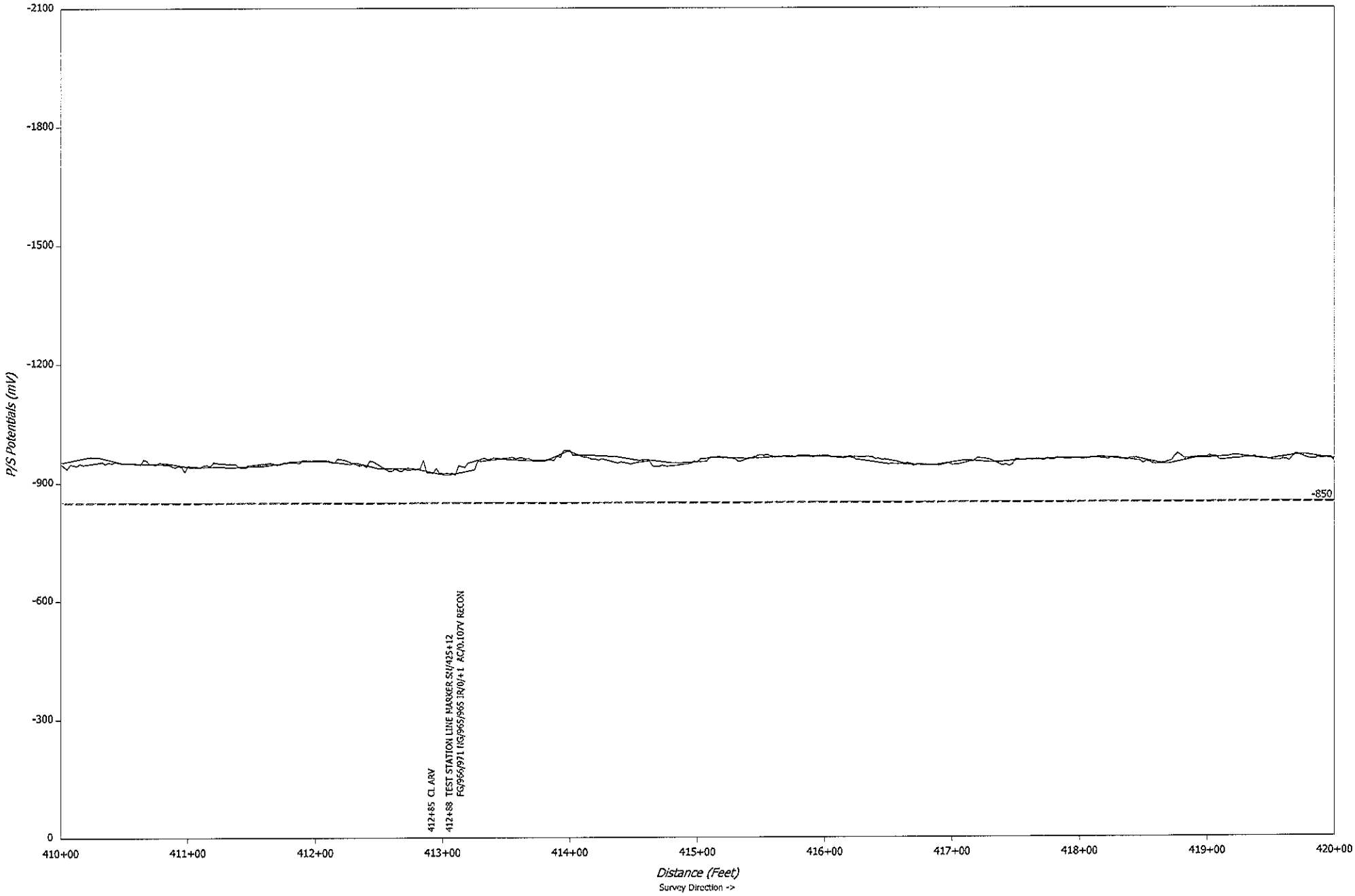
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



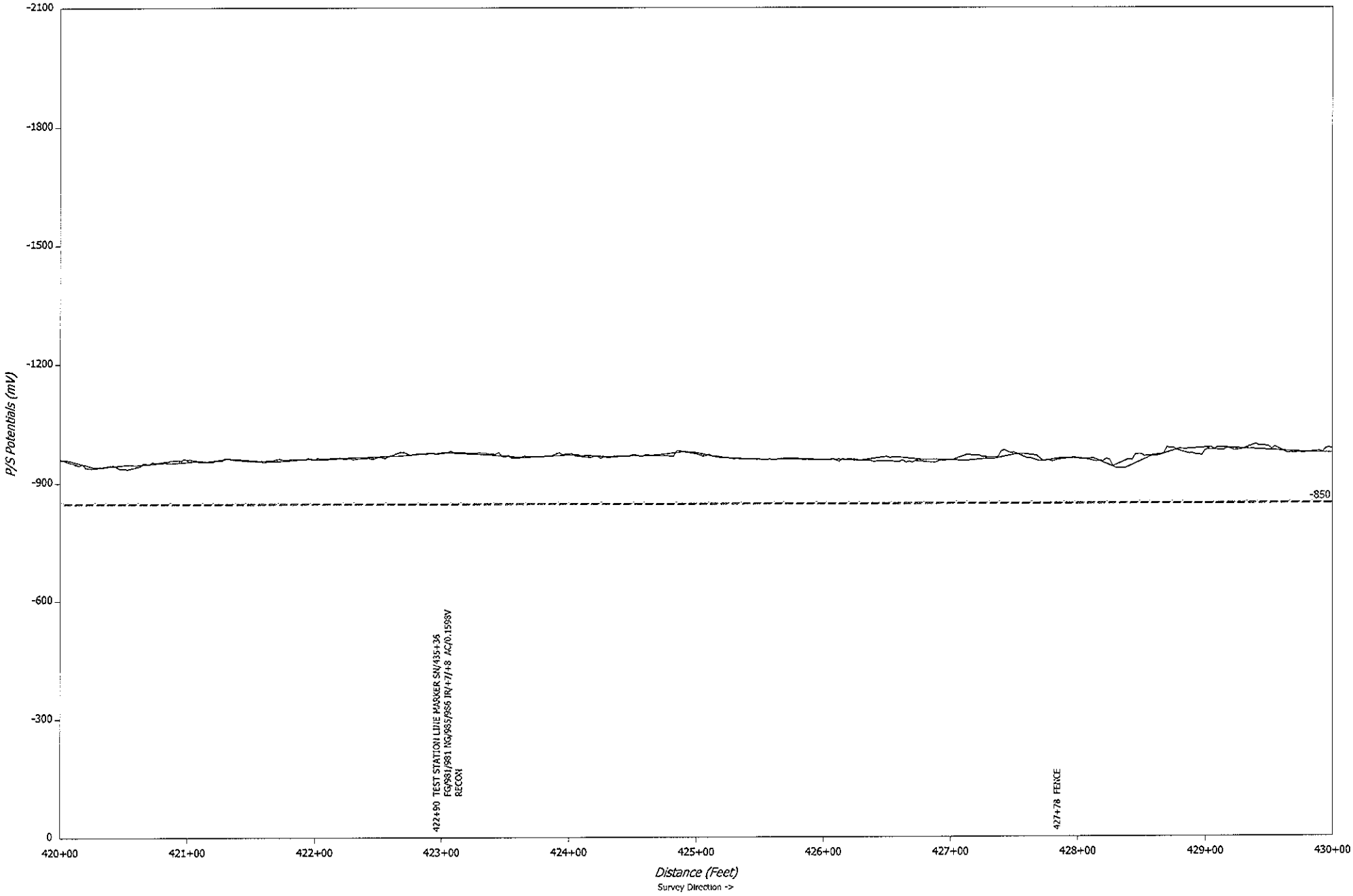
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



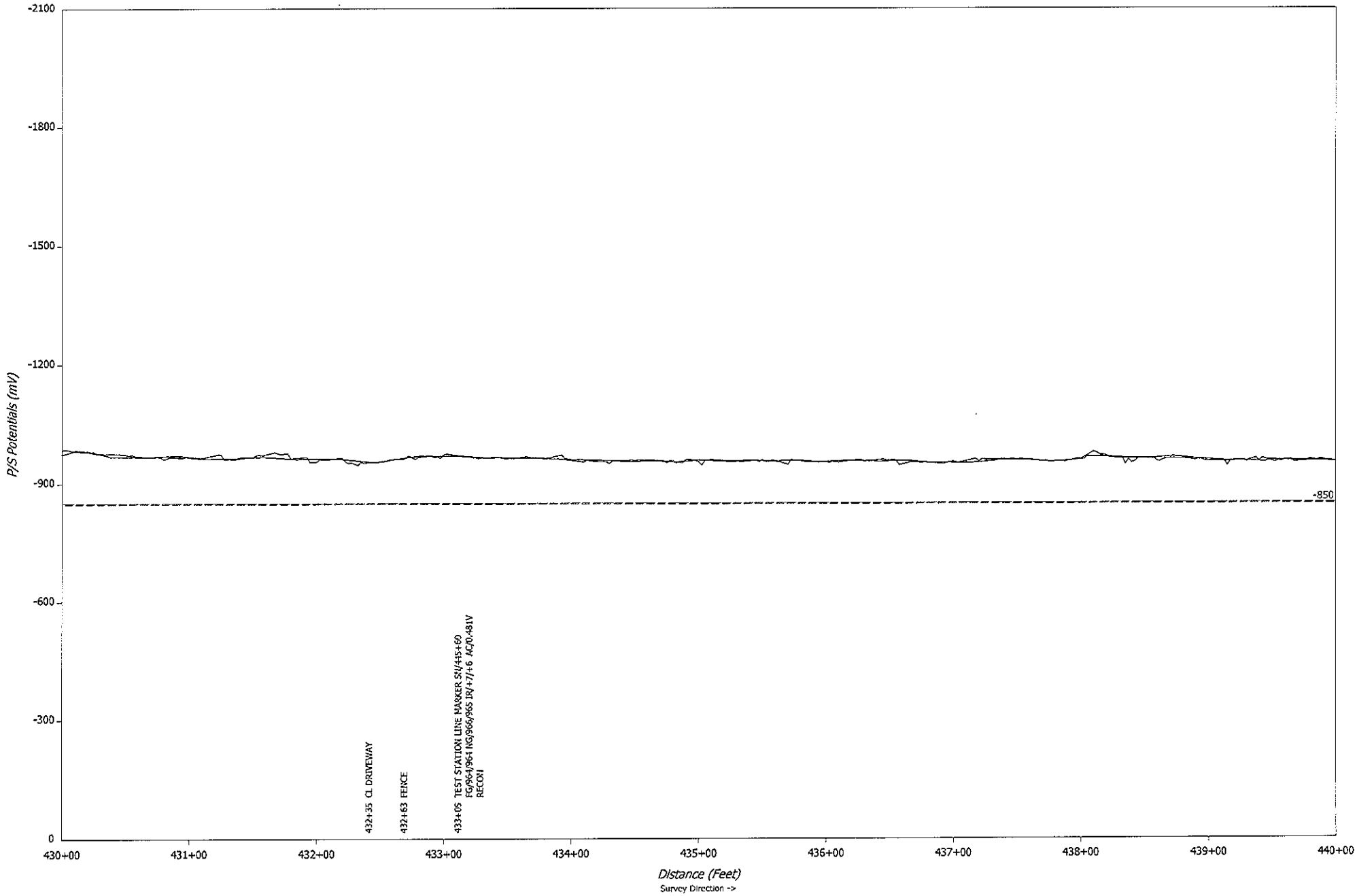
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro



