



## **Soil Corrosivity Lab & Field Services by Corrosion Engineers**

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Our mission remains the same. Average 3 day turn-around-time on analysis and report. We understand your project needs to keep moving.

- (1) To provide accurate scientific analysis of your samples within a prompt timely manner,
- (2) To have an open door of communication so you will feel as if we are your in-house corrosion and thermal analysis department. A corrosion & thermal department led by licensed professional engineers, with NACE/AMPP corrosion credentials and years of industry leadership involvement, construction defect litigation & failure analysis investigations who know firsthand how to keep you out of trouble.
- (3) To be active in multidiscipline associations forging a professional network of partners and colleagues that are at your service as your corrosion toolbox when you need it.
- (4) Thermal Resistivity Dry Out curves are dependent on soil properties and usually cannot be finished within 24 hours. Rush gets you to the front of the line but physics don't change.

Our most popular packages are:

**\$190 FULL Corrosion Series:** pH, Min-Resistivity, water-soluble sulfate, chloride, ammonia, nitrate, sulfide, and redox potential; Provides all data needed to evaluate corrosion risk to dissimilar metal connections, carbon steel, ductile iron, stainless steel, copper, brass, aluminum, and concrete.

**\$150 Caltrans GeoQUAD:** pH, Min-Resistivity, water-soluble Sulfate, & Chloride Data to evaluate corrosion risk to dissimilar metal connections, concrete and steel, little else.

**\$50 Sulfate and Chloride:** Requests for "Sulfate Only" will always have Chloride data too because chlorides are what will cause steel in concrete to corrode. You do not want to be surprised by chlorides at your building site.

**\$50 A la carte tests** such as Sulfide only or pH only will be \$50. We will not require any minimum orders as always.

**\$625 Thermal Resistivity Dry-Out Curve** based on 6 points. Averaging 3 day turnaround time.

**\$100 For Remolding** soil samples to your provided Proctor Data

We appreciate your business and look forward to serving you in the future. We thank you for providing us the opportunity to be of service. We offer competitive prices with **average 3 day Turn-Around-Time (TAT)** on analysis and report. We understand your project needs to keep moving.

**Discount for early payment: Terms 5% discount if paid in full within 30 days.**

Sincerely,

Ed Hernandez, M.Sc., NACE CCT#16592, P.E.  
Project X Corrosion Engineering  
29990 Technology Dr. #13, Murrieta, CA 92563

[Caltrans Accredited Laboratory](http://www.projectxcorrosion.com)

CERTIFIED MBE- DBE - SBA 8(a) NAICS 541330, 237120, 541380

Cell: 951-215-6399 For urgent questions, please text me



### **Results Only Caltrans GeoQuad Corrosion series Package \$150/soil sample**

Tests Include:

- (1) Minimum Resistivity                      (2) Sulfate                      (3) Chloride                      (4) pH

**Assess Corrosion Risk to:**

- (1) Concrete                      (2) Carbon Steel (rebar)                      (3) Ductile Iron

**Warning:** Caltrans guidelines are mainly concerned with steel and concrete roads. If your site also has copper water lines, copper electrical grounding, aluminum conduits, or brass fittings, you desire FULL CORROSION SERIES.

### **Results Only Full Corrosion Series Package \$190/ soil sample**

To truly assess corrosion risk, this is the best “Results Only” Package. You can use our recommended [thresholds](#) to make judgment calls about import soil and site risk. Tests Include:

- (1) Minimum Resistivity                      (4) Sulfide                      (7) Ammonia  
(2) Sulfate                      (5) Redox                      (8) Nitrate  
(3) Chloride                      (6) pH

Letter Report of “results only” signed and stamped by a licensed California Professional Engineer, Materials Scientist, and NACE Corrosion Technologist.

