

Project Title: Category B Scenario 1 – Petroleum Only Environmental Services

1. Project Summary:

The objective of this investigation is to determine the magnitude and extent of soil and groundwater petroleum contamination at the active gas station in rural western Minnesota and to determine if the petroleum contamination poses a threat to any sensitive receptors in the area including vapor intrusion, surface water, drinking water or direct contact.

2. Statement of Problems, Opportunities, and Existing Conditions

The site is an active gas station that consist of a fueling station with an attached 24 hour restaurant located in a rural town in Western Minnesota. Two former underground storage tanks (USTs) were removed in the late 1990's prior to the construction of the slab-on-grade restaurant and an elevated PID reading of 1,263 ppm was recorded and petroleum odors were noted. There has also been significant staining noted near the pump islands and the station has noted a loss of product over the last few months. Based on the historical petroleum odors and elevated PID reading as well as the recent product loss and staining, the Minnesota State Duty Officer has been notified of a release.

The active service station currently has three USTs in service including one diesel and two gasoline to the west of the station. The active service station also has one fuel oil aboveground storage tank (AST) located to the north of the station and two former USTs were located under the footprint of the current restaurant. During the removal of the former USTs, strong petroleum odors and elevated PID readings were recorded. The active gas station also has four pump islands located to the south of the station where significant staining has been observed. The station has also noted a loss of product in the last few months. Petroleum odors have also been reported by several residents in their drinking water.

The site geology consists of interbedded sand and gravel to a depth of between 40-45 feet which overlays shallow bedrock at 45 feet. Depth to water has not been determined but is expected to be relatively shallow based on geologic conditions. Due to the soil overburden of less than 50 feet located over shallow bedrock, this site is considered to have a sensitive groundwater condition. The aquifer also appears to represents a resource aquifer for 80 foot deep private wells that supply water to the lakeside properties east and north of the site. A surface water receptor is also located less than 500 feet east of the site. The service station is connected to municipal water and other utilities at the site include storm sewer, sanitary sewer and water that run along Main Street.

It appears that there has been at least one petroleum subsurface historical subsurface release on the site has been established related to the former USTs. Other possible release(s) may be related to the staining near the pump islands and/or the loss of product over the past few months. Although it appears both releases are related to gasoline and/or diesel, the presence of the fuel oil tank and possible other petroleum substances (grease, etc.) may have been used and released on the site as well. In order to characterize the magnitude and extent of petroleum contamination, as well as determine if there are exposure pathways to sensitive receptors, a limited site investigation (LSI) will be necessary. At the conclusion of the investigation it will be necessary to establish the following:

- Site characteristics and release characteristics
- A characterization of the site geology and hydrogeology
- Extent and magnitude of soil and groundwater contamination
- Identification of sensitive receptors in the area and an evaluation of possible risk pathways that could affect them
- A model that summarizes site conditions and determines current and future impacts

3. Goals, Objectives, Tasks, and Subtasks

Goal : Determine the public health and safety and environmental risks and impacts associated with the active gas station and restaurant in a rural town in Western Minnesota

4. Objective 1: Complete a Limited Site investigation of the active gas station site.

Task A: *Prepare a Work Plan*

Subtask 1: Collect and review background information.

Subtask 2: Prepare a site Health and Safety Plan.

Subtask 3: Obtain on-site and off-site access agreements if necessary.

Subtask 4: Prepare request for bid and coordinate with contractors in accordance with the Subcontractor Purchasing Manual.

Task B: *Complete field investigation activities*

Subtask 1: Notify MPCA within 48 hours of fieldwork schedule

Subtask 2: Coordinate public and private utility locate services

Subtask 3: Mobilize personnel, equipment and field supplies for soil borings, groundwater sampling and soil vapor sampling

Subtask 4: Document all field activities

Subtask 5: Complete soil borings and classify soil samples according to Unified Soil Classification System (USCS) and record geological properties of soil. Screen soils visually and soil headspace using a photoionization detector (PID) according to MPCA procedures. Select analytical soil samples for laboratory analysis according to MPCA procedures.

