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NWIRP CALVERTON NY
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Project Number 5563

Mr. Steve Lehman (Code 4023)
Design Manager
Northern Division
Naval Facilities Engineering Command
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Lester, Pennsylvania 19113

Reference: Clean Contract No N62472-90-D-1298,
Contract Task Order No 0223

Subject: Month 1 Sample Activities and System Modifications
Fire Training Area, Vapor Extraction/Air Sparging Pilot System
NWIRP Calverton, New York

Dear Mr Lehman.

Please find enclosed six copies of the subject attachments for your review and use As discussed, the air sparging/soil vapor extraction system was started on schedule on August 31, 1995 Attachment 1 provides detail on the planned field activities to be conducted after one month of operation (week of September 25, 1995) Also, during the installation of the pilot system, several field changes to the system were made Attachment 2 provides the details and rationale for these modifications

If have any questions or require additional information, please call me at (412) 921-8375

Sincerely

David D Brayack, P.E.
Project Manager

/DDB

cc Mr R Boucher (Navy) w/o attachment
Mr. J. Colter (Navy)
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Mr. J. Trepanowski (HNUS)
Mr. D. Hutson (HNUS)
Mr J Farrell (HNUS) w/o attachment

Attachment 1
Planned Activities for End of Month 1 Sampling Event

1 Collect air samples

- Fixed-base laboratory testing for VOCs using tedlar bag samples of carbon inlet, carbon outlet, bank E1-E6, and field blank. Note collect blank sample upwind of entire sample.
- Draeger tube samples of carbon inlet, carbon outlet, and in between carbon units for TPH, toluene, and 1,1,1-TCA.
- Draeger tube samples of carbon inlet, E19, E20, E21, E22, and E23, combined E19 to E23, for carbon dioxide, oxygen, and TPH

2. Measure air flow rates at each extraction well bank, individual injection wells, extraction blower inlet, and injection blower outlet

- Adjust air extraction valve on each bank to obtain an average air flow rate of 7 +/- 2 cfm per well
- Adjust air injection valves on individual wells to obtain an average air flow rate of 7 +/-2 cfm per well
- Re-measure flowrates after restart

3. Record temperatures and pressures around blowers.

- Observe moisture level in moisture separator. Drain if necessary (MS-1).
- Extraction blower inlet pressure, SP: -3" Hg (PS-1)
- Extraction blower outlet pressure, SP: 1 psi (PS-3).
- Extraction blower outlet temperature, SP 150 F (TS-1, needs to be set)
- Injection blower outlet pressure, SP. 4.75 psi (PS-2)
- Injection blower outlet temperature, SP: 150 F (TS-2, needs to be set)
- Record power usage, date, and time

4 Shut down blowers overnight. Prior to restart, sample groundwater

- Change oil

5 Sample MW-02S, I16, I13, and I6 ground waters for VOCs, temperature, and dissolved oxygen Samples should be collected after blowers have been down overnight. Blowers can be restarted once groundwater samples are collected

- In addition, MW-02S groundwater is to be sampled for SVOCs and PCBs/pesticides

6 Sample SB101, SB102, and SB103 soils (depth of 1-2 feet) for SVOCs and PCBs/pesticides

7 Apply water soluble ammonium nitrate an area approximately 80' by 80', see attached figure

- Application rate is based on quantity of oxygen supplied.
- A typical BOD/ nitrogen (N)/ phosphorous (P) requirement is 100/5/1
- Provide a 30 day supply of nitrogen and phosphorous
    - nitrogen. 135 pound as N,
    - phosphorous 27 pounds as P

- Sample wells MW-02S for nitrate/nitrite

Attachment 2
System Modifications During Installation

Affected Work Plan Item	Action taken	Rationale for Action Taken
1. Blower Housing Unit	Blower housing unit was not installed Note that the blower housing unit can still be installed, if necessary	CF Braun proposes not to install the blower housing unit at this time for the following reasons • The primary reasons for using a housing unit are for freeze protection in the winter, noise containment, and security The planned operation for the unit is September through December As a result extreme cold is not expected. Note that the blowers and auxiliary equipment are made for outdoor use The pilot system is at a remote area of the facility, with no personnel normally present The location of the unit is also within the high security fence maintained by Grumman • The high ambient air temperatures experienced during this past summer would have required excessive ventilation in the building. A delayed startup would have pushed system operation into January. None of the system, including all of the piping, is winterized.
2 Real time air monitoring	Draeger tubes were used instead of the OVA meter for on site measurement of extracted air quality. Discrete analysis for total petroleum hydrocarbons, toluene, 1,1,1-trichloroethane, oxygen, and carbon dioxide was conducted Table B-1-1 of the Work Plan needs to be revised, see attached	Accurate readings of the treated and untreated offgas could not be obtained on the OVA meter Flame out, because of a low oxygen atmosphere, was suspected Draeger tubes are expected to result in a similar monitoring performance.
3 Primary Moisture Separator	The primary moisture separator was not installed	To date, no moisture has been detected in the system and as a result is not required. The secondary moisture separator is present and if necessary, the primary moisture separator can be installed in the future.
4 Injection well valves	Valves were placed on each individual injection well, instead of each bank of wells	The additional wells were installed to allow a better balance of air flow to each well.
5 Air injection well I15	Air injection well I 15 was installed approximately 10 feet below the water table, instead of 7 feet below the water table. Air flow to this well is less then flow to other wells.	Currently, no action is planned on this well An option includes increasing the system pressure an additional 1 psi, (from 4 to 5) to increase flow at this well, this action would reduce the flow of air to other wells
6 Pressure Switch - PS-1 and PS-3	Pressure switches were reversed A relay was installed to shutdown the injection blower in the event that the extraction blower does not operate	The final wiring configuration was selected in the field and included the installation of an additional relay No significant impact on system operation is expected

7 Steel piping out of blowers	3" piping instead of 4" piping No U-trap installed	3" steel piping was more readily available at the area Pressure drops with this steel piping was not observed to be significant No condensation was observed in the system
8. Plastic sheeting on air injection wells	Plastic sheeting was not installed on air injection wells.	This was a typographic error in the work plan Plastic sheeting is not used on air injection wells.
9 Anchor trenches on plastic sheeting	Anchor trenches were not used on all extraction wells (those located in woods)	To install anchor trenches in the wooded areas would have destroyed a considerable area of vegetation These plastic sheets were anchored with ballast and soil Ongoing monitoring will be used to determine if additional anchoring will be required.
10 Blower panel	The blower panel was moved from inside the building to a remote location	The panel was larger than expected and would not fit in the building. The panel did not have to be explosion proof at the new location, resulting in signficant cost savings.

TABLE B-1-1 (REVISED)

AIR SAMPLE DECISION MATRIX
PILOT-SCALE AS/SVE SYSTEM
NWIRP, CALVERTON, NEW YORK

Condition			Action
Total VOCs > 200 ug/m^3	> 95% removal total	> 90% removal in first carbon unit (toluene)	
X	X	X	No action
X	X		• Remove the first canister in line and regenerate offsite • Replace the first canister with the second canister • Add a new canister to the second position in series
X			• Remove the first canister in line and regenerate offsite • Replace the first canister with the second canister. • Add a new canister to the second position in series

Condition			Action
Total VOCs < 200 ug/m^3	> 90% removal total	> 80% removal in first carbon unit (toluene)	
X	X	X	No action
X	X		• Remove the first canister in line and regenerate offsite • Replace the first canister with the second canister. • Add a new canister to the second position in series.
X			• Remove the first canister in line and regenerate offsite • Replace the first canister with the second canister • Add a new canister to the second position in series