These results allow interpretation by a corrosion engineer trained in material science to **Assess Corrosion Risk** to all general construction materials such as:

- (1) Concrete                      (2) Carbon Steel                      (3) Ductile Iron                      (4) Copper  
(5) Brass                      (6) Aluminum                      (7) Stainless Steels

### **Corrosion Control Recommendations Report Package \$190/ soil sample + \$1,500 Report**

The report provides Corrosion control recommendations for:

- (1) Concrete                      (4) Copper                      (7) Stainless Steels  
(2) Carbon Steel                      (5) Brass                      (8) Expected Corrosion  
(3) Ductile Iron                      (6) Aluminum                      rates of zinc, steel and  
copper

The report is signed and stamped by a licensed California Professional Engineer, Material Scientist, and NACE Corrosion Technologist.

We need a minimum of three locations plus one location per acre of the site from the depth of the infrastructure to be installed. Typically 1ft depth and 4ft depth samples at each location are tested.

**Discount for early payment: Terms 5% discount if paid in full within 30 days.**



## Recommendations for Collecting Representative Samples

We recommend a **400 gram soil sample** per acre be tested with a **minimum of 3 locations** for small lots. *Sometimes a client collects soil from a fertilizer contaminated spot which is not representative of the entire site, thus having soil from more than one location provides better statistical accuracy. You're already on-site, grab extra samples.*

For residential developments, we recommend testing every 5th lot for corrosion series to avoid future construction defect surprises. If this is for evaluating corrosion towards piles, concrete, and underground utilities, then we need samples from depths of 1 foot (most important for piles and concrete), 4 foot (for underground utilities and grounding wires), and ground water table information.


At Project X Corrosion Engineering, we specialize in testing soil and water corrosivity, investigating causes of corrosion, building inspection, corrosion control, and failure analysis. We help clients determine why they have a corrosion problem in the first place and what they can do to avoid corrosion problems in the future. We do not sell products or perform construction. We provide **unbiased** recommendations requiring the least amount of maintenance and cost. Customer service and reasonable turnaround times are our priority.

# PROJECT X

## CORROSION ENGINEERING



**Soil Corrosivity Lab**  
Can test "À La Carte" corrosive salts or follow our corrosion engineer & metallurgist recommended suite. We can educate you. Only 300g soil sample needed!



Caltrans Accredited



**Thermal Resistivity**  
Thermal Resistivity Dry-Out Curve from zero to 110% of proctor moisture with 3-day or less turn around. Only 3 lbs of soil needed!

[www.projectxcorrosion.com](http://www.projectxcorrosion.com)

Click for One Hour ["Practical Approach to Soil Corrosivity Evaluation" Presentation](#)



**A LA CARTE TESTING FEES. [Download Lab Request Form]**

Method	Parameter	Rate
ASTM D4327	Ion Chromatography Anions: Sulfate, Chloride, Nitrate, Fluoride, Phosphate	\$50 / each ion
ASTM D6919	Ion Chromatography Cations: Ammonium, Lithium, Sodium, Potassium, Magnesium, Calcium	\$50 / each ion
SM 2320 B	Bicarbonate (Total as CaCO <sub>3</sub> )	\$50.00
SM 2320 B	Alkalinity (Total as CaCO <sub>3</sub> )	\$50.00
SM 4500-NH <sub>3</sub>	Ammonia – Nessler (NH <sub>3</sub> -N)	\$50.00
HACH 830	Ammonia – Salicylate (NH <sub>3</sub> -N)	\$50.00
ASTM D 512B	Chloride (CL <sup>-</sup> )	\$50.00
AASHTO T 291	Chloride (CL <sup>-</sup> )	\$50.00
Caltrans CTM 422	Chloride (CL <sup>-</sup> )	\$50.00
SM 2510 B	Conductivity (mS/cm)	\$50.00
AASHTO T 288	Minimum Resistivity (ohm-cm)	\$80.00
Caltrans CTM 643	Minimum Resistivity (ohm-cm)	\$80.00
ASTM D 2216	Moisture Content & Density	\$50.00
SM 4500-NO <sub>3</sub>	Nitrate – Cadmium Reduc. (NO <sub>3</sub> --N)	\$50.00
HACH 835	Nitrate – Dimethylphenol (NO <sub>3</sub> --N)	\$50.00
ASTM G 51	pH (H <sup>+</sup> )	\$50.00
AASHTO T 289	pH (H <sup>+</sup> )	\$50.00
Caltrans CTM 643	pH (H <sup>+</sup> )	\$50.00
SM 2580 B	Redox Potential (mV)	\$50.00
ASTM G 57 [4 pin method]	Resistivity – As Received & Saturated (ohm-cm)	\$80.00
ASTM G 187 [2 pin method]	Resistivity – As Received & Saturated (ohm-cm)	\$80.00
ASTM D516	Sulfate (SO <sub>4</sub> <sup>2-</sup> )	\$50.00
AASHTO T 290	Sulfate (SO <sub>4</sub> <sup>2-</sup> )	\$50.00
Caltrans CTM 417	Sulfate (SO <sub>4</sub> <sup>2-</sup> )	\$50.00
SM 4500-S <sub>2</sub>	Sulfide (S <sub>2</sub> <sup>-</sup> )	\$50.00