Subtask 6: Collect groundwater samples for laboratory analytical analysis from borings according to MPCA procedures.

Subtask 7: Advance soil gas probes and collect soil gas samples for laboratory analytical analysis according to MPCA procedures.

Subtask 8: Collect and analyze soil samples from saturated zone for grain size analysis

Subtask 9: Ship/deliver analytical samples for analysis

Subtask 10: Compile data from field activities and complete necessary forms (boring logs, etc.)

Task C: *Complete receptor survey of site and surrounding area*

Subtask 1: Compile a list of neighboring properties and property owners located within 500 feet of the site

Subtask 2: Obtain water supply well information from Minnesota Department of Health (MDH) for domestic wells within 500 feet of the site and industrial/municipal wells within ½ mile of the site.

Subtask 3: Obtain city engineering drawings of underground utility lines on or near the site

Subtask 4: Conduct walking survey of properties located within 500 feet of the site

Subtask 5: Conduct surface water survey

Subtask 6: Conduct vapor receptor survey and screen any potential utility receptors using a PID and LEL.

Subtask 7: Sample private wells within 500 feet of the site according to MPCA guidance

Subtask 8: Attempt to contact properties with no response using alternative methods (postcards, phone calls)

Task D: *Complete LSI Report and determine additional actions*

Subtask 1: Complete Investigation Report using MPCA Guidance Document 4-06 with all necessary documentation

This Work Plan includes the advancement of initial soil borings using a hydraulic probe. Soil borings will be advanced near the current USTs, the pump islands, the fuel oil AST and near the former UST basin under the restaurant. Borings will be advanced ten feet past the deepest detected contamination or five feet beneath the water table in accordance with MPCA Guidance Document 4-01 "*Soil and groundwater assessments performed during site investigations*". In order to evaluate site stratigraphy, one of the borings advanced near the former UST basin will be completed to a depth of 20 feet below the deepest contamination or 20 feet into the water table, whichever is deeper.

Soil samples for all borings will be collected at 2.5 foot intervals, field screened continuously using a PID and the petroleum sheen test. Soil samples will be collected at the boring terminus and the highest PID reading if groundwater is not encountered and at the water table and the highest PID reading in the vadose zone if not at the water table. Surface soil assessment will also be conducted all borings completed in areas without impervious surface and include soil headspace readings, visual observation and the petroleum sheen test. Surface soil samples will be collected if the PID reading exceed the screening level in Table 2 of MPCA Guidance Document 4-01 or the soil is visibly stained. Soil samples will be collected for laboratory analysis in accordance with MPCA Guidance Document 4-04 "*Soil sample collection and analysis procedures*" and analyzed for petroleum volatile organic compounds (PVOs), gasoline range organics (GRO) and diesel range organics (DRO). A minimum of three additional soil samples will be collected for grain size analysis with at least two collected below the water table from intervals that appear to have the highest hydraulic conductivity if groundwater is

encountered. An additional soil grain size sample will be collected if an apparent confining layer is encountered. Grain size samples will be analyzed using American Society for Testing Material test method D422. Based on the initial results from soil sampling, additional soil borings will be advanced if necessary to fully delineate the extent of surface soil and soil contamination.

Groundwater samples will be collected from all soil borings where groundwater is encountered using temporary well screens that intersect the water table. If contamination is encountered ten or more feet in the water table, additional water samples will be collected. All samples will be collected for laboratory analysis in accordance with MPCA Guidance document 4-05 "Groundwater sample collection and analysis procedures and analyzed for volatile organic compounds (VOCs), GRO and DRO. Because the site also meets the sensitive groundwater condition criteria described in MPCA Guidance Document 4-18 "*Assessment of sensitive groundwater conditions*" and petroleum odors have been reported in drinking water, private wells within 500 feet of the site will be sampled for VOCs, GRO and DRO in accordance with MPCA Guidance Document 4-05 and the latest MDH VOC sampling results and a copy of the Wellhead Protection Plan will be obtained (if available). Results of the private well sampling will be discussed with the MPCA to evaluate risk and whether corrective action should be considered.

