



# Public Services

128 North Second Street • Fourth Floor Courthouse • Yakima, Washington 98901  
(509) 574-2300 • 1-800-572-7354 • FAX (509) 574-2301 • [www.co.yakima.wa.us](http://www.co.yakima.wa.us)

VERN M. REDIFER, P.E. - Director

July 23, 2010

ATTENTION: ALL BIDDERS AND PLAN HOLDERS

RE: **SP 3386 – Terrace Heights Landfill Gas Probes**

## ADDENDUM NO. 1

You are hereby notified that the plans and specifications for the above referenced project are amended as explained below.

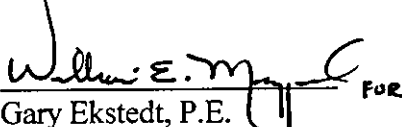
The Contract Specifications are revised as follows:

Replace Page 29 of the Special Provisions with Page 29 - Addendum No. 1. This revision revises the language for Section 4.4 Intermediate and Surface Seals.

Replace Pages 31 and 32 of the Special Provisions with Page 31 - Addendum No. 1 and Page 32 - Addendum No. 1. This revision revises the language for Section 5.7 Gas Probe, Sand Pack and Seal Installation.

In order to incorporate the above noted changes into this project, remove the existing Pages 29, 31 and 32 of the Special Provisions section of the Contract Specifications and replace with the attached Page 29 - Addendum No. 1, Page 31 – Addendum No. 1 and Page 32 – Addendum No. 1.

All bidders shall be required to furnish the Yakima County Engineer with evidence of the receipt of this Addendum. This Addendum shall be incorporated in and made a part of the contract when awarded and formally executed.

  
Gary Ekstedt, P.E. FOR  
County Engineer

PROJECT 3386 \ ADDENDUM 1

*Yakima County ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin, or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding Yakima County's Title VI Program, you may contact the Title VI Coordinator at 509-574-2300.*

*If this letter pertains to a meeting and you need special accommodations, please call us at 509-574-2300 by 10:00 a.m. three days prior to the meeting. For TDD users, please use the State's toll free relay service 1-800-833-6388 and ask the operator to dial 509-574-2300.*

#### **4.4 Intermediate and Surface Seals**

The annular seal materials shall be neat cement, neat cement grout, bentonite slurry, or hydrated bentonite chips, crumbles or pellets. If cement, grout or slurry is used, the seal material shall have low-enough viscosity to penetrate the space between casing strings and form a tight seal. If bentonite chips, crumbles or pellets are used, they shall be small enough to fill the space between casing strings without bridging. Sealing materials shall be mixed and placed in accordance with WAC 173-160. Fine-mesh sand shall be placed between seal material and Filter Packs to prevent intrusion of seal material into filter packs. The Contractor may elect to use accelerants meeting the requirements of WAC 173-160 in intermediate seals.

#### **4.5 Centralizers**

Centralizers used to maintain casing separation and position in the borehole shall be constructed of either metal or plastic. The centralizer design shall not interfere with installation of seal materials.

#### **4.6 Well Monuments**

The gas probes shall be protected with an above-ground steel casing with a removable locking cap. The casing shall be at a minimum 8-inches in diameter and 5-feet in length and shall be painted with two coats of high-visibility rust-preventative paint. After placement, the monument shall have about 2.5 feet of stickup (Figure 3). Each gas probe completion in the well monument shall be topped with a sampling port consisting of a ball-valve and a 1/4-inch brass barbed fitting. The well monument shall be filled with pea gravel to 4-inches below the sampling ports.

#### **4.7 Concrete Pad and Traffic Barrier Posts (Bollards)**

Steel reinforced concrete shall be used to construct a four-foot by four-foot surface pad (six-inch thick) surrounding the well monuments (Figure 3). Four three-inch diameter steel pipe traffic barrier posts (schedule 40 steel pipe) shall be at the corners of the pad. The posts shall be at least 6 feet long and placed with 3-feet of pipe above and below the original ground surface. A 3-inch separation between bollards and edge of concrete shall be maintained. Traffic barrier posts shall also be painted with 2 coats of high-visibility rust preventative paint and be capped with a PVC cap.

## **PART 5 - EXECUTION OF WORK – GAS PROBE DRILLING AND INSTALLATION**

*Items 5.2 to 5.11 refer to work at gas probes GP-9, GP-10 and GP-11.*

#### **5.1 Completion Schedule**

The Contractor and Geologist shall schedule the work such that work is completed within 90 calendar days after “Notice to Proceed” is issued. The Contractor may choose to work weekends to meet this schedule.