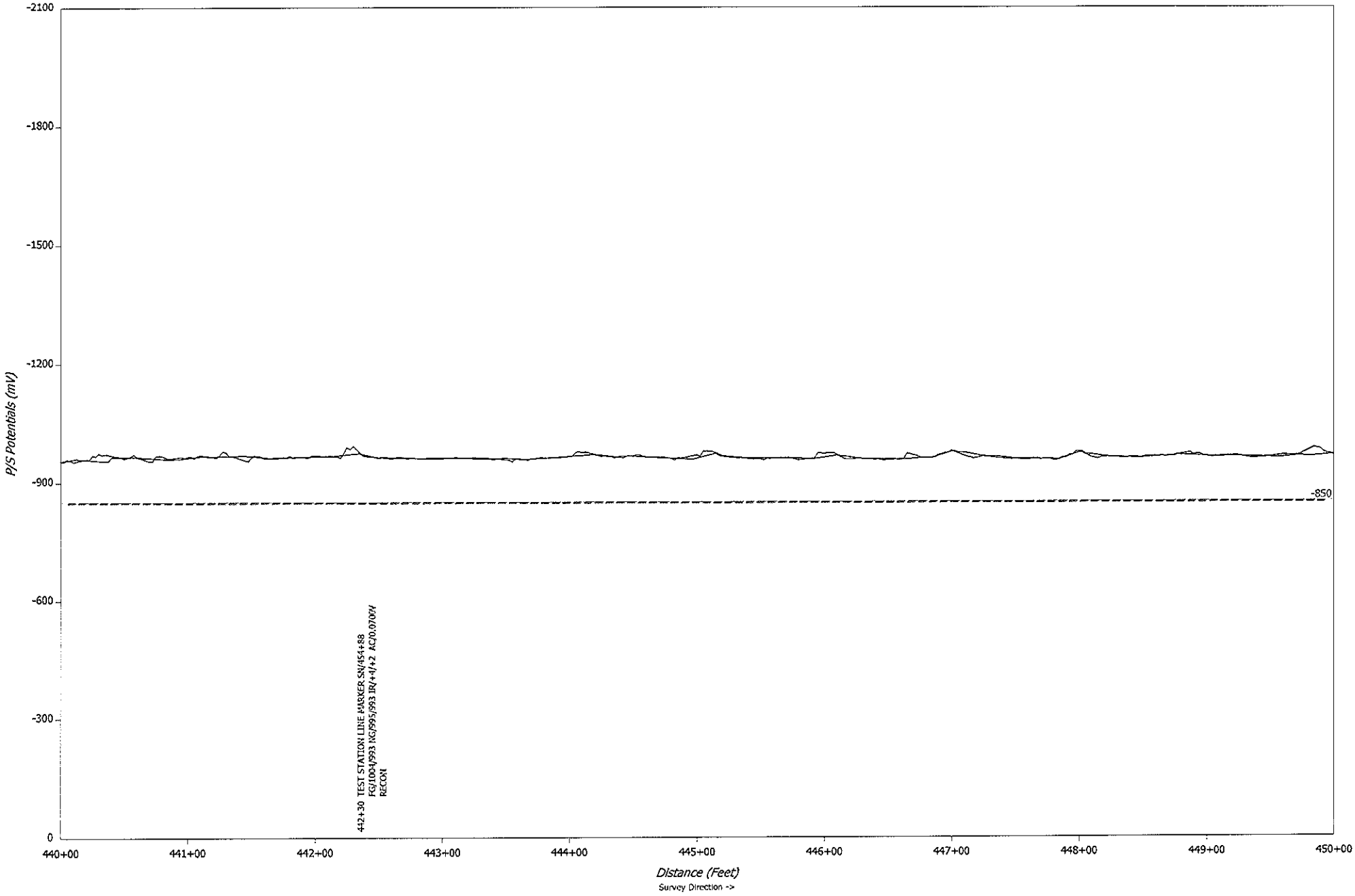
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro



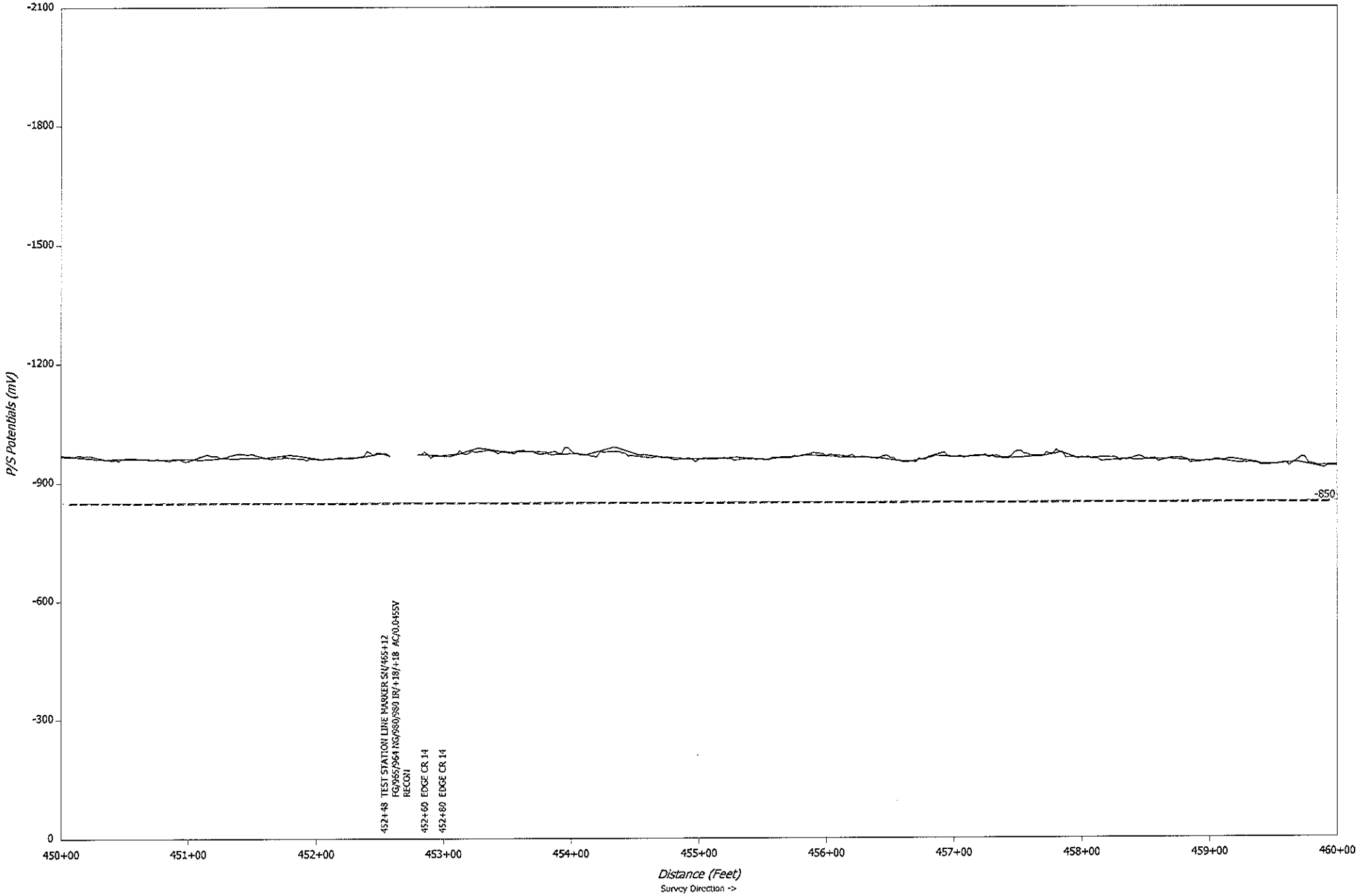
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