Additional groundwater sampling will be conducted if necessary in order to delineate the extent of groundwater contamination. If it is determined during the course of the investigation that an aquifer has been (or is likely to be) contaminated with petroleum compounds above drinking water standards or 1mg/L GRO or DRO, that surface water has been (or is likely to be) contaminated with petroleum compounds above drinking water standards or 1mg/L GRO or DRO or if mobile LNAPL is encountered, a Remedial Investigation will be initiated to measure groundwater contaminant concentrations and determine if the plume is stable.

A Vapor Intrusion Assessment will also be performed in accordance with MPCA Guidance Document 4-01a "*Vapor Intrusion Assessment Performed During Site Investigations*". The vapor survey will consist of the advancement of soil gas probes to three to five feet below grade and the collection of soil gas to determine the vapor intrusion risk to the restaurant and the gas station onsite. An additional "worst case" soil gas sample will be collected close to the area of the known or suspected highest petroleum contamination at 8-10 feet or a minimum of two feet above the water table. The vapor intrusion assessment will also identify any utility vapor receptors onsite and on adjacent properties including under roadways that could act as areas where petroleum vapor could accumulate or act as vapor migration pathways. Pathways, such as sewer grates and manholes which are accessible will be field screened using a PID and LEL.

If it is determined that concentrations of contaminants exceed 33X their respective intrusion screening value (ISV) near one of the building onsite, a vapor intrusion building survey will be conducted and sub-slab sampling will be conducted in accordance with the MPCA Guidance Document 3-06 "*Best management practices for vapor investigation and building mitigation decisions*".

A water supply well receptor survey, a water line permeation receptor survey and a surface water receptor survey will be conducted in accordance with the MPCA Guidance Document 4-02 "*Risk evaluation and site management decisions at petroleum release sites*". A walking survey of all properties within 500 feet of the source will be conducted to determine if water supply wells, subsurface structures, obvious surface water features and possible petroleum sources are present and to document and map their characteristics. Construction details of water lines will be obtained from the local municipality to determine the location and characteristics of the water line on the site to see if it might be susceptible to petroleum permeation. Surface water bodies within ¼ mile of the site will be identified including any potential pathways to determine if there are any potential impacts to surface waters near the site.

Upon completion of the field and assessment activities, an Investigation Report using MPCA Guidance Document 4-06 will be completed that summarizes all of the data collected during the investigation using text, tables and figures. As part of the report, a site conceptual model will be developed that integrates the various elements of risk evaluation to assess potential exposure pathways in accordance with the Petroleum Remediation Program's risk-based approach. The Investigation report will also recommend site closure, additional investigation or monitoring or corrective action based on the results of the investigation.

The information/data obtained through the above-described work plan is summarized as follows.

- The soil borings and groundwater sampling will provide information on the extent and degree of the petroleum contamination. The soil and groundwater samples may not define the extent of the contamination to either the soil or groundwater, but the results will provide information on whether additional site investigation is necessary, where future borings or monitoring wells should be performed or installed, whether free product is present, and possibly whether the aquifer has been (or is likely to be) contaminated.
- The petroleum sheen test will help in evaluating whether "free product" may be present on the site and likely to pose vapor risks to occupants or neighboring properties.
- The receptor survey, vapor and walking survey will assess the current and potential threat from vapors to the surrounding properties. In addition, if vapors are discovered during the surveys, appropriate non-construction

mitigation measures (i.e., fans) may be implemented.

- The potable well sampling will help assess whether an alternative drinking water source may be necessary for the building onsite or for the lakeside homes.
- The surface water survey and utility maps will provide information on the associated risk potential for the lake located approximately 300 feet west of the property.

The decision to close a site, monitor for plume stability, supply alternative drinking water supplies or install a remedial system is based on information collected during the investigation. If it is determined that the contamination poses a risk to human health or the environment then a corrective action, other than natural attenuation, may be recommended and a Conceptual Corrective Action Design Worksheet (Fact Sheet 4-19) and monitoring plan will need to be prepared and submitted to the MPCA project manager for review and approval.