Method	Parameter	Rate
ASTM D 5334, IEEE 442-1981	6 point Thermal Resistivity Dry-Out Curve. For Undisturbed samples; 6"(IEEE) or 8"(ASTM) height total needed, 2" minimum diameter. Avg 3Day Turn-around time.	\$625.00
ASTM D 698, D2216, D 2937	Soil remolding at optimum moisture and density	\$100.00
ASTM D-1126 HACH 8030	Calcium (Ca++)	\$50.00
ASTM D-1126 or HACH 8030	Total Hardness in Water	\$50.00
ASTM D5907	Total Dissolved Solids (TDS)	\$50.00
HACH 8033	Lead (Pb)	\$80.00
Water Corrosivity Report	Langelier (LSI), Ryzner (RSI), & Puckorius (PSI) Scaling Index results with interpretation	\$200.00



## **Condition Assessment/Failure Analysis of Building Plumbing**

Collecting pipe samples and water samples from a building is like giving it a blood test and a physical. The samples needed to perform the assessment would be the following:

1. First Flush Hot Water
2. First Flush Cold Water
3. 2 minute flush then take Hot Water
4. 2 minute flush then take Cold water
5. First Flush Water sample from water meter at the property line (shows if problems start from origin or in the building)
6. First Flush Water heater water sample.
7. Cold Water pipes, Collect near joints for a 3 ft long sample. This shows plumber soldering quality. At heavy flow area and low flow (dead leg) area.
8. Hot Water pipes, Collect near joints for a 3 ft long sample. This shows plumber soldering quality. At heavy flow area and low flow (dead leg) area.

How many samples? All the above at approximately every 2,000 sq ft of a building would be ideal.

Price menu:

\$500 Pipe Cutting and Analysis (visual and wall thickness measurements, condition assessment)  
: \$500/pipe-Try to get 3ft pipe samples

\$500 Water Analysis (Corrosive ions, Potential for pitting, Metals Content (iron, copper, zinc, lead), pH, TDS, Hardness, Langelier Index, Corrosivity indices report) \$500 per sample

\$50 Sulfate Reducing Corrosive Bacteria "acid test" on any corrosion products found

\$1,500 Report of findings, conclusions, and recommendations stamped by Licensed PE, Material Scientist, Corrosion Engineer: For the report provide address, floor plan showing where pipe samples were collected, age of pipes, Leak History if any.

Typical Turn around time: 10 business days.



