



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

JACOB K. JAVITS FEDERAL BUILDING

NEW YORK, NEW YORK 10278-0012

MAR 18 1994

John Koliccius
Naval Facilities Engineering Command
10 Industrial Highway
Code 1821, Mail Stop 82
Lester, PA 19113-2090

Re: NWS Earle - Remedial Investigation (RI) Workplan

Dear Mr. Koliccius:

The U.S. Environmental Protection Agency (EPA) has partially reviewed the RI Workplan dated December 1993 and received by EPA on January 5, 1994.

Attachment A consists of comments on the Quality Assurance Project Plan (QAPP). The review was based on the Region II CERCLA Quality Assurance Manual, Revision I, dated October 1989. I am concerned with the amount of comments which were generated on the QAPP, since EPA has transmitted copies of this Manual to the Navy on two separate occasions, as well as to Halliburton NUS. Please refer to my letter to you dated December 1, 1993.

Attachment B consists of comments on the Health and Safety Plan (HASP). Additional comments on the Workplan will be transmitted to the Navy shortly.

If you have any questions concerning this matter, please contact me at 212-264-6609.

Sincerely yours,

Paul G. Ingrisano
Paul G. Ingrisano
Project Manager
Federal Facilities Section

Enclosures

cc: LCDR S. Smith, NWS Earle, w/o encl.
R. Marcolina, DEPE, w/encl.

Attachment A

1. General Comments

- A. CLP SOW OLM01.8 Contract Required Quantitation Limits are higher than Federal Maximum Contaminant Levels (MCL) for several compounds. Groundwater samples may be analyzed using the "Superfund Analytical Methods for Low Concentration Water for Organic Analysis, 10/92" to achieve lower quantitation limits for ARAR compliance.
- B. The proposed ICP method detection limit is not capable of meeting the Federal Drinking Water MCL of 4 $\mu\text{g/L}$ for beryllium. The CLP Contract Required Detection Limit is 5 $\mu\text{g/L}$ for beryllium using ICP methodologies. An alternate atomic absorption furnace technique for these analytes, which allows an approximate detection limit of 0.2 $\mu\text{g/L}$ for beryllium, may be found in the CLP SOW. Instruct the laboratory to use the alternate furnace method in order to comply with federal regulations. (Federal Register, Vol. 57 No.138, July 17, 1992)
- C. Soil samples from Sites 24/25 (Closed Pistol Ranges) appear to have been analyzed for metals only, while the site description indicates that preserved wooden posts are present at the site. Creosotes are commonly used as wood preservative, therefore, testing the soil for volatile and semi-volatile organics is warranted.
- D. No groundwater sampling is proposed for Sites 24/25 (Closed Pistol Ranges), Site 27 (Projectile Refurbishing Area), and EPIC Site L (MSC Van Parking Lot). Infiltration of precipitation and surface water is noted under the site description for Sites 24/25 and Site 27, respectively. No previous sampling has occurred at EPIC Site L. If there is justification for excluding the investigation of potential impact on groundwater at the aforementioned sites, provide this information in the plan.

2. Monitoring Well Construction/Installation

WP, Section 2.5, Page 2-3
SOP GH-1.7, Appendix B

- A. Polyvinyl chloride (PVC) is not recommended for monitoring well construction when sampling for low concentration volatile organics. PVC may adsorb or leach constituents thus affecting the quality of ground water samples.
- B. The sodium bentonite seal should be placed around the casing either by using a tremie pipe or, if a hollow stem auger is used, by putting the bentonite between the casing and the inside of the auger stem. This tremie

method is designed to ensure good sealing of the borehole from the bottom up.

- C. The Halliburton NUS SOP GH-1.7 states that screens may have to be decontaminated before use. It should be noted that well screens and casings must be steam cleaned prior to installation.
- D. SOP GH-1.7 quotes a length of 1 to 3 feet of bentonite pellets above the sand pack. Section 2.5 of the Work Plan specifies a minimum of 2 feet which is consistent with the regional requirement. Correct this discrepancy.

3. **Well Development**

WP, Section 2.5.1, Page 2-5
SOP GH-1.7, Appendix B

If air lifting is chosen for well development and compressed air is used to displace the well water, an oil filter between the compressor pump and the borehole is required to avoid contamination of the formation with petroleum hydrocarbons.

4. **Major Equipment Decontamination**

WP Section 2.10.1, Page 2-7

The plan states that well casings and screens will be steam cleaned unless "certified by the manufacturer to be free of contaminants." Well casings and screens must be steamed cleaned prior to installation to ensure that any oils are removed.