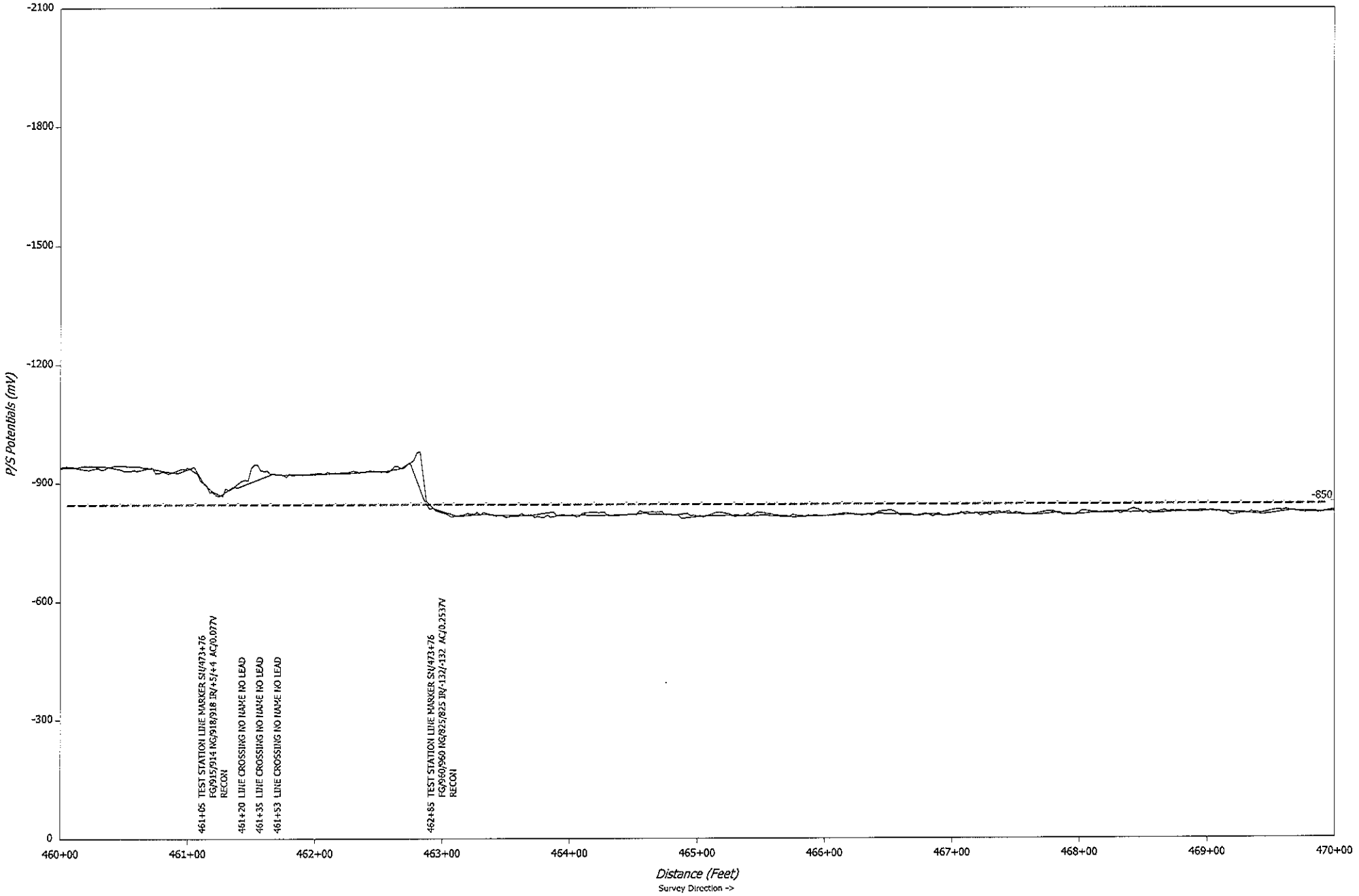
corrpro



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

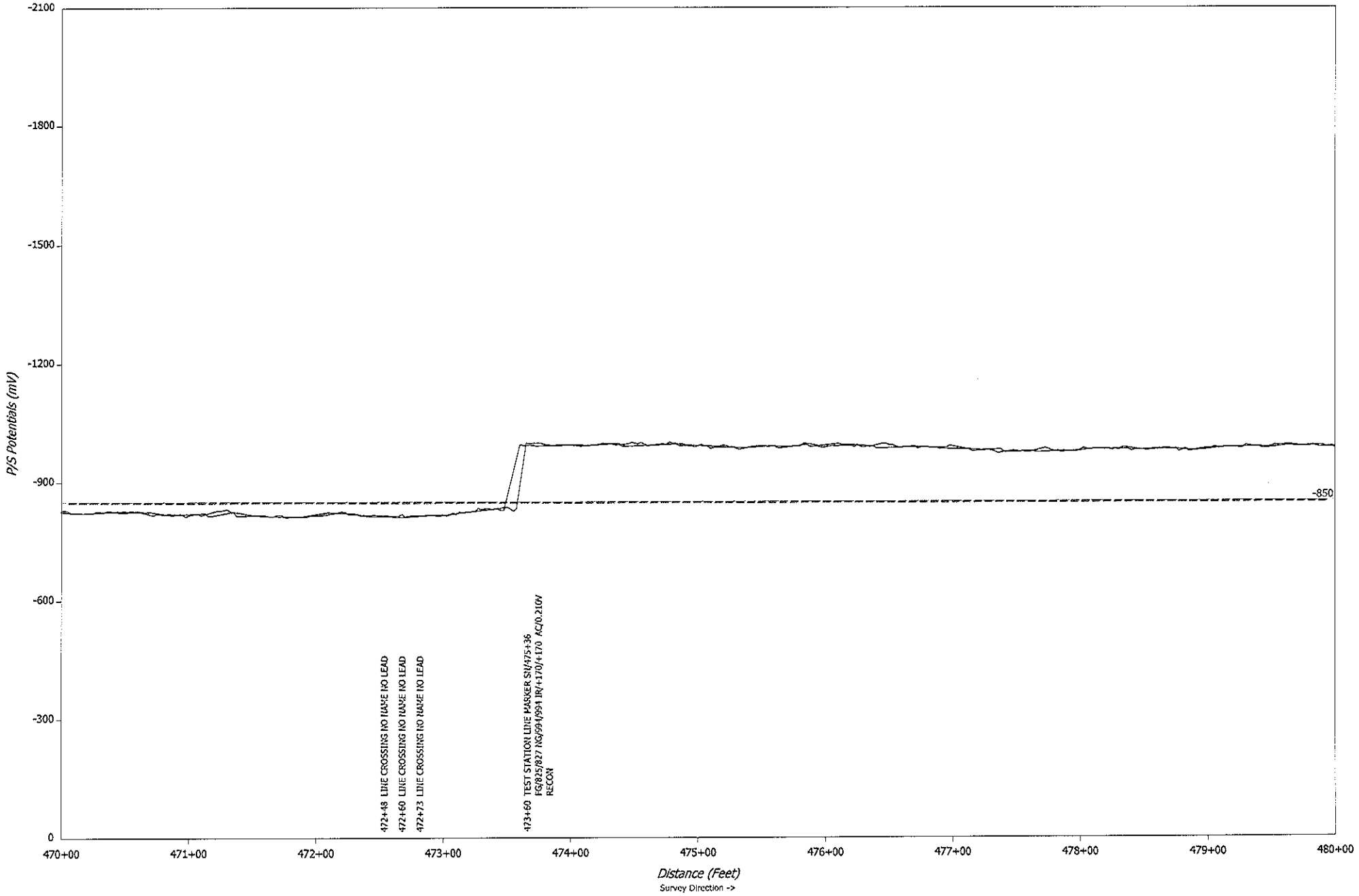
corrpro

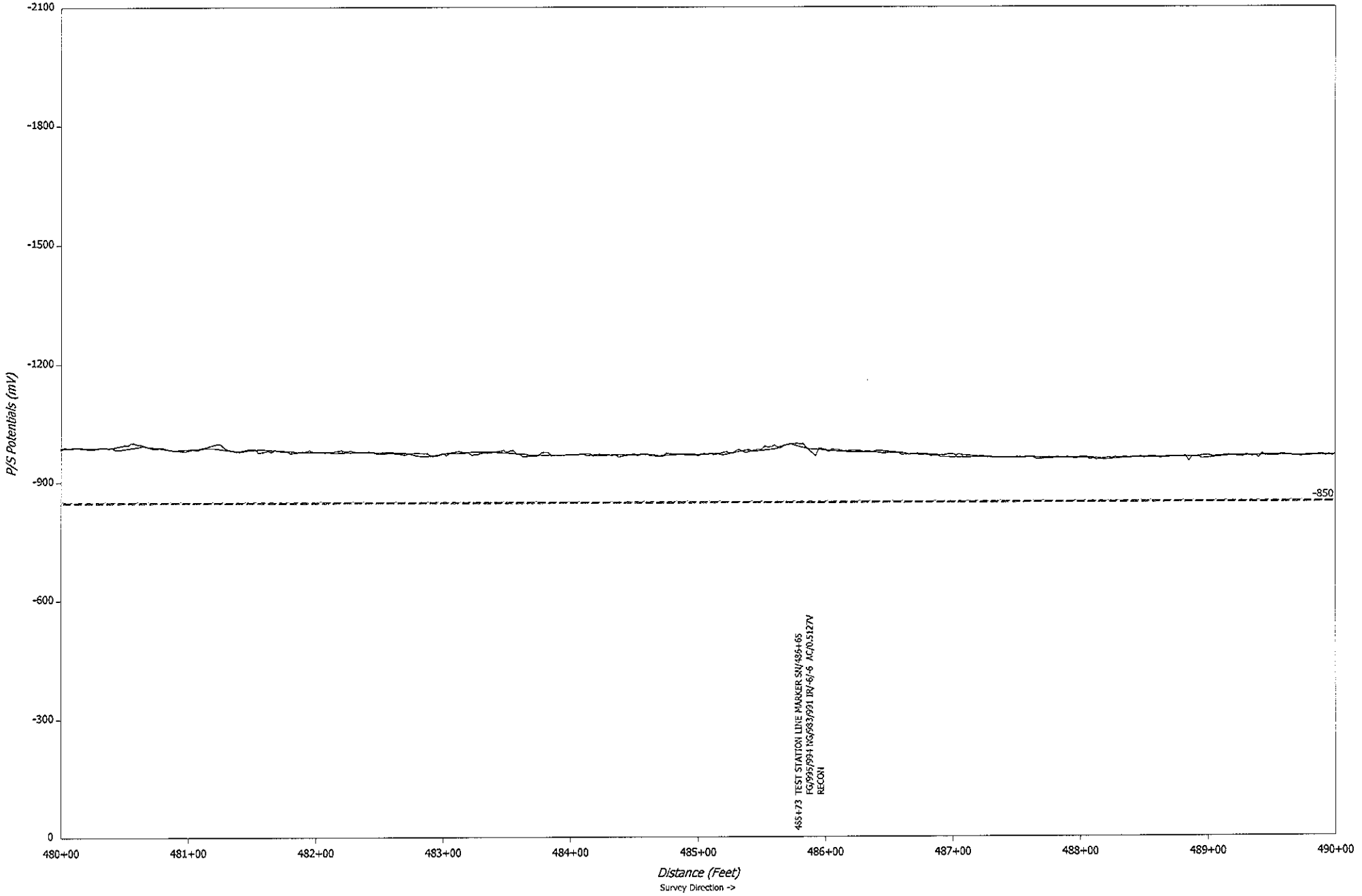

-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
452+48 TEST STATION LINE MARKER SW/465+12
FG/955/964 NS/950/950 DP/+18/+18 AC/0.045SV
RECON
452+60 EDGE CR 14
452+80 EDGE CR 14
450+00
451+00
452+00
453+00
454+00
455+00
456+00
457+00
458+00
459+00
460+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro

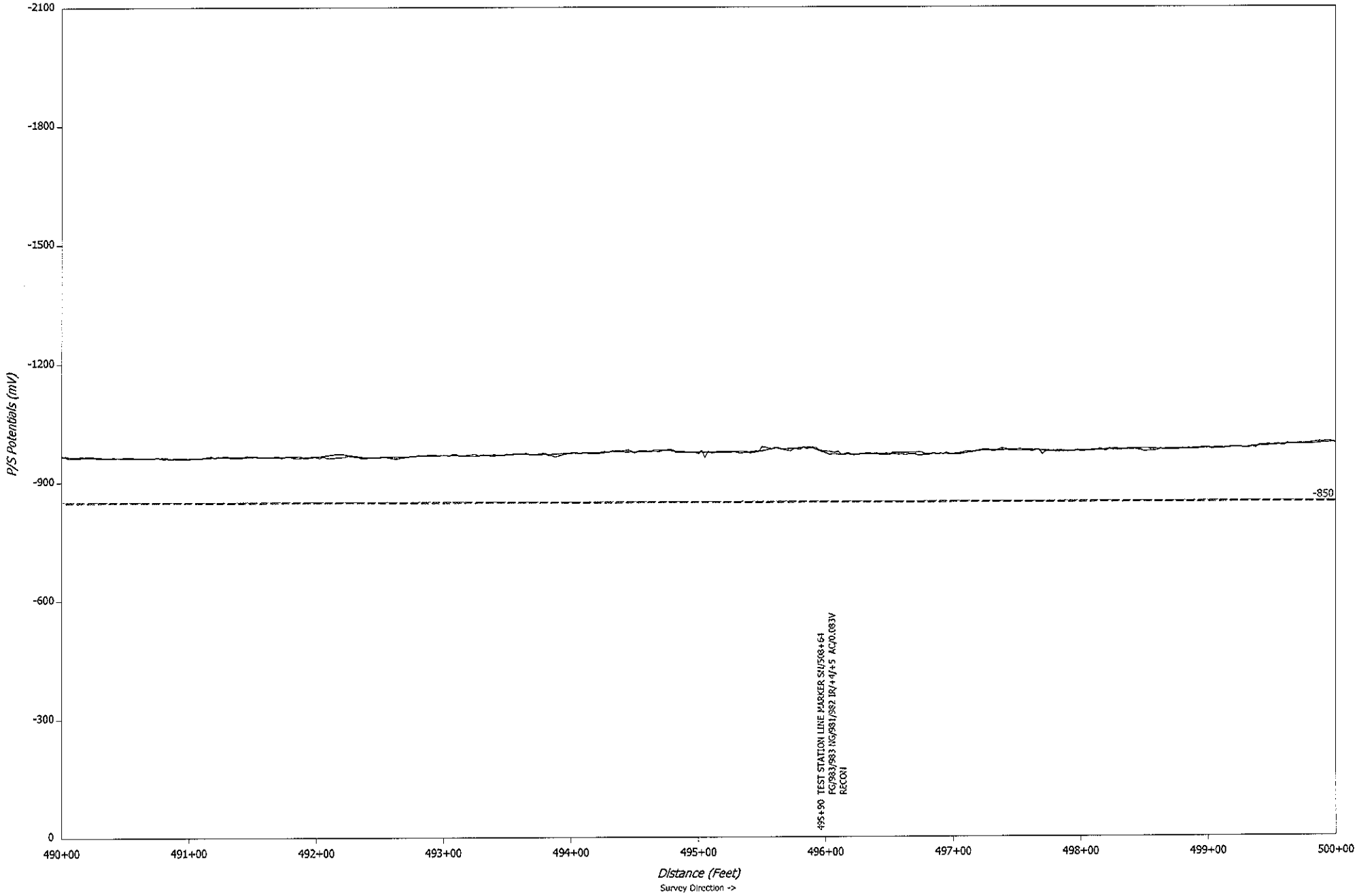


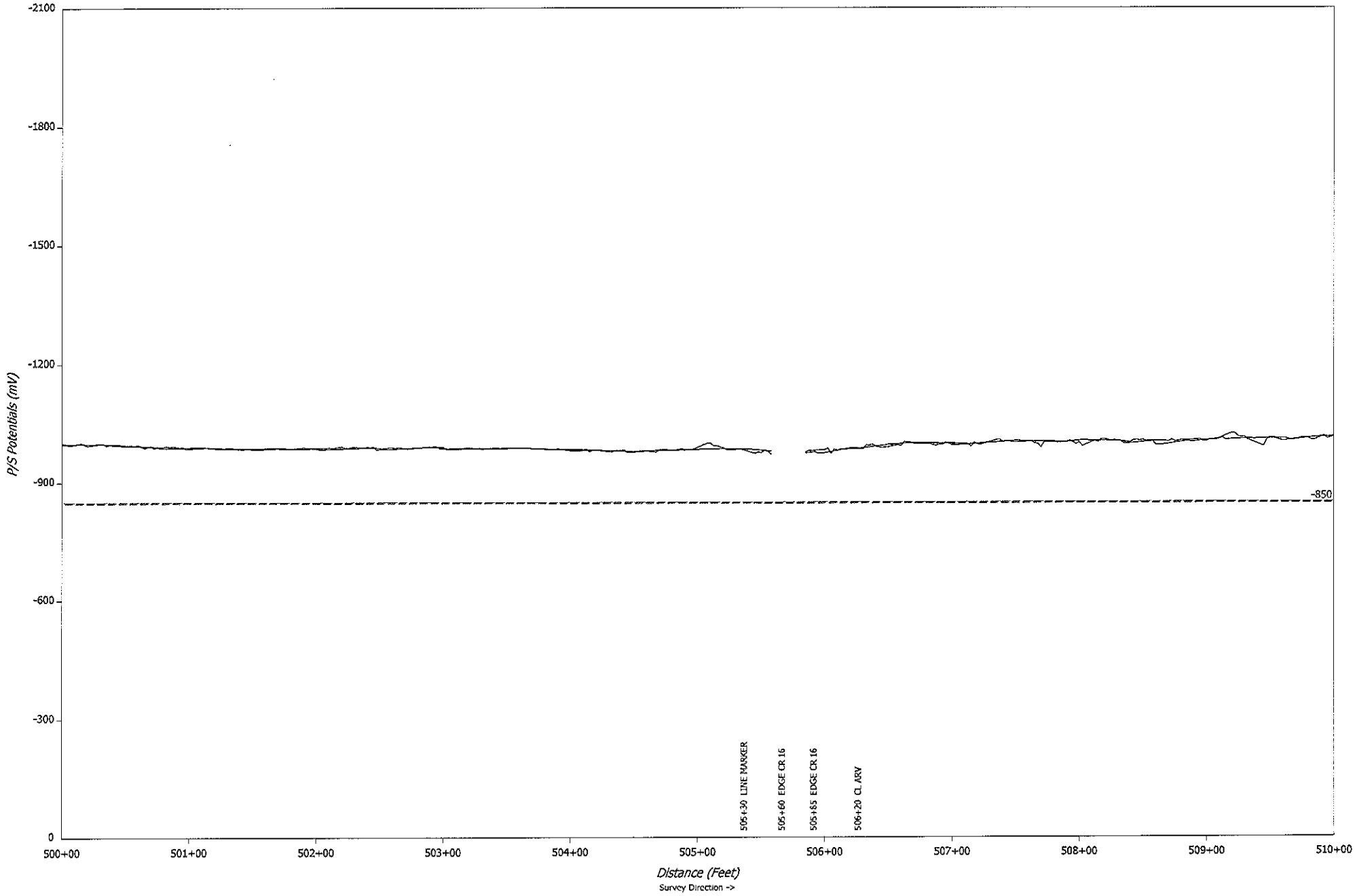
SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY

corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
472+48 LINE CROSSING NO NAME NO LEAD
472+60 LINE CROSSING NO NAME NO LEAD
472+73 LINE CROSSING NO NAME NO LEAD
473+60 TEST STATION LINE MARKER SN/475+36
FG/825/827 NG/994/994 IR/+170/+170 AC/0.210V
RECON
470+00
471+00
472+00
473+00
474+00
475+00
476+00
477+00
478+00
479+00
480+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corpro

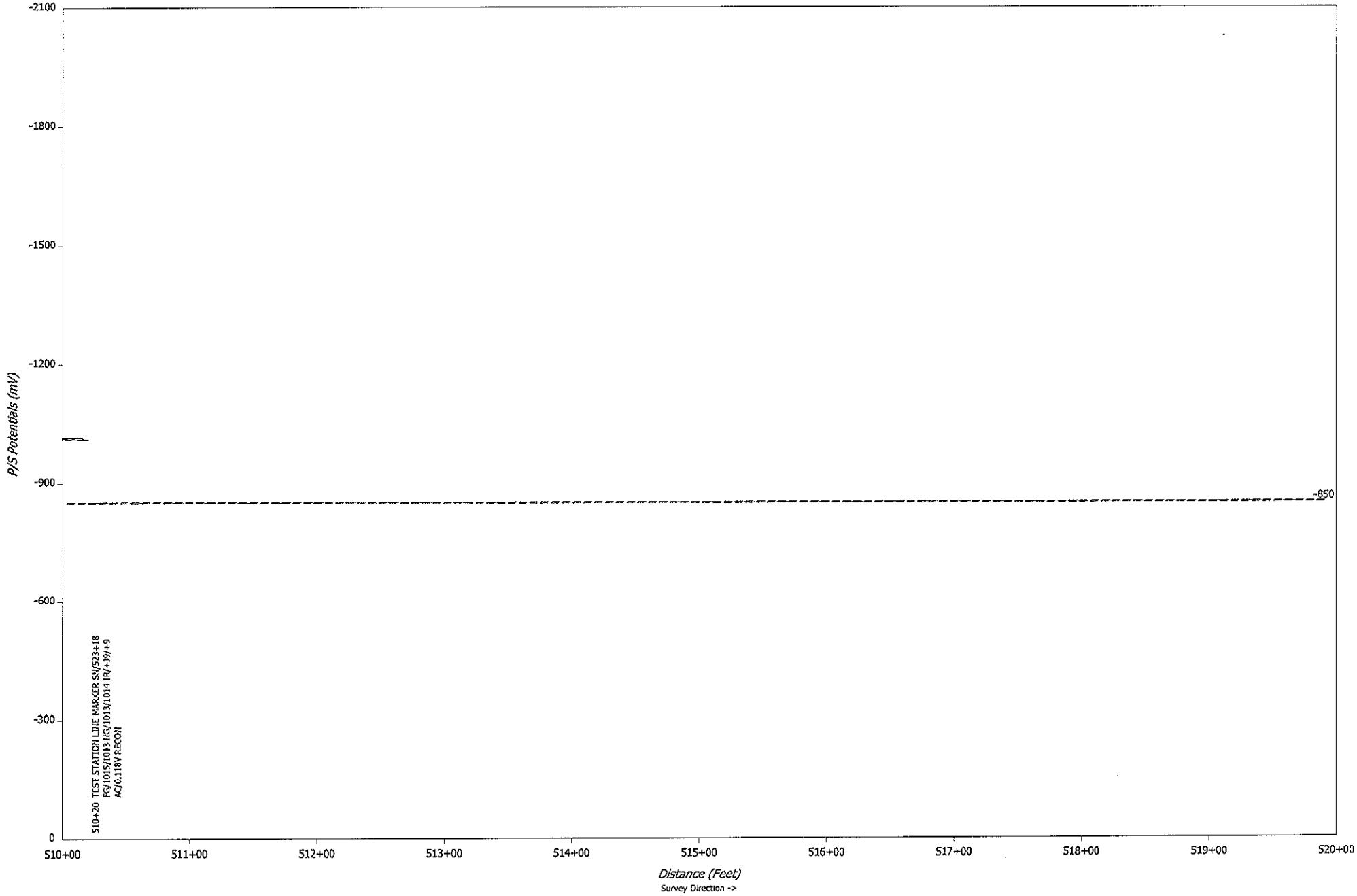

-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
485+73 TEST STATION LINE MARKER SN/486+65
FG/995/9931 NG/683/9931 IR/-6/-6 AC/0.5127V
RECON
480+00
481+00
482+00
483+00
484+00
485+00
486+00
487+00
488+00
489+00
490+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
495+90 TEST STATION LINE MARKER SH/508+64
FG/983/983 NG/981/982 IR/4+4/5 AC/0.083V
RECOH
490+00
491+00
492+00
493+00
494+00
495+00
496+00
497+00
498+00
499+00
500+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro



SOUTH TEXAS WATER AUTHORITY	TWA 42"	CLOSE INTERVAL POTENTIAL SURVEY	Pipe-to-Soil On Pipe-to-Soil Instant Off

corrpro


-2100
-1800
-1500
-1200
-900
-600
-300
0
P/S Potentials (mV)
-850
510+20 TEST STATION LUIE MARKER SN/523+18
FG/1015/1013 HG/1013/1014 IR/+39/+9
AG/0.118V RECON
510+00
511+00
512+00
513+00
514+00
515+00
516+00
517+00
518+00
519+00
520+00
Distance (Feet)
Survey Direction ->
SOUTH TEXAS WATER AUTHORITY
TWA 42"
CLOSE INTERVAL POTENTIAL SURVEY
Pipe-to-Soil On
Pipe-to-Soil Instant Off
corrpro

AEGION corrpro

Stronger. Safer. Infrastructure.