**2025 Non-Prevailing Wage Fee Schedule**

Forensic Engineer Eduardo Hernandez, PE / Principal Engineer	\$500/hr
NACE Cathodic Protection Specialist: Brendan Sheehan, PE	\$350/hr
NACE Certified Corrosion Specialist: Marcos Garcia	\$300/hr
NACE Field Corrosion Engineer: Jouni Nupponen	\$300/Hr
Machining - Pipe Cutting	\$125/hr
Microbiologically Induced Corrosion Testing (MIC)	\$500 per sample received
Drafting	\$150/hr
Clerical	\$75/hr
Mileage	\$1/mile

**Discount for early payment: Terms 5% discount if paid in full within 30 days.**

All time is charged portal to portal from Murrieta, CA. There is a 2-hour minimum for deposition, arbitration, and trial testimony. These rates apply to regular and travel time.

Personnel time is billed in one-hour increments. Overtime for non-engineers will be charged at 1.5 times the above rates.

Meal and incidental expenses (M&IE) during travel will be charged as per diem per Federal Government CONUS rates.

Permits, fees, and rental of special equipment will be charged at cost plus 15%.

Compensation for services performed will not be contingent upon the necessity of client to receive payment from other parties. All items stored on our premises are subject to a storage fee.





COMPANY DBE-SBA-MBE CERTIFICATES

1. Caltrans DBE Firm #42914
2. US Small Business Administration SBA 8(a) # 26985
3. Supplier Clearinghouse MBE VON # 16000370
4. National Minority Supplier Development Council MBE # SC05511
5. LA Metro Small Business Enterprise Certification #7438
6. Port of Long Beach Small Business Enterprise Certificate #416568
7. CA DIR Registration #1000053048
8. DUNS 859366796
9. CAGE #7GL87

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**Search Returned 1 Records** Thu Jan 05 17:35:11 PST 2023

Query Criteria

Certification Types: DBE  
 Firm ID: 42914

Firm ID	42914
DBA Name	PROJECT X ENGINEERS INC.
Firm Name	PROJECT X ENGINEERS INC.
Address Line1	29990 TECHNOLOGY DR., SUITE 13
Address Line2	
City	MURRIETA
State	CA
Zip Code1	92563
Zip Code2	
Mailing Address Line1	
Mailing Address Line2	
Mailing City	
Mailing State	
Mailing Zip Code1	
Mailing Zip Code2	
Certification Type	DBE
E-Mail	hhernandez@projectxcorrosion.com; Info@projectxcorrosion.com
Contact Name	HANNA SORASAHII HERNANDEZ
Area Code	951
Phone Number	813-5619

**Disadvantaged Business Enterprise (DBE)**

CALIFORNIA DEPARTMENT OF TRANSPORTATION  
 Office of  
 Business & Economic Opportunity

Caltrans DBE Firm # 42914  
 NAICS 541330

Work Codes: C2030 EROSION CONTROL; C8710 ENGINEERING; C8715 CONSULTANT,  
 ENGINEERING; C8722 ENVIRONMENTAL ENGINEER; C8742 MECHANICAL  
 ENGINEERS