The CCAD report may propose as little as excavation of the grossly contaminated source material to reduce further contamination of the groundwater and long-term monitoring, or the CCAD report may be very extensive and recommend source excavation and installation of various remediation technologies such as a soil vapor extraction (SVE) system, air sparging or a groundwater pump and treat system and long term monitoring. These technologies would be employed to remediate the groundwater plume to levels below current MDH health risk limits (HRL). The site characteristics and contamination levels present will determine recommendations for cleanup technologies.

The LSI report, and timetable provided in the work plan, would provide the first measure on the progress made toward the projects goals and objectives defined above. Each additional scope of work to continue with site investigation or remedial activities will also provide a schedule and intended outcome to achieve the project goals and objectives. At this time, the measurable outcomes of this project can be summarized as follows:

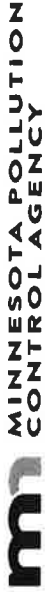
- Defines the extent and magnitude of petroleum contamination,
- Identifies and assesses potential health, safety and environmental risks, and
- Provides sufficient information to justify file closure, design a monitoring plan, or select a corrective action.

Objective 1 Timeline:

Project Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Task A - Prepare a work Plan								
Collect and review background information	█							
Prepare a Health and Safety Plan	█							
Obtain onsite and offsite access	█							
Prepare and request bids	█							
Task B - Complete field investigation								
Conduct field activities		█	█					
-soil borings		█	█					
- groundwater sampling		█	█					
-soil gas sampling		█	█					
-grain size samples		█	█					
Analytical analysis of collected samples			█	█				
Compile data and complete necessary forms			█	█				
Task C - Complete Receptor Survey								
Compile list of neighboring properties		█	█					
Obtain well information		█	█					
Obtain City engineering information		█	█					
Conduct walking survey		█	█					
Sample potable wells		█	█					
Attempt to contact properties using alternative methods			█	█	█			
Task D - Complete Investigation Report								
Complete Investigation Report		█	█	█	█	█	█	█

Objective 1 Deliverables:

1. Task A – Work plan, onsite and offsite access agreements
2. Task B – Soil boring logs, Soil gas sampling logs, Laboratory analytical reports, field notes
3. Task C – Potable well logs, private well sampling field notes and analytical results
4. Task D – Investigation Report



520 Lafayette Road North
St. Paul, MN 55155-4194

Attachment B

*Example Scenario Project Spreadsheet

Project title: Scenario B - Petroleum-Only (MSA Professional Services) *EXAMPLE ONLY - ADD OBJECTIVES/TASKS/CLASSIFICATIONS WHERE APPLICABLE

Project Budget	1. Personnel					2. Subcontracting	3. Equipment	4. Other Expenses	Totals (Extended)
	Project Manager	Scientist 2	Scientist 1	GIS/CADD Specialist	Field Technician				
* Objective 1: Limited Site Investigation									
Task A: Prepare a Work Plan									
Background information review		2							2
Health & Safety Plan preparation			2						2
Obtain offsite access		2							2
Prepare bid request		2							2
Task B: Field Activities									
Field work notification			1						1
Utility locate			1						1
Mobilization			4						4
Document field activities			1						1
Soil boring oversight			6						6
Groundwater sample collection			2						2
Soil gas sample collection			2						2
Soil grain size sample collection			1						1
Sample shipping			1						1
Soil boring logs		1	3						4
Task C: Receptor Survey									
Obtain property information			2						2
Obtain well information			1						1
Obtain utility information			1						1
Walking Survey			2						2
Surface Water Survey			1						1
Vapor Receptor Survey			1						1
Sample private wells			2						2
Survey follow-up			1						1
Task D: Investigation Report									
Prepare investigation report		1	4	24	10				39
Prepare site conceptual model		2							2
Determine site management decision		2							2
Total for Objective 1 hrs		11	5	59	10				85
Total Project Hours		11	5	59	10				85

ATTACHMENT D

**STATE OF MINNESOTA
AFFIDAVIT OF NONCOLLUSION**

I swear (or affirm) under the penalty of perjury:

1. That I am the Responder (if the Responder is an individual), a partner in the company (if the Responder is a partnership), or an officer or employee of the responding corporation having authority to sign on its behalf (if the Responder is a corporation);
2. That the attached proposal submitted in response to the *MPCA – Remediation Master Contract Request* for Proposals has been arrived at by the Responder independently and has been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other Responder of materials, supplies, equipment or services described in the Request for Proposal, designed to limit fair and open competition;
3. That the contents of the proposal have not been communicated by the Responder or its employees or agents to any person not an employee or agent of the Responder and will not be communicated to any such persons prior to the official opening of the proposals; and
4. That I am fully informed regarding the accuracy of the statements made in this affidavit.

Responder's Firm Name: MSA Professional Services, Inc.

Authorized Representative (Please Print) BRYAN D. MILLER

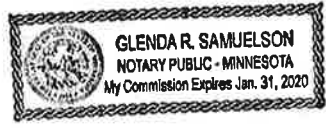
Authorized Signature: *Bryan D. Miller*

Date: 3/28/18

Subscribed and sworn to me this 28 day of March

Notary Public Signature: *Glenda R. Samuelson*

My commission expires: 01/31/2020



ATTACHMENT E
STATE OF MINNESOTA – WORKFORCE CERTIFICATE INFORMATION
Required by state law for ALL bids or proposals that could exceed \$100,000

Complete this form and return it with your bid or proposal. The State of Minnesota is under no obligation to delay proceeding with a contract until a company becomes compliant with the Workforce Certification requirements in Minn. Stat. §363A.36.

BOX A – MINNESOTA COMPANIES that have employed more than 40 full-time employees within this state on any single working day during the previous 12 months, check one option below:

- Attached is our current Workforce Certificate issued by the Minnesota Department of Human Rights (MDHR).
- Attached is confirmation that MDHR received our application for a Minnesota Workforce Certificate on _____ (date).


BOX B – NON-MINNESOTA COMPANIES that have employed more than 40 full-time employees on a single working day during the previous 12 months in the state where it has its primary place of business, check one option below:

- Attached is our current Workforce Certificate issued by MDHR.
- We certify we are in compliance with federal affirmative action requirements. Upon notification of contract award, you must send your federal or municipal certificate to MDHR at compliance.MDHR@state.mn.us. If you are unable to send either certificate, MDHR may contact you to request evidence of federal compliance. The inability to provide sufficient documentation may prohibit contract execution.

BOX C – EXEMPT COMPANIES that have not employed more than 40 full-time employees on a single working day in any state during the previous 12 months, check option below if applicable:

- We attest we are exempt. If our company is awarded a contract, we will submit to MDHR within 5 business days after the contract is fully signed, the names of our employees during the previous 12 months, the date of separation, if applicable, and the state in which the persons were employed. Send to compliance.MDHR@state.mn.us.

By signing this statement, you certify that the information provided is accurate and that you are authorized to sign on behalf of your company.

Name of Company: MSA Professional Services Date March 30, 2018
Authorized Signature:  Telephone number: 563-445-3501
Printed Name: Craig Fields Title: Director Human Resources

For assistance with this form, contact:

Minnesota Department of Human Rights, Compliance Services

Web: <http://mn.gov/mdhr/>

TC Metro: 651-539-1095

Toll Free: 800-657-3704

Email: compliance.mdhr@state.mn.us

TTY: 651-296-1283

ATTACHMENT F

CERTIFICATION REGARDING LOBBYING For State of Minnesota Contracts and Grants over \$100,000

The undersigned certifies, to the best of his or her knowledge and belief that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, A Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

MSA Professional Services, Inc.
Organization Name

BRIAN D. MILLER, V.P.
Name and Title of Official Signing for Organization

By: Brian D. Miller
Signature of Official

3/28/18
Date

ATTACHMENT G

State of Minnesota – Equal Pay Certificate

If your response could be in excess of \$500,000, please complete and submit this form with your submission. It is your sole responsibility to provide the information requested and when necessary to obtain an Equal Pay Certificate (Equal Pay Certificate) from the Minnesota Department of Human Rights (MDHR) prior to contract execution. You must supply this document with your submission. Please contact MDHR with questions at: 651-539-1095 (metro), 1-800-657-3704 (toll free), 711 or 1-800-627-3529 (MN Relay) or at compliance.MDHR@state.mn.us.