APPENDIX C: RECTIFIER DATA

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South Texas Water Authority
TWA 24"
Riser SN/0+00 to Test Station SN/523+18

Date	Location	DC Output		Tap Settings		GPS Location	
	Description	Voltage (V)	Amps (A)	Coarse	Fine	Latitude	Longitude
2/18/2020	RECTIFIER REC 1	3.7	6.5	C/D	2/6	27.57094193	-97.81662750
2/18/2020	RECTIFIER REC 2	2.9	4.0	B/D	4/6	27.59037095	-97.80081805

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APPENDIX D: TEST STATION DATA

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South Texas Water Authority
TWA 24"
Riser SN/0+00 to Test Station SN/523+18

CIS Footage	Test Point Location Description	Near Ground		Far Ground		Metal IR		Casing Vent		AC	GPS Location	
		ON	Instant OFF	ON	Instant OFF	ON	Instant OFF	ON	Instant OFF	Volts	Latitude	Longitude
0+00	CL RISER SN/0+00	-669	-670	N/A	N/A	N/A	N/A	N/A	N/A	0.1482	27.53936005	-97.84096527
0+23	TEST STATION SN/0+00	-695	-698	-699	-698	1	0	N/A	N/A	0.3336	27.53943597	-97.84095595
15+13	TEST STATION SN/9+92	-681	-679	-660	-661	19	19	N/A	N/A	0.1395	27.54352570	-97.84127045
17+70	TEST STATION SN/17+28	-690	-690	-689	-688	0	0	N/A	N/A	0.3422	27.54425049	-97.84133911
36+03	TEST STATION CASING VENT SN/35+28	-748	-750	-659	-659	89	88	-197	-197	1.9390	27.54925720	-97.84144289
41+68	TEST STATION SN/51+92	-855	-855	-776	-776	80	80	N/A	N/A	0.6573	27.55033493	-97.84036255
49+35	TEST STATION SN/59+60	-849	-848	-844	-845	5	3	N/A	N/A	0.3169	27.55179787	-97.83866119
61+38	TEST STATION SN/71+76	-880	-879	-872	-873	10	9	N/A	N/A	0.1684	27.55406761	-97.83593750
81+78	TEST STATION SN/93+60	-997	-996	-851	-851	147	147	N/A	N/A	0.4120	27.55800629	-97.83136749
95+40	TEST STATION SN/120+77	-992	-991	-984	-984	6	8	N/A	N/A	0.1028	27.56059456	-97.82844543
110+63	TEST STATION SN/135+96	-979	-981	-981	-980	-2	-2	N/A	N/A	0.0890	27.56352425	-97.82501221
123+28	TEST STATION SN/134+00	-1010	-1009	-1002	-1001	5	4	N/A	N/A	0.0561	27.56601143	-97.82221222
131+18	TEST STATION SN/141+60	-1089	-1068	-989	-1000	98	65	N/A	N/A	0.0452	27.56758499	-97.82044220
147+35	TEST STATION SN/159+00	-1267	-1131	-1139	-1093	130	39	N/A	N/A	0.1170	27.57071877	-97.81687927
181+58	TEST STATION SN/193+00	-906	-906	-1267	-1134	-357	-226	N/A	N/A	0.3641	27.57740409	-97.81027531
193+38	TEST STATION SN/204+84	-921	-921	-914	-913	10	11	N/A	N/A	0.1078	27.57966423	-97.80765533
205+33	TEST STATION SN/216+85	-934	-933	-920	-918	21	18	N/A	N/A	0.0377	27.58198738	-97.80510712
218+35	TEST STATION SN/230+04	-935	-930	-932	-930	7	3	N/A	N/A	0.0608	27.58469582	-97.80572510
227+10	TEST STATION SN/238+71	-955	-942	-929	-926	27	15	N/A	N/A	0.0678	27.58697701	-97.80496216
235+35	TEST STATION SN/247+03	-996	-965	-962	-946	34	16	N/A	N/A	0.5684	27.58918190	-97.80421448
252+13	TEST STATION SN/263+10	-1140	-1032	-1038	-994	100	37	N/A	N/A	0.0807	27.59036688	-97.80080758
261+85	TEST STATION SN/272+70	-1057	-1009	-1100	-1013	-25	-1	N/A	N/A	0.1770	27.58959579	-97.79795074
271+63	TEST STATION SN/281+90	-817	-791	-1057	-994	-312	-267	N/A	N/A	0.1670	27.59032249	-97.79545593
283+40	TEST STATION SN/293+88	-967	-956	-940	-892	-50	-12	N/A	N/A	0.3046	27.59273529	-97.79306030
293+05	TEST STATION SN/304+82	-890	-885	-929	-915	-40	-26	N/A	N/A	0.2402	27.59515387	-97.79169178
294+00	TEST STATION SN/305+46	-877	-877	-887	-884	-20	-19	N/A	N/A	0.3141	27.59536934	-97.79160309
301+38	TEST STATION SN/312+82	-882	-883	-879	-878	1	0	N/A	N/A	0.2660	27.59721444	-97.79059932
319+08	TEST STATION SN/330+72	-923	-923	-874	-874	50	50	N/A	N/A	0.0590	27.60157394	-97.78822327
327+63	TEST STATION SN/339+36	-960	-960	-955	-955	7	7	N/A	N/A	0.0446	27.60374129	-97.78709804
336+50	TEST STATION SN/348+32	-978	-978	-961	-961	20	20	N/A	N/A	0.0527	27.60595894	-97.78592682
347+38	TEST STATION SN/359+20	-1015	-1015	-1008	-1007	7	7	N/A	N/A	0.0660	27.60866547	-97.78447723
356+38	TEST STATION SN/368+16	-980	-981	-981	-980	2	2	N/A	N/A	0.0512	27.61088921	-97.78325506
365+53	TEST STATION SN/377+44	-982	-982	-981	-981	4	2	N/A	N/A	0.0548	27.61318398	-97.78203583
374+68	TEST STATION SN/386+72	-981	-981	-984	-982	N/A	N/A	N/A	N/A	0.0669	27.61549033	-97.78079143
383+85	TEST STATION SN/396+00	-978	-978	-978	-979	1	0	N/A	N/A	0.0562	27.61779419	-97.77954867
391+38	TEST STATION SN/403+04	-982	-982	-983	-984	3	0	N/A	N/A	0.0574	27.61969563	-97.77853859
399+25	TEST STATION SN/403+68	-979	-979	-983	-981	-1	0	N/A	N/A	0.0828	27.62168456	-97.77746785
412+88	TEST STATION SN/425+12	-965	-965	-966	-971	0	1	N/A	N/A	0.1070	27.62503265	-97.77566789
422+90	TEST STATION SN/435+36	-985	-986	-981	-981	7	8	N/A	N/A	0.1598	27.62755013	-97.77433014
433+05	TEST STATION SN/445+60	-966	-965	-964	-964	7	6	N/A	N/A	0.4810	27.63007355	-97.77294922

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South Texas Water Authority
TWA 24"
Riser SN/0+00 to Test Station SN/523+18

CIS Footage	Test Point Location Description	Near Ground		Far Ground		Metal IR		Casing Vent		AC	GPS Location	
		ON	Instant OFF	ON	Instant OFF	ON	Instant OFF	ON	Instant OFF	Volts	Latitude	Longitude
442+30	TEST STATION SN/454+88	-995	-993	-1004	-993	4	2	N/A	N/A	0.0700	27.63237393	-97.77172602
452+48	TEST STATION SN/465+12	-980	-980	-965	-964	18	18	N/A	N/A	0.0455	27.63495255	-97.77037811
461+05	TEST STATION SN/473+76	-918	-918	-915	-914	5	4	N/A	N/A	0.0770	27.63706797	-97.76923885
462+85	TEST STATION SN/473+76	-825	-825	-960	-960	-132	-132	N/A	N/A	0.2537	27.63754082	-97.76895905
473+60	TEST STATION SN/475+36	-994	-994	-825	-827	170	170	N/A	N/A	0.2100	27.64022636	-97.76752116
485+73	TEST STATION SN/486+65	-983	-991	-995	-994	-6	-6	N/A	N/A	0.5127	27.64324285	-97.76588998
495+90	TEST STATION SN/508+64	-981	-982	-983	-983	4	5	N/A	N/A	0.0830	27.64577866	-97.76451111
510+20	TEST STATION SN/523+18	-1013	-1014	-1015	-1013	N/A	N/A	N/A	N/A	0.1180	27.64929008	-97.76259613

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APPENDIX E: CLOSE INTERVAL SURVEY PROCEDURE AND EQUIPMENT SPECIFICATIONS

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corrpro		Department:
		Operations
Document Title:		Document Number:
Close Interval Potential Survey		WI FLD 035

Scope: To describe the actions necessary to conduct a close interval potential survey.

Purpose: The purpose of this work instruction is to set forth the proper steps necessary to conduct a close interval potential survey.

Responsibility: It is the responsibility of the Operations Manager to ensure any one going out to perform this task is properly trained.

Associated Documentation:

Process:

1.0 Purpose

1. General: Close interval, pipe-to-soil and potential gradient surveys are applicable to all buried pipelines with earthen cover. Where the pipeline is under concrete or asphalt pavement, holes must be drilled to facilitate reference cell contact with the underlying fill. This often makes these types of surveys impractical in paved areas.

2. Cathodic Protection Criteria: Close interval surveys allow assessment of cathodic protection system performance and operation in accordance with established criteria for cathodic protection. With reference cell placement at 2.5-foot intervals, a nearly continuous evaluation is possible, unlike test- points- only surveys, which simply sample locations along the pipeline route.

3. Coating Faults: IR drop in close interval pipe-to-soil potential surveys of cathodically protected pipelines with the current ON aids is detecting locations of protective coating faults. The IR drop component in the potential measurement is reduced when in close proximity to the coating fault, thereby reducing the absolute value of the potential. Voltage gradient measurements (DCVG) are also used to detect coating faults. An increase in magnitude of the voltage gradient with cathodic protective current applied, is associated with increased current flow to relatively poorly coated areas.