**Small Disadvantaged Business (SDB) through SBA**



**Figure 1- Caltrans DBE #42914**



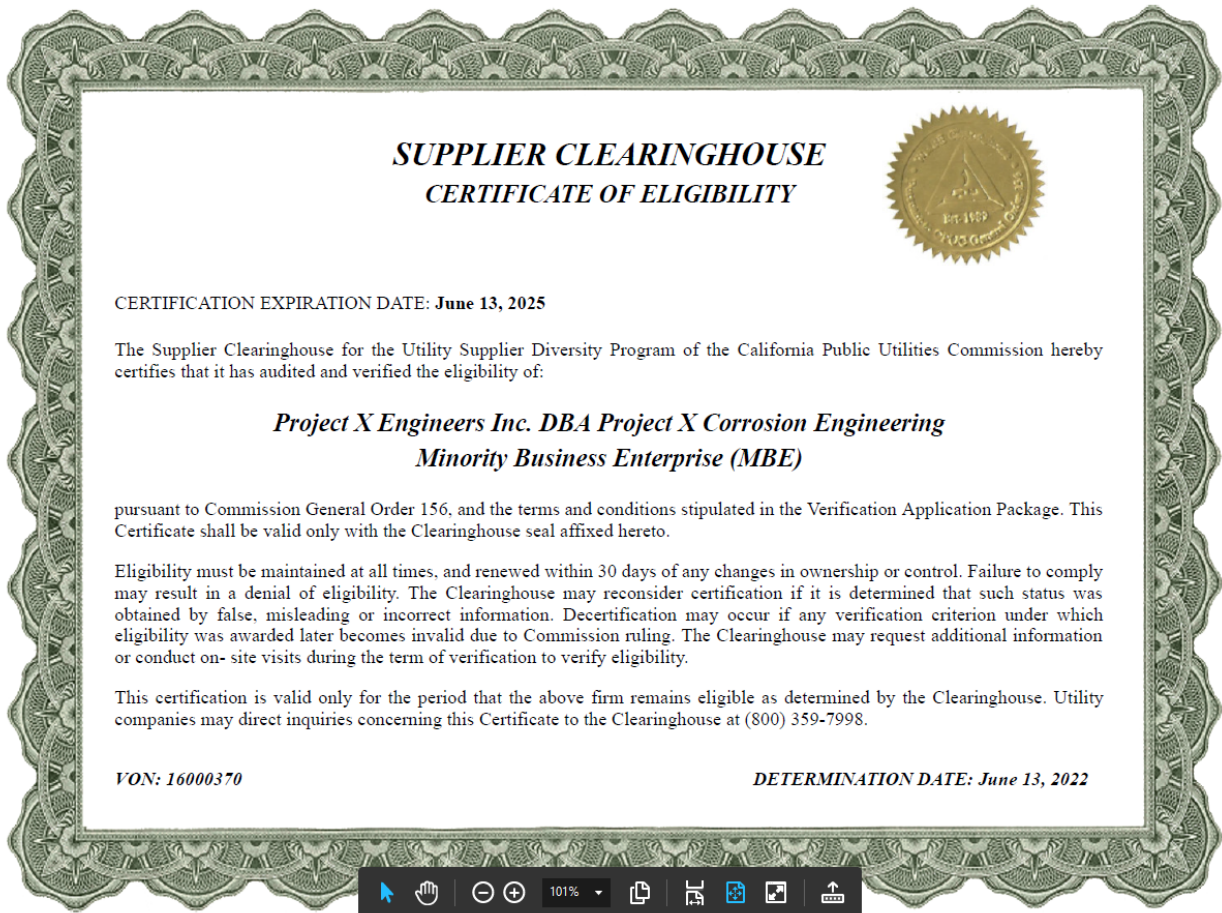


**Business & Contact Information**

BUSINESS NAME	<b>Project X Engineers Inc., DBA Project X Corrosion Engineering</b>
OWNER	Mr. Eduardo Hernandez
ADDRESS	29990 Technology Suite 13 Murrieta, CA 92563 <a href="#">[map]</a>
PHONE	951-813-5619
FAX	951-226-1720
EMAIL	<a href="mailto:hhernandez@projectxcorrosion.com">hhernandez@projectxcorrosion.com</a>
WEBSITE	<a href="http://www.projectxcorrosion.com">http://www.projectxcorrosion.com</a>
ETHNICITY	Hispanic American
GENDER	Male

**Certification Information**

CERTIFYING AGENCY	Supplier Clearinghouse
CERTIFICATION TYPE	MBE - Minority Business Enterprise
EXPIRATION DATE	6/13/2025
CERTIFIED BUSINESS DESCRIPTION	At Project X Corrosion Engineering (MBE & DBE), we specialize in investigating causes of corrosion, corrosion control, and failure analysis. We investigate and prepare reports regarding the corrosivity of soils or liquids. We help clients determine why they have a corrosion problem in the first place and what they can do to avoid corrosion problems in the future. We do not sell products or perform construction. We provide unbiased recommendations requiring the least amount of maintenance and cost. We specialize in Condition Assessment and Construction Management.