5. **Sampling Equipment Decontamination**

WP, Section 2.10.2, Pages 2-7 and 2-8
SOP SF-2.3, Appendix B
QAPP Section 6.7.2, Pages D-32 and D-33

- A. Potable water for decontamination may be from any treated municipal water system. The use of an untreated potable water supply is not acceptable.
- B. Deionized water used for equipment decontamination must be "demonstrated analyte-free water." This is defined as water that is free of contamination at levels below the quantitation limits of the analytical methods proposed for use, ie. the CLP-SOW CRQLs. It applies to all parameters of interest to this project and documentation must be available on-site stating the quality of this water as such.
- C. Use ultrapure nitric acid for the 10% nitric acid rinse solution.
- D. The acetone must be pesticide grade or better.

- meth, hex
- E. After rinsing with acetone, the deionized water rinse must be performed before air drying sampling equipment. Reverse the order of these two entries in the Work Plan and QAPP decontamination sequence.
 - F. All decontaminated sampling equipment is air dried regardless of the analytes being collected. Remove the parenthetical statement in the Work Plan and QAPP that indicates air drying for organic sample collection only.
 - G. The volume of water used subsequent to the solvent rinse step must be at least five times the volume of solvent.
 - H. While performing the decontamination procedure, phthalate-free gloves are recommended to prevent phthalate contamination of the sampling equipment by interaction between the gloves and the organic solvent.
 - I. In SOP SF-2.3, the solvent rinse for organics must specify acetone only or methanol followed by hexane.

If metals are not being collected, the nitric acid rinse may be omitted, and conversely, if organics are not being sampled, the solvent rinse may be omitted. Correct the exception statement in the SOP.

- J. Braided bailing lines are cited in SOP SF-2.3. See comment #7H for bailer line requirements.
- K. Comments #7C and #7D also apply to the sampling pump decontamination section of SOP SF-2.3.

6. Sampling Procedures

WP Section 3.2, Page 3-1

Include a section that describes the procedure for "floor sweep" sample collection for Site 14 (Mercury Spill). Specify the sampling equipment composition and decontamination protocols. The ERT Compendium for chip, wipe and sweep sampling may be used as a reference. (See Attachment I)

7. Groundwater Sampling

WP, Section 3.2.1, Page 3-1
SOP SA-1.1, Appendix B

- A. Prior to well evacuation, the presence or absence of immiscible phases must be determined for all newly constructed monitoring wells and any suspect existing wells. Immiscible layer detection with an interface probe is preferred as outlined in the RCRA Groundwater Monitoring Technical Enforcement Guidance Document. (See Attachment II)

- B. Decontamination of bailers used to purge the monitoring well is to proceed according to WP Section 2.10.2.
- C. Pumps, tubing, and bailer lines are to be rinsed with soapy water and deionized water prior to use in the well.
- D. Any tubing that contacts the sampling water should be made of polyethylene or Teflon and must be dedicated to individual wells.
- E. Samples must be collected within 3 hours of purging the groundwater well.

For low-yielding wells, samples must be collected as soon as the well has sufficiently recovered to fulfill sample volume requirements.

- F. Stabilization for temperature and pH must be within $\pm 10\%$ over 2 successive well volumes in order to comply with regional guidelines. Also, include stabilization requirements in SOP SA-1.1.
- G. Bailers must be constructed of Teflon or stainless steel. PVC bailers are not permitted.
- H. Bailer cords are to be stainless steel single-stranded wire, Teflon coated wire, or polypropylene monofilament such as fishing line. Braided or twisted cords of any type are not allowed as complete decontamination would be difficult, resulting in possible cross contamination between wells.
- I. Collect VOC samples before all other analytes to minimize the loss of volatile constituents to the ambient air.
- J. When filtering aqueous metals samples, a device made of polyethylene, polypropylene, or borosilicate glass should be used. The apparatus should be decontaminated by rinsing with a 10 percent HNO_3 solution, followed by a demonstrated analyte-free deionized water rinse before each use. Note: Region 2 only accepts data acquired from the total metals analyses.
- K. Pre-preserved sample containers are not permitted. Sample preservatives must be added in the field and the pH must be verified for all samples except volatiles. Periodically checking the pH is not sufficient.
- L. SOP SA-1.1 outlines two procedures for well evacuation on page 3. The first method of purging from just below the water surface is preferable to the second method of purging from the bottom of the well screen.

M. Page 8 of SOP SA-1.1 indicates that pumps may be used for sampling. If pumps are necessary to collect samples, pumping rates should not exceed 100ml/min for volatile organics.