4. Other Anomalies: Close interval pipe-to-soil potential surveys also aid in identifying other anomalies including:
    - interference conditions
    - shorted casings
    - areas of electrical or geologic current shielding
    - contact with other metallic structures
    - defective electrical isolation joints
    - localized corrosion

2.0 Methodology

1. General: Over-the-line pipe-to-soil potential surveys are conducted to evaluate the performance of the corrosion mitigation system.

2. Intervals: Pipe-to-soil readings shall be taken at 2.5 feet intervals and correlated to station numbers for the pipeline.

3. Wire: Each pipeline section shall be surveyed by utilizing an insulated copper wire that is electrically connected to a test station.

4. Locating the Pipeline:

    a) The pipeline shall be located with an inductive pipe locator prior to collecting the data to ensure that the reference electrode is placed directly over the line.

    b) Marsh and water crossings, which cannot be walked, will typically be located by the line of sight method, using pipeline markers and/or pipeline appurtenances. Magnetometers may also be employed for greater accuracy.

5. Data Recording: Potential measurements shall be recorded as a function of distance.

6. Wire Deployment: To eliminate problems with static charge build-up on the insulation, the wire shall not be pulled along the pipeline right-of-way but shall be laid out as the crew advances.

7. Footage Counter: The wire shall be fed through an accurate distance-measuring device with the actual footage recorded on the graphic data display.

8. Pipe Access Points: Potential measurements shall be taken at each test station, rectifier, highway casing, railroad casing, and foreign pipeline crossings.

9. IR Drop Measurements: Near ground and far ground "IR" drop measurements shall be recorded at each point of pipeline connection.

10. Accuracy: Potentials shall be measured to an accuracy of +/- 5 millivolts and correlated to landmarks such as roads, casing vents, fences, and streams.

11. Landmarks: All permanent landmarks shall be identified and listed along with their appropriate survey station numbers. All survey station numbers shall be easily converted to the permanent pipeline station numbers.

3.0 Equipment

1. General: Data shall be gathered utilizing an electronics package consisting of a computer, a high input impedance digital voltmeter, a solid state memory, a keyboard, and a liquid crystal display (LCD).

2. Data Collector: The data logger shall be built for field use. It shall have an input impedance of 100 to 200 megohms with an accuracy of 0.1% of full scale over the operating temperature range (-4 to 122 degrees F). The enclosure shall be sealed to protect against moisture and dust. The unit shall meet NEMA 4X requirements and shall be rated to operate in 100% humidity. Quantities Required: 2 data loggers, 2 internal GPS-AI, 2 batteries, 1 dump cable.

3. Laptop with Survey Software & Hot Spot: The computer controls the operation of each of the related devices with the commands, which the computer must execute, stored in memory. The computer counts the pulses coming from the magnetic switch in the footage counter and when the proper number of pulses has occurred (20 for a 2.5 foot interval survey), the reading of the digital voltmeter is displayed on the LCD and stored in memory. The LCD provides the operator with a visual indication of the potentials being recorded.

4. Footage Counter: The footage counter shall be mounted on a holster type wire dispensing apparatus. The counter shall be an electronic wire measuring device with magnetic sensing and a LCD display, resettable with adjustment in one half-foot increments from 0 to 19,999 feet. The maximum variation between the distance displayed and the wire dispensed shall be plus or minus five feet per mile (less than 0.1%). A lock mode shall be incorporated in the system to go around obstacles in the survey path. In this mode no footage or potentials shall be stored to minimize scale error. The length of the wire dispensed while in the lock mode shall be displayed on the screen. Quantities Required: 3 counters, 2 chains or cables.

5. Wire: Onshore survey wire should be No. 34 AWG copper conductor with lacquer insulation. Dispensing spools should be plastic and contain approximately 3 miles of wire each. Length of wire varies and is dependent on the mileage.

6. Current Interrupters: One of two types of current interrupters shall be used for ON/OFF Potential Surveys.

    a) GPS Synchronized: The GPS units shall be 60 or 100-ampere capacity AC/DC, 115 VAC or DC battery powered unit with GPS synchronization. GPS synchronization shall have an accuracy of 5 milliseconds. All timing cycles shall be keyboard programmable. The unit shall be enclosed in a rugged and waterproof NEMA-4 case. Required quantity is based on the number of current sources.

7. Reference Electrodes: Industry standard copper/copper sulfate with ceramic plugs shall be used. Clear windows on cells shall be covered to avoid photoelectric effects. Copper sulfate solution and tips shall be regularly cleaned and maintained. All cells shall be tested daily for accuracy to ± 3 mV, and add this test data into the data file (use Code 31 = Half Cell Check, and type in left and right reference cell readings into the data stream). Refer to NACE Standard TM0497 (latest revision) entitled "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems." Quantities Required: 4 reference electrodes, 6 tips, 1 bottle copper sulfate.

8. DGPS Unit: Quantities Required: 2 DGPS units, 2 batteries, 2 antennas, 4 antenna cables.

9. Miscellaneous Equipment (required quantities are in parenthesis):
   Line Locator with transmitter (2)
   Multimeter with Leads (1)
   Amp Clamp (1)
   500W Power Invertor (1)

4.0 Procedures

There are various types of close interval, pipe-to-soil potential surveys including: ON/OFF surveys, potential gradient (DCVG) surveys, depolarized potential surveys and ON potential surveys.

4.1 ON/OFF Potential Survey

1. This survey is applicable to pipelines protected with impressed current cathodic protection systems for detecting external pipeline anomalies and evaluating corrosion protection performance in accordance with cathodic protection criteria.

2. ON/OFF Potential Surveys are performed by electronically synchronizing current interrupters and placing in each rectifier, bond and other current drain point that influences the pipeline potential in the survey area. Standard interrupter cycles are 8 seconds ON, 2 seconds OFF; or 800 milliseconds ON, 200 milliseconds OFF.

3. Reference cells are placed directly over the pipeline at 2.5 foot intervals. The maximum distance between OFF readings is not to exceed twenty (20) feet.

4. ON and OFF potentials are recorded with a handheld computer programmed with ON/OFF Potential Survey software.

5. The accuracy of the data shall be verified using one of the following techniques:

   - Wave form capture and analysis
   - Digital oscilloscope
   - Digitized signal equipment

6. Digitally stored, pipe-to-soil potential wave prints shall be recorded at an aboveground test station twice daily. The wave print location shall be documented to correlate with the survey data. This data will be used to determine the presence of potential sources of error from:

   - Line current flow
   - Scale accuracy
   - Potential spiking
   - Interrupter synchronization drift
   - Stray DC earth currents
   - Voltage signal noise

4.2 CIS with DCVG Survey

1. This survey is applicable to well coated pipelines to detect coating holidays. It is best performed in conjunction with an ON/OFF Survey.

2. DCVG Surveys are performed using three reference cells placed over the pipeline and to each side. Cell separation of ten (10) feet is desirable provided that right-of-way conditions permit.

3. DCVG measurements consist of two earth potential gradient measurements, one between the cell over the line and the cell to one side; and the second between the cell over the line and the cell to the other side. The survey progresses along the pipeline alignment with all three cell measurements recorded every 2.5 feet.

4. DCVG data is recorded with a handheld computer programmed with DCVG Survey software. This allows the data to be plotted and provides a permanent record.

4.3 Depolarized Potential Survey

1. This survey technique is applicable to poorly coated pipelines protected with impressed current cathodic protection systems where the 100 mV polarization decay criterion is to be employed for evaluating the effectiveness of the cathodic protection system. It must be performed in conjunction with an ON/OFF Potential Survey.

2. De-energize all impressed current transformer-rectifiers and other DC power supplies. Either break critical bonds or adjust to only overcome interference effects while not providing additional cathodic protection.

3. Let the pipeline depolarize for five (5) days or until such time as a plot of potential vs. time indicates that the pipe-to-soil potential is no longer decaying.

4. Reference cells are placed over the pipeline every 2.5 feet.

5. Depolarized potentials are recorded with a handheld computer programmed with Depolarized Potential Survey software. This allows the data to be plotted in conjunction with an ON/OFF Potential Survey data for calculation of the polarization shift.

4.4 ON Potential Survey

1. This survey technique is applicable to pipelines protected with sacrificial anodes or other cathodic protection current sources that cannot be interrupted.

2. Reference electrodes are placed over the pipeline every 2.5 feet.

3. ON potentials are recorded with a handheld computer programmed with ON Potential Survey software.

5.0 Data and Reporting

1. Data Files: Must be submitted daily with the list (.lst) file(s) and production summary. The production summary must include: date, company name, diameter of pipe, starting station number, ending station number, and any discrepancies. Valid DGPS data must be recorded at every reading. The file name shall be in the following format:
   Job Segment Number-Operator Initials_Date_Valve Section
   Example: 100-HCN_11 MAY_00
   Note: For single lines, the job segment number starts with 100 and grows sequentially, and for multiple lines, the job segment number continues at 200, 300, 400, etc.

2. Field Plots: Field plots of the data collected shall be generated by the survey crew during the course of the survey. This must be done.

3. Final Plots: Both ON and OFF potentials shall be plotted and easily distinguished one from the other. On bare lines requiring an impressed current OFF survey, the depolarized potentials shall be plotted and easily distinguished from the ON and OFF readings. DCVG data will be distinguishable from potential data and will be plotted to a right hand scale on the graph.

4. Features: The stationing and identification of all features shall be listed at the bottom of the graph, at the point on the graph at which they occur. No abbreviations are allowed; use Codes only and identify all road names.

5. Continuity Test Data: Remote and local potential readings recorded at test stations as Far Ground – "FG/", Near Ground – "NG/", Casing to Soil – "CS/", Pipe to Soil – "PS/", respectively, shall be listed in the comment field. IR Drop Readings: IR drop readings shall be listed in the comment field as "IR" with magnitude and polarity. This data must be at all reconnect points.
   Example for an ON/OFF: SN*52+80 FG/1089/950 NG/1080/950 IR-9/0

6. Rectifier Data: The rectifier DC outputs "as found" and "as adjusted" shall be tabulated for each rectifier surveyed. This data must be part of the data file once it is known that the area has been interrupted. When rectifiers are all in place, the list of rectifiers and the readings must be submitted.

If you are unsure of the test work instruction contact your supervisor immediately.

Records Generated:

Revision History:

Date	Rev #	Changed By	Description	Approver
10/22/12	0	Todd Brabson	Initial issue of document.	Todd Brabson
11MAY2016	1	Kaizen Team	Updated to current header. Updated equipment list with required quantities. Updated Data & Reporting requirements.	Chris Dauzat, Scott James

ATTACHMENT 17

Annexation Petition
Santos Ramirez, Jr.