Option A – If you have employed 40 or more full-time employees on any single working day during the previous 12 months in Minnesota or the state where you have your primary place of business, please check the applicable box below:

- Attached is our current MDHR Equal Pay Certificate.
Attached is MDHR's confirmation of our Equal Pay Certificate application.

Option B – If you have not employed 40 or more full-time employees on any single working day during the previous 12 months in Minnesota or the state where you have your primary place of business, please check the box below.

- We are exempt. We agree that if we are selected we will submit to MDHR within five (5) business days of final contract execution, the names of our employees during the previous 12 months, date of separation if applicable, and the state in which the persons were employed. Documentation should be sent to compliance.MDHR@state.mn.us.

The State of Minnesota reserves the right to request additional information from you. If you are unable to check any of the preceding boxes, please contact MDHR to avoid a determination that a contract with your organization cannot be executed.

Your signature certifies that you are authorized to make the representations, the information provided is accurate, the State of Minnesota can rely upon the information provided, and the State of Minnesota may take action to suspend or revoke any agreement with you for any false information provided.

Handwritten signature of Gilbert A. Hantzsch
Authorized Signature Gilbert A. Hantzsch CEO
Printed Name Title

MSA Professional Services, Inc. 39-1016174 March 27, 2018
Organization MN/FED Tax ID# Date

Issuing Entity Project # or Lease Address

ATTACHMENT H
STATE OF MINNESOTA
RESIDENT VENDOR FORM

In accordance with Laws of Minnesota 2013, Chapter 142, Article 3, Section 16, amending Minn. Stat. § 16C.02, subd. 13, a "Resident Vendor" means a person, firm, or corporation that:

- (1) is authorized to conduct business in the state of Minnesota on the date a solicitation for a contract is first advertised or announced. It includes a foreign corporation duly authorized to engage in business in Minnesota;
- (2) has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid or proposal for which any preference is sought;
- (3) has a business address in the state; and
- (4) has affirmatively claimed that status in the bid or proposal submission.

To receive recognition as a Minnesota Resident Vendor ("Resident Vendor"), your company must meet each element of the statutory definition above by the solicitation opening date and time. If you wish to affirmatively claim Resident Vendor status, you should do so by submitting this form with your bid or proposal.

Resident Vendor status may be considered for purposes of resolving tied low bids or the application of a reciprocal preference.

I HEREBY CERTIFY THAT THE COMPANY LISTED BELOW:

1. Is authorized to conduct business in the State of Minnesota on the date a solicitation for a contract is first advertised or announced. *(This includes a foreign corporation duly authorized to engage in business in Minnesota.)*
 Yes ___ No (must check yes or no)
2. Has paid unemployment taxes or income taxes in the State of Minnesota during the 12 calendar months immediately preceding submission of the bid or proposal for which any preference is sought.
 Yes ___ No (must check yes or no)
3. Has a business address in the State of Minnesota.
 Yes ___ No (must check yes or no)
4. Agrees to submit documentation, if requested, as part of the bid or proposal process, to verify compliance with the above statutory requirements.
 Yes ___ No (must check yes or no)

BY SIGNING BELOW, you are certifying your compliance with the requirements set forth herein and claiming Resident Vendor status in your bid or proposal submission.

Name of Company: MSA Professional Services, Inc.

Date: March 29, 2018

Authorized Signature: _____

Telephone: (612) 548-3132

Printed Name: _____

Gilbert A. Hantzsch, P.E.

Title: CEO

IF YOU ARE CLAIMING RESIDENT VENDOR STATUS, SIGN AND RETURN THIS FORM WITH YOUR BID OR PROPOSAL SUBMISSION.