**Figure 2- Supplier Clearinghouse MBE VON 16000370**



**Metro**

Los Angeles County  
Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

213.922.2000 Tel  
metro.net

April 25, 2017

**Metro File #7438**

Mr. Eduardo Hernandez  
PROJECT X ENGINEERS INC DBA Project X Corrosion Engineering  
29970 Technology Drive Suite 105F  
MURRIETA, CA 92563-5619

Subject: Small Business Enterprise Certification

Dear Mr. Eduardo Hernandez:

We are pleased to advise you that after careful review of your application and supporting documentation, the Los Angeles County Metropolitan Transportation Authority (Metro) has determined that your firm meets the eligibility standards to be certified as a Small Business Enterprise (SBE) as required under Metro's SBE Program. Your firm will be listed in Metro's SBE database of certified SBEs under the following specific areas of expertise:

NAICS 541330: ENGINEERING SERVICES  
NAICS 541380: TESTING LABORATORIES

Your SBE certification is valid for five years from the date of this letter and applies only for the above NAICS code(s). Any additions and revisions must be submitted to Metro for review and approval.

In order to ensure your continuing SBE status, you are required to submit an annual update along with supporting documentation. If no changes are noted, then your SBE status remains current. If there are changes, Metro will review to determine continued SBE eligibility. Please note, your SBE status remains in effect unless Metro notifies you otherwise.

After the five-year certification period, your entire file will be reviewed in order to ascertain continued SBE certification status. You will be notified of the pending SBE status review and any documentation updates necessary prior to the expiration date.

Also, should any changes occur that could affect your certification status prior to receipt of the annual update application, such as changes in your firm's name, business/ mailing address, ownership, management or control, or failure to meet the applicable business size standards or personal net worth standard, please notify Metro immediately.

Metro reserves the right to withdraw this certification if at any time it is determined that it was knowingly obtained by false, misleading, or incorrect information. Your SBE certification is subject to review at any time. The firm thereby consents to the examination of its books, records, and documents by Metro.

Congratulations, and thank you for your interest in Metro's SBE Program. Should you have any questions, please contact us at (213) 922-2600. For information on Metro contracting opportunities, please visit our website at [www.metro.net](http://www.metro.net).

Sincerely,

Shirley Wong  
Sr. Certification Officer  
Diversity & Economic Opportunity Department

### **Figure 3- LA Metro Small Business Enterprise Certification #7438**



Certified Small Business Enterprise

Vendor Account Number: 416568  
Ed Hernandez, PE  
Project X Corrosion Engineers  
29990 Technology Dr Suite 13  
Murrieta, CA 92563

Thank you for submitting your Vendor Application seeking Small Business Enterprise recognition with the Port of Long Beach (Port). Per our evaluation of the information you provided in your application and the North American Industry Classification System codes you identified, your status as a Small Business Enterprise (SBE) has been approved.

The Port is pleased to issue this SBE Certificate subject to the terms and conditions identified below:

NAICS code(s) for which SBE status is recognized: 541330, 541380, 541690, 115310, 213112, 221320, 237110  
SBE Certificate Effective Date: 01/13/23  
SBE Certificate Expiration Date: 01/13/26

Work Performed by your firm that falls within the above-mentioned NAICS code(s) will be counted as SBE participation for work performed on contracts procured by the above Port.

The Port reserves the right to withdraw this certification if at any time it is determined that certification was knowingly obtained by false, misleading or incorrect information and reserves the right to audit all statements. If any firm attempts to falsify or misrepresent information to obtain certification, the firm may be disqualified from participation in any contracts for a period of up to five years.

SBE Certification is valid for a period of three (3) years. To maintain SBE status, firms must update their existing SBE Vendor Application on or before the expiration date stated above. All information is subject to verification.

If there are any changes in your status that may impact your certification, you are required to update your account information online. A copy of your information can be viewed by logging into your Vendor Profile, and visiting the Small Business Certification tab.