Memorandum

To: South Texas Water Authority Board of Directors
From: Carola G. Serrato, Executive Director
Date: April 20, 2020
Re: Annexation Petitions – Final Approval – Annexation Petition for Santos Ramirez Jr. – Cyndie Park Unit 1, Lots 11 and 12

Background:

As the Board is aware, the Nueces County Grant Administration office acquired funds to address water quality problems for the Cyndie Park and The Ranch subdivisions. Since those subdivisions are not within South Texas Water Authority's district boundaries, the property owner requests retail water service from the NWSC and annexation into STWA's district. This results in the new NWSC member paying the same costs (NWSC retail water bill and STWA property taxes) as all other NWSC customers.

Analysis:

During the last Board meeting, Resolution 20-12 was approved calling for the required public hearing on the annexation petition filed by Mr. Santos Ramirez, Jr., Cyndie Park 1, Lots 11 and 12. A public hearing is scheduled for immediately preceding the regular Board meeting. Staff does not anticipate any public comment during the meeting since the annexation is for Mr. Ramirez's property only and he has filed the request. In order to complete the process, the Board will need to approve/adopt Resolution 20-13.

Staff Recommendation:

Adopt Resolution 20-13.

Board Action:

Determine whether to adopt Resolution 20-13.

Summarization:

Last month, staff reported that this property was in foreclosure when the other annexations were being processed. The seller was able to repossess the property resulting in this new request for service.

ATTACHMENT 18

Resolution 20-13

CERTIFICATE FOR
RESOLUTION APPROVING ANNEXATION

THE STATE OF TEXAS §
COUNTIES OF KLEBERG AND NUECES §
SOUTH TEXAS WATER AUTHORITY §

We, the undersigned officers of the Board of Directors of said Authority, hereby certify as follows:

1. The Board of Directors of said Authority convened in REGULAR MEETING ON THE 28TH DAY OF APRIL, 2020, at the regular designated meeting place, and the roll was called of the duly constituted officers and members of said Board, to-wit:

Kathleen Lowman, President
Brandon W. Barrera, Vice-President
Rudy Galvan, Jr., Secretary/Treasurer
Jose M. Graveley
Lupita Perez
Patsy A. Rodgers
Filiberto Treviño, III

and all of said persons were present, except the following absentees: _____ thus constituting a quorum. Whereupon, among other business the following was transacted at said Meeting: a written

RESOLUTION APPROVING ANNEXATION

was duly introduced for the consideration of said Board and read in full. It was then moved and seconded that said Resolution be passed; and, after due discussion, said motion, carrying with it the passage of said Resolution, prevailed and carried by the following vote:

AYES: _____.

NOES: _____.

2. That a true, full, and correct copy of the aforesaid Resolution passed at the Meeting described in the above and foregoing paragraph is attached to and follows this Certificate; that said Resolution has been duly recorded in said Board's minutes of said Meeting; that the above and foregoing paragraph is a true, full, and correct excerpt from said Board's minutes of said Meeting pertaining to the passage of said Resolution; that the persons named in the above and foregoing paragraph are the duly chosen, qualified, and acting officers and members of said Board as indicated therein; that each of the officers and members of said Board was duly and sufficiently notified officially and personally, in advance, of the time, place, and purpose of the aforesaid Meeting, and that said Resolution would be introduced and considered for passage at said Meeting, and each of said officers and members consented, in advance, to the holding of said Meeting for such purpose; and the said Meeting was open to the public, and public notice of the time, place, and purpose of said Meeting was given all as required by

Chapter 551, Texas Government Code.

SIGNED AND SEALED the 28th day April, 2020.

Rudy Galvan, Jr., Secretary
Board of Directors

Kathleen Lowman, President
Board of Directors

SOUTH TEXAS WATER AUTHORITY

Resolution 20-13

THE STATE OF TEXAS	§
COUNTIES OF KLEBERG AND NUECES	§
SOUTH TEXAS WATER AUTHORITY	§

WHEREAS, the Board of Directors conducted a hearing on this date in reference to the annexation of the territory described in Exhibit A attached hereto; and

WHEREAS, it was deemed advisable by the Board to approve the annexation of such territory to the Authority; and

WHEREAS, it is officially found and determined: that a case of emergency or urgent public necessity exists which required the holding of the meeting at which this Resolution was adopted and that said meeting was open to the public, and public notice of the time, place and purpose of said meeting was given, all as required by Chapter 551, Texas Government Code.

THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF SOUTH TEXAS WATER AUTHORITY:

1. That the annexation of the territory described in Exhibit A is hereby approved by this Board, and it is hereby found that there will be benefit to the territory as amended.

2. That pursuant to Article 7, Chapter 436, Acts of the 66th Legislature, Regular Session, 1979, no election is required to approve the annexation as the petition was signed by all residents and landowners of the annexed territory.

PETITION FOR ADDITION OF CERTAIN LANDS TO
THE SOUTH TEXAS WATER AUTHORITY

STATE OF TEXAS :
COUNTY OF NUECES :

TO THE BOARD OF DIRECTORS OF THE SOUTH TEXAS WATER AUTHORITY:

The undersigned (herein called "Petitioner"), holder of title to the territory described by metes and bounds in Exhibit "A" which is attached hereto and incorporated herein for all purposes, being all of the residents and landowners of such territory, as shown by the tax rolls of Nueces County, Texas, and acting pursuant to the provisions of Section 11006.052, Special District Local Laws Code, respectfully petitions the Board of Directors of South Texas Water Authority that the territory described by metes and bounds in Exhibit "A" be added to and become a part of the established South Texas Water Authority, and in support of this petition would show as follows:

I.

Fee simple title and full ownership of the aforesaid territory, which lies wholly within Nueces County, Texas, is vested in Petitioner.

II.

The addition of said territory to South Texas Water Authority is feasible and practical, would be to the best interest both to the territory and to the Authority and would benefit said territory.

III.

The Authority will be able to supply water, or have water supplied, to the added territory.

IV.

This petition shall constitute an election on the part of the Petitioner, its successors and assigns, for the aforesaid land and any improvements which may be constructed thereon to become liable for all present and future debts of the Authority in the same manner and to the same extent as other lands and improvements in the Authority are liable for the Authority's debts.

V.

Petitioner hereby authorizes the Board of Directors of the Authority to levy taxes and set rates sufficient to pay their share of the aforementioned outstanding indebtedness.

WHEREFORE, Petitioner prays that this petition be properly filed, as provided by law; that the Board of Directors of South Texas Water Authority hear and consider the petition in keeping with the provisions of Section 11006.052, Special District Local Laws Code and that this petition in all things be granted and that the territory described in Exhibit "A" be added to and become a part of the established South Texas Water Authority; that after this petition is granted the Board's order thereon be filed of record and be recorded in the Deed Records of Nueces County, Texas; and that the area described in Exhibit "A" be thereafter a component part of South Texas Water Authority.

[Signatures and Acknowledgement on following page.]

EXECUTED this 18 day of March, 2020.

Santos Ramirez, Jr.

ACKNOWLEDGEMENT

STATE OF TEXAS

COUNTY of Kleberg

Subscribed and sworn to before me Santos Ramirez, Jr. on this the 18th day of March, 2020.

NOEMI S. FLORES
Notary Public, State of Texas
Comm. Expires 04-22-2020
Notary ID 2928416

Notary Public

My Commission Expires: 4/22/2020

NOTARY SEAL

Exhibit "A"

To

PETITION FOR ADDITION OF CERTAIN LANDS TO
THE SOUTH TEXAS WATER AUTHORITY

Property Description:

Cyndie Park Unit 1, Lot 11 and Lot 12, AKA 4590 Cyndie Ln., Robstown in Nueces County, Texas, and as described in the Warranty Deed with Vendor's Lien recorded under Document No. 2017020757 of the Official Records of Nueces County, Texas.

ATTACHMENT 19

Annexation Petition
Jose A. and Mary L. Garcia
John Hernandez

Memorandum

To: South Texas Water Authority Board of Directors
From: Carola G. Serrato, Executive Director
Date: April 23, 2020
Re: Annexation Petitions – Set Time and Date for Public Hearing:
Jose A. and Mary L. Garcia - The Ranch-Unrecorded Subdivision, Lot 7 Block G
John Hernandez – The Ranch – Unrecorded Subdivision, Tract 21-H

Background:

As the Board is aware, the Nueces County Grant Administration office acquired funds to address water quality problems in the area of Cyndie Park and The Ranch subdivisions. A 4" waterline was extended from the Nueces Water Supply Corporation (NWSC) 6" line and placed into service on April 8th. Since the Cyndie Park and The Ranch subdivisions are not within South Texas Water Authority's district boundaries, the property owner requests retail water service from the NWSC and annexation into STWA's district. This results in the new NWSC member paying the same costs (NWSC retail water bill and STWA property taxes) as all other NWSC customers.

Analysis:

Enclosed are two (2) annexation petitions from Mr. Jose A. Garcia and Mr. John Hernandez. These petitions begin the annexation process for their properties. The corresponding resolutions will set the time and date for a public hearing on the annexation. The public hearing will be scheduled for immediately preceding the May 26th Board meeting.

Staff Recommendation:

Adopt Resolution 20-14 and Resolution 20-15

Board Action:

Determine whether to adopt Resolution 20-14 and Resolution 20-15.

Summarization:

Mr. Garcia's property will require an extension to the NWSC's distribution system. Mr. Garcia has paid the cost of the extension. Mr. Hernandez's property is a recent purchase after the original owner evicted and reclaimed the tract.

ATTACHMENT 20

Resolution 20-14

SOUTH TEXAS WATER AUTHORITY

Resolution 20-14

RESOLUTION OF DETERMINATION OF VALIDITY OF ANNEXATION PETITION, SETTING PUBLIC HEARING AND AUTHORIZING PUBLICATION OF NOTICE.

WHEREAS, Jose A. Garcia and Mary L. Garcia (Petitioners), have filed the attached petition (the Petition) with the South Texas Water Authority requesting annexation of their property into the South Texas Water Authority in order to allow water service to their property to be provided by Nueces Water Supply Corporation, and

WHEREAS, the South Texas Water Authority Board of Directors has reviewed the Petition and finds that it meets all of the requirements for annexation into the South Texas Water Authority's District, and

WHEREAS, the Board of Directors hereby sets a public hearing to hear evidence for or against the proposed annexation of this property to be held on May 26, 2020 at 5:30 p.m. at the South Texas Water Authority, 2302 East Sage Road, Kingsville, Texas.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the South Texas Water Authority hereby authorizes the publication of the attached Notice of Public Hearing on Annexation for a public hearing to be held on May 26, 2020 at 5:30 p.m. at South Texas Water Authority, 2302 East Sage Road, Kingsville, Texas. At such hearing all interested persons may appear and offer evidence for or against the proposed annexation of the property described in Exhibit A of the Petition.

Duly adopted this 28th day of April, 2020.