#### **5.2 Drilling**

##### ***Boring Diameter***

The Contractor shall provide an air rotary rig and a compressor large enough and capable of reaching the desired depth. The borehole diameter from ground surface to approximately 30 feet above the target boring depth shall be at least 8 inches. The lower 30 feet, corresponding to the lower screen interval where only one casing string will be present, may be reduced to 5-inch

### **5.5 Alignment**

Alignment requirements during drilling are that any casing, liner or drill tools can be run freely through the boring. At a minimum, the alignment shall conform to WAC 173-160-215(4) "Design and Construction--Well Completion—General (Alignment)." The alignment requirement for the completed gas probe is that a sounder may pass freely through the gas probe casing prior to installation of the sampling port.

### **5.6 Abandonment**

Any gas probe or boring that does not meet the alignment or other requirement, which is contaminated by the Contractor, any borehole that fails to reach the target depth because of equipment inadequacy or failure, or any well on which the Contractor stops work, will be considered abandoned and shall be decommissioned in accordance with WAC 173-160-460. A new well shall be started in the immediate vicinity at a location designated by the Geologist or Owner. No payment will be made for any work associated with the abandoned/decommissioned well. The Contractor may, at his own expense, remove any ungrouted casing.

### **5.7 Gas Probe, Sand Pack and Seal Installation**

The Contractor shall construct 3 gas probes in each boring. Construction shall meet or exceed the requirements outlined in the April 20, 2010 "Vapor Sampling Well Construction Variance to WAC 173-160-420 (3)."

The Contractor may elect to lower all three gas probes into the borehole at the same time and construct seals and filter packs around them, or place each gas probe in sequence as the corresponding filter packs and seals are placed. Regardless of the order of gas probe placement, centralizers shall be used to ensure adequate spacing between the gas probes, and with the borehole wall. Centralizers shall be placed at the top and bottom of each seal interval, or not more than every 20 feet.

Installation at each gas probe is expected to proceed as follows:

- Lower the lower well casing and screen assembly into the borehole. Place middle and upper casing strings with centralizers if all casing strings are to be constructed concurrently.
- The lower filter pack shall be placed and tagged with a drop line to verify that the filter pack is at least 2 feet above the top of the lower screened interval.
- At least one foot of fine mesh sand shall be placed at the top of the filter pack to prevent overlying seal materials from infiltrating the filter pack.
- Place middle casing string, screen assembly, and centralizers if not placed with lower casing.
- Seal material shall be placed to the target depth to form an annular seal between the top of the fine mesh sand and the base of the middle filter pack. A tag line shall be used to

verify that the seal remains at least 2 feet below the target depth for the middle screen interval.

- At least one foot of fine mesh sand shall be placed at the top of the lower seal to prevent seal materials from infiltrating the filter pack.
- The middle filter pack shall be placed and tagged with a drop line to verify that the filter pack is at least 2 feet above the top of the screened interval.
- At least one foot of fine mesh sand shall be placed at the top of the middle filter pack to prevent seal materials from infiltrating the filter pack.
- Seal material shall be placed to the target depth to form an annular seal between the top of the fine mesh sand and the base of the upper filter pack. A tag line shall be used to verify that the seal remains at least 2 feet below the target depth for the upper screen interval.
- At least one foot of fine mesh sand will be placed on the top of the middle seal to ensure that the seal materials do not plug the filter pack.
- Place upper casing string, screen assembly and centralizers if not placed concurrent with lower casing.
- The upper filter pack shall be placed and tagged with a drop line to verify that the filter pack is at least 2 feet above the top of the screened interval.
- At least one foot of fine mesh sand shall be placed at the top of the upper filter pack to prevent surface seal materials from infiltrating the filter pack.
- The surface seal will consist of hydrated bentonite, neat cement or bentonite slurry to 5 feet below ground surface. The surface seal will consist of concrete between 5 feet and the ground surface to accommodate the concrete around the well monument and casing, as discussed in Section 5.9.

Gloves and outer clothing layers worn by the Contractor while touching the gas probe casing shall be clean and new. The Contractor may elect to wear disposable coveralls over their normal work clothing. The gas probe casing shall be cleaned before installation unless it is removed from a manufacturer's sealed package just prior to installation.

If the gas probe is damaged during installation, including but not limited to, deviation from proper alignment, dimpling of the casing or screen, or deformation of the casing, the Contractor is responsible for the replacement of damaged materials at the Contractor's expense.