Sincerely,  
Sashi Muralidharan  
SBE Administrator  
Port of Long Beach

415 W. Ocean Blvd, Long Beach, CA 90802 Telephone (562) 283-7598 email: sbeprogram@polb.com

**Figure 4-Port of Long Beach Small Business Enterprise Certificate #416568**



**U.S. SMALL BUSINESS ADMINISTRATION**  
WASHINGTON, D.C. 20416

November 4, 2016

Eduardo Hernandez, President  
Project X Engineers, Inc.  
29970 Technology Drive, Suite 105F  
Murrieta, California 92563

Dear Mr. Hernandez:

Congratulations! Your firm has been certified as a Participant in the U.S. Small Business Administration's (SBA) 8(a) Business Development Program. Your nine (9) year program term begins on the date of this letter.

During participation in the 8(a) BD Program, you will receive business development assistance from an assigned Business Development Specialist in the Santa Ana District Office located at 5 Hutton Centre Drive, Suite 900, Santa Ana, California 92707. The phone number is (714)550-7420. We are sending a copy of this certification letter to the SBA Santa Ana District Office. That office will contact you to schedule an orientation session. This could take up to 4-6 weeks. In the meantime, there are steps you should take to start your participation in the program.

**Next Steps**

- **Read and Sign Participation Agreement:** SBA requires the 8(a) participant's President or Chief Executive Officer sign a Participation Agreement showing he or she understands the conditions of 8(a) BD program participation. Please find the Agreement attached to the approval email associated with this letter. Please read the Agreement carefully, sign and date it, and make a copy. Return one copy to the SBA Santa Ana District Office at the address shown in the second paragraph above. The second copy is for your records.
- **Develop Your Business Plan:** We encourage you to start developing your business plan. Current 8(a) BD program regulations require a firm, once certified, to promptly submit a business plan which must be approved by the SBA before the firm is eligible to receive 8(a) benefits; including 8(a) contracts. Once approved, the business plan will be reviewed annually and may be modified as needed. We offer an optional format for business plans. To consider the optional 8(a) Business Plan Form 1010C, please go to: <https://www.sba.gov/sites/default/>

**Figure 5-US Small Business Administration SBA 8(a) # 26985**



files/SBA%201010C.pdf.

- **Develop Your Strategy for Winning Contracts in Year 1:** Though your firm's approved North American Industry Classification System (NAICS) Code is 541330, your firm may be awarded contracts under other NAICS Codes, as long as your firm is qualified to perform the required service or task. In this regard, please note that contracts awarded under 8(a) Business Development Program authority generally result from the self-marketing efforts of participating firms. You must build relationships with potential federal customers, pursue federal prime contractors for subcontracts, and aggressively pursue prime contract opportunities to grow your business. Successful 8(a) firms regularly respond to competitive small business contracting opportunities posted on [www.FBO.gov](http://www.FBO.gov). Establish a goal and vision for winning at least two (2) competitive contracts during your first year.

- **Utilize Resources:** There are valuable FREE resources available to you right now that offer expertise in all areas of business operation including reviewing your business plan and strategy. Two resources that you can utilize today are:
  - o **SBA Resource Partners:** I encourage you to locate your nearest Resource Partner, please go to: <https://www.sba.gov/tools/local-assistance>. This link will provide access to upcoming small business events and the webpage for your District SBA Office, also.

- o **7(j) Management and Technical Assistance:** While your firm's acceptance into the 8(a) Business Development program is not a guarantee for contracts, the SBA will make every effort to assist you in implementing your business plan and strategy. Your success in the program is dependent upon the extent to which you take advantage of SBA's efforts to support you. One of the agency's major tools for your success is the 7(j) Management and Technical Assistance Services Program. For more information, click on the following link: <https://www.sba.gov/about-sba/sba-initiatives/7j-management-and-technical-assistance-services-program>.

I am excited about your future, and I welcome you as an 8(a) Business Development Program participant. Wishing you much success!

Sincerely,

Robert Watkins,  
Acting Associate Administrator  
, Office of Business Development