_____

KATHLEEN LOWMAN, PRESIDENT

ATTEST:

_____

RUDY GALVAN, JR., SECRETARY/TREASURER

PETITION FOR ADDITION OF CERTAIN LANDS TO
THE SOUTH TEXAS WATER AUTHORITY

STATE OF TEXAS :
COUNTY OF NUECES :

TO THE BOARD OF DIRECTORS OF THE SOUTH TEXAS WATER AUTHORITY:

The undersigned (herein called "Petitioner"), holder of title to the territory described by metes and bounds in Exhibit "A" which is attached hereto and incorporated herein for all purposes, being all of the residents and landowners of such territory, as shown by the tax rolls of Nueces County, Texas, and acting pursuant to the provisions of Section 11006.052, Special District Local Laws Code, respectfully petitions the Board of Directors of South Texas Water Authority that the territory described by metes and bounds in Exhibit "A" be added to and become a part of the established South Texas Water Authority, and in support of this petition would show as follows:

I.

Fee simple title and full ownership of the aforesaid territory, which lies wholly within Nueces County, Texas, is vested in Petitioner.

II.

The addition of said territory to South Texas Water Authority is feasible and practical, would be to the best interest both to the territory and to the Authority and would benefit said territory.

III.

The Authority will be able to supply water, or have water supplied, to the added territory.

IV.

This petition shall constitute an election on the part of the Petitioner, its successors and assigns, for the aforesaid land and any improvements which may be constructed thereon to become liable for all present and future debts of the Authority in the same manner and to the same extent as other lands and improvements in the Authority are liable for the Authority's debts.

V.

Petitioner hereby authorizes the Board of Directors of the Authority to levy taxes and set rates sufficient to pay their share of the aforementioned outstanding indebtedness.

WHEREFORE, Petitioner prays that this petition be properly filed, as provided by law; that the Board of Directors of South Texas Water Authority hear and consider the petition in keeping with the provisions of Section 11006.052, Special District Local Laws Code and that this petition in all things be granted and that the territory described in Exhibit "A" be added to and become a part of the established South Texas Water Authority; that after this petition is granted the Board's order thereon be filed of record and be recorded in the Deed Records of Nueces County, Texas; and that the area described in Exhibit "A" be thereafter a component part of South Texas Water Authority.

[Signatures and Acknowledgement on following page.]

EXECUTED this 1 day of April, 2020.

Jose A. Garcia

Jose A. Garcia

Mary L. Garcia

Mary L. Garcia

ACKNOWLEDGEMENT

STATE OF TEXAS

COUNTY of Nueces

Subscribed and sworn to before me Jose A. Garcia on this the

1st day of April, 2020.

SHERRY HERNANDEZ
My Notary ID # 128833645
Expires December 20, 2023

Notary Public

My Commission Expires: 12-20-23

NOTARY SEAL

ACKNOWLEDGEMENT

STATE OF TEXAS

COUNTY of Nueces

Subscribed and sworn to before me Mary L. Garcia on this the

1st day of April, 2020.

SHERRY HERNANDEZ
My Notary ID # 128833645
Expires December 20, 2023

Notary Public

My Commission Expires: 12-20-23

NOTARY SEAL

Exhibit "A"

To

PETITION FOR ADDITION OF CERTAIN LANDS TO
THE SOUTH TEXAS WATER AUTHORITY

Property Description:

Lot 7, Block G of The Ranch Subdivision in Nueces County, Texas, being a tract of land containing 2.6 acres, more or less, conveyed by Warranty Deed from John S. McGregor and C.C. Speed to Willie Lee Hill and Mary Anne Hill, and more fully described in Volume 1875, Pages 345 through 351, Deed Records of Nueces County, Texas, and under File No. 326690, County Clerk Records of Nueces County, Texas.

NOTICE OF PUBLIC HEARING ON ANNEXATION

THE STATE OF TEXAS
SOUTH TEXAS WATER AUTHORITY

Pursuant to a Resolution adopted by the Board of Directors of South Texas Water Authority, a hearing shall be held at the South Texas Water Authority, 2302 East Sage Road, Kingsville, Texas, on May 26, 2020 at 5:30 p.m. with respect to the Petition filed by Jose A. Garcia and Mary L. Garcia for annexation of the territory described below, on the question of whether the territory sought to be annexed will be benefited by the improvements, works, and facilities then owned or operated or contemplated to be owned or operated by the Authority or by the other functions of the Authority. All interested persons may appear at such hearing and offer evidence for or against the proposed annexation.

Signed this the 28th day of April, 2020.

Kathleen Lowman, President
Board of Directors
South Texas Water Authority

That certain lot or tract of land situated in Nueces County, Texas, and more particularly described as follows:

> Lot 7, Block G of The Ranch Subdivision in Nueces County, Texas, being a tract of land containing 2.6 acres, more or less, conveyed by Warranty Deed from John S. McGregor and C.C. Speed to Willie Lee Hill and Mary Anne Hill, and more fully described in Volume 1875, Pages 345 through 351, Deed Records of Nueces County, Texas, and under File No. 326690, County Clerk Records of Nueces County, Texas.

ATTACHMENT 21

Resolution 20-15

SOUTH TEXAS WATER AUTHORITY

Resolution 20-15

RESOLUTION OF DETERMINATION OF VALIDITY OF ANNEXATION PETITION, SETTING PUBLIC HEARING AND AUTHORIZING PUBLICATION OF NOTICE.

WHEREAS, John Hernandez (Petitioner), has filed the attached petition (the Petition) with the South Texas Water Authority requesting annexation of his property into the South Texas Water Authority in order to allow water service to their property to be provided by Nueces Water Supply Corporation, and

WHEREAS, the South Texas Water Authority Board of Directors has reviewed the Petition and finds that it meets all of the requirements for annexation into the South Texas Water Authority's District, and

WHEREAS, the Board of Directors hereby sets a public hearing to hear evidence for or against the proposed annexation of this property to be held on May 26, 2020 at 5:30 p.m. at the South Texas Water Authority, 2302 East Sage Road, Kingsville, Texas.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the South Texas Water Authority hereby authorizes the publication of the attached Notice of Public Hearing on Annexation for a public hearing to be held on May 26, 2020 at 5:30 p.m. at South Texas Water Authority, 2302 East Sage Road, Kingsville, Texas. At such hearing all interested persons may appear and offer evidence for or against the proposed annexation of the property described in Exhibit A of the Petition.

Duly adopted this 28th day of April, 2020.

_____
KATHLEEN LOWMAN, PRESIDENT

ATTEST:

_____
RUDY GALVAN, JR., SECRETARY/TREASURER

PETITION FOR ADDITION OF CERTAIN LANDS TO
THE SOUTH TEXAS WATER AUTHORITY

STATE OF TEXAS :
COUNTY OF NUECES :

TO THE BOARD OF DIRECTORS OF THE SOUTH TEXAS WATER AUTHORITY:

The undersigned (herein called "Petitioner"), holder of title to the territory described by metes and bounds in Exhibit "A" which is attached hereto and incorporated herein for all purposes, being all of the residents and landowners of such territory, as shown by the tax rolls of Nueces County, Texas, and acting pursuant to the provisions of Section 11006.052, Special District Local Laws Code, respectfully petitions the Board of Directors of South Texas Water Authority that the territory described by metes and bounds in Exhibit "A" be added to and become a part of the established South Texas Water Authority, and in support of this petition would show as follows:

I.

Fee simple title and full ownership of the aforesaid territory, which lies wholly within Nueces County, Texas, is vested in Petitioner.

II.

The addition of said territory to South Texas Water Authority is feasible and practical, would be to the best interest both to the territory and to the Authority and would benefit said territory.

III.

The Authority will be able to supply water, or have water supplied, to the added territory.

IV.

This petition shall constitute an election on the part of the Petitioner, its successors and assigns, for the aforesaid land and any improvements which may be constructed thereon to become liable for all present and future debts of the Authority in the same manner and to the same extent as other lands and improvements in the Authority are liable for the Authority's debts.

V.

Petitioner hereby authorizes the Board of Directors of the Authority to levy taxes and set rates sufficient to pay their share of the aforementioned outstanding indebtedness.

WHEREFORE, Petitioner prays that this petition be properly filed, as provided by law; that the Board of Directors of South Texas Water Authority hear and consider the petition in keeping with the provisions of Section 11006.052, Special District Local Laws Code and that this petition in all things be granted and that the territory described in Exhibit "A" be added to and become a part of the established South Texas Water Authority; that after this petition is granted the Board's order thereon be filed of record and be recorded in the Deed Records of Nueces County, Texas; and that the area described in Exhibit "A" be thereafter a component part of South Texas Water Authority.

[Signatures and Acknowledgement on following page.]

EXECUTED this 22 day of April, 2020.

John Hernandez

ACKNOWLEDGEMENT

STATE OF TEXAS

COUNTY of Nueces

Subscribed and sworn to before me John Hernandez on this the 29 day of April, 2020.

DELILAH BENAVIDEZ
Notary Public
STATE OF TEXAS
My Comm. Exp. 04-29-23
Notary ID # 12601113-5

Notary Public

My Commission Expires: 4/29/2023

NOTARY SEAL

Exhibit "A"

To

PETITION FOR ADDITION OF CERTAIN LANDS TO
THE SOUTH TEXAS WATER AUTHORITY

Property Description:

Tract Twenty-One-H (21-H), The Ranch, being a tract of land containing 1.31 acres, more or less out of 238.79 acres of land out of CASA BLANCA GRANT and being part of Blocks 24 and 25 of the MANTOR BRIGGS & KUYKENDALL SUBDIVISION of 5155.97 acres in Nueces County, Texas, according to the map or plat recorded in Volume 2, Page 57, of the Map records of Nueces County, Texas, being more particularly described by metes and bounds in the Warranty Deed with Vendor's Lien recorded under Document No. 2016053695 of the Official Records of Nueces County, Texas.

NOTICE OF PUBLIC HEARING ON ANNEXATION

THE STATE OF TEXAS
SOUTH TEXAS WATER AUTHORITY

Pursuant to a Resolution adopted by the Board of Directors of South Texas Water Authority, a hearing shall be held at the South Texas Water Authority, 2302 East Sage Road, Kingsville, Texas, on May 26, 2020 at 5:30 p.m. with respect to the Petition filed by John Hernandez for annexation of the territory described below, on the question of whether the territory sought to be annexed will be benefited by the improvements, works, and facilities then owned or operated or contemplated to be owned or operated by the Authority or by the other functions of the Authority. All interested persons may appear at such hearing and offer evidence for or against the proposed annexation.

Signed this the 28th day of April, 2020.

Kathleen Lowman, President
Board of Directors
South Texas Water Authority

That certain lot or tract of land situated in Nueces County, Texas, and more particularly described as follows:

Tract Twenty-One-H (21-H), The Ranch, being a tract of land containing 1.31 acres, more or less out of 238.79 acres of land out of CASA BLANCA GRANT and being part of Blocks 24 and 25 of the MANTOR BRIGGS & KUYKENDALL SUBDIVISION of 5155.97 acres in Nueces County, Texas, according to the map or plat recorded in Volume 2, Page 57, of the Map records of Nueces County, Texas, being more particularly described by metes and bounds in the Warranty Deed with Vendor's Lien recorded under Document No. 2016053695 of the Official Records of Nueces County, Texas.