8. Surface and Subsurface Soil Sampling

WP Section 3.2.3, Page 3-19

SOP GH-1.3, Appendix B

- A. Sample compositing is not recommended due to the dilution of contaminant concentrations and the inability to determine analyte concentrations at discrete depths. The elevation of detection limits from combining sample volumes is also a concern.
- B. Shelby tube sampling devices must be properly decontaminated using the procedure for sampling equipment in WP Section 2.10.2 and SOP SF-2.3. In addition, justification must be provided in the Plan when sampling with Shelby tubes since they do not allow the non-volatile soil sample to be homogenized, as per regional requirements. Additional comments follow in 8C.
- C. Using brass liners is not recommended for sampling inorganics. Brass is comprised of a metal alloy consisting mainly of copper and zinc which may compromise analytical results. Use of shellac coated steel tubes is prohibited due to the possible interaction between the material and the sample, thereby interfering with sample contaminant identification and quantitation. Also, there is the possibility of interference between the sample and the material used to cap the ends of the tube. Modify the Plan to state the exact sampling procedures and devices to be used, rather than referring to SOPs which contain many choices. The SOPs may remain, provided the Plan text states the specific procedures and implements from those SOPs which are proposed for use here.
- D. Collect grab samples for volatile organic analysis before containerizing other sample aliquots. The remaining soil must be homogenized prior to placement in sample containers. Homogenization is performed in order to minimize any bias of sample representativeness introduced by the natural stratification of constituents in the sample.

The following homogenization procedure is advocated by EPA Region II and is known as the "coning and quartering" method: After removing any debris not considered part of the sample, thoroughly mix the sample in the center of a decontaminated stainless steel pan or bowl, then quarter and mix the individual sample corners. Roll the entire sample to the center of the pan for a final mix.

9. **Test Pit Sampling**

WP Section 3.2.5, Page 3-20
SOP SA-1.3, Appendix B

- A. Halliburton NUS SOP GH-1.8 is referenced in the Work Plan for the test pit excavation procedure, but omitted from the Work Plan Appendix B. Please submit SOP GH-1.8 for review.
- B. SOP SA-1.2 Section 5.3, Surface Water Sample Collection, is cited in the Work Plan for test pit soil sampling. SOP SA-1.3 Sections 5.1.3 and 5.1.4 contain protocols for test pit sampling. Please correct this discrepancy.
- C. After completing the test pit sampling activities, and if contaminant concentrations are expected to be higher in the subsurface soil than in the surface soil, it is advisable to set aside the top layer of soil while excavating the test pit and backfill the top soil last.
- D. SOP SA-1.3 notes that test pit material may be deposited on the ground in order to obtain a sample. Include a statement that excavated material will be placed on polyethylene sheeting to prevent cross contamination of the surface soil.
- E. Comment #8A is relevant to the reference to compositing on page 4 of SOP SA-1.3.
- F. Volatile sample collection and sample homogenization procedures outlined in comment #8D are also required for test pit sampling.

10. **Surface Water and Sediment Sampling**

SOP SA-1.2, Appendix B

- A. PVC sampling chambers are indicated under surface water sampling equipment. See comment #2A concerning PVC as it applies to sampling equipment as well.
- B. See comment #8C as the statement concerning brass also pertains to brass Kemmerer sampling devices.
- C. Volatile sample collection and soil homogenization procedures discussed in comment #8D are applicable to sediment sampling.

11. **Quality Control Samples**

WP Section 3.5, Pages 3-25 and 3-26
QAPP Sections 5.6, 5.7, and 5.8, Pages D-26 and D-27

- A. Collect duplicate samples for volatile organic analysis as collocated grab samples, i.e., from adjacent soil segments.

- B. Both rinsate blanks and trip blanks are to be comprised of "demonstrated analyte-free water" as referenced in comment #5B.
- C. Equipment rinsate blanks are to be collected and analyzed for each type of equipment used each day a decontamination event is carried out, not to exceed one per day.

It is permissible to use the same aliquot of water on all equipment associated with a particular matrix, except volatiles, provided the rinse is performed sequentially. Filtration apparatus must be included in the rinse blank preparation.

Both dedicated and non-dedicated sampling equipment must be initially decontaminated, with an equipment rinsate sample collected subsequent to that initial decontamination. However, for dedicated equipment, additional decontamination will not be performed therefore no further equipment rinsate blank sample will be required since the possibility of cross contamination between sampling points does not exist.

Amend the rinsate blank frequency to correspond with the above stated EPA Region II requirements (which may reduce the number collected if decontamination does not occur daily). All rinsate blanks collected per the above frequency must be analyzed with the results applied to the corresponding environmental samples during data validation.

- D. Trip blanks may be prepared in advance to the sampling event, however, they must be preserved with 1:1 HCl in the same manner as volatile samples and cannot precede the sampling event by more than 24 hours. If these requirements cannot be met, prepare and preserve trip blanks in the field.

12. Analytical Program

WP Table 3-1

QAPP Table 3-1

- A. Equipment rinsate blanks are also required for the filtering apparatus used for the dissolved metals fraction. Include rinsate blank collection and analysis for these filtered groundwater samples. Note, Region 2 accepts data from the total metals analysis only.
- B. Collect a field duplicate sample of "floor sweepings" from Site 14 (Mercury Spill) if adequate sample volume exists.

C. See comment #11C regarding equipment rinsate blank frequency.

13. Summary of Analysis, Bottle Requirements, Preservation Requirements, and Holding Times

WP Table 3-2

QAPP Table 3-2

A. Maximum holding times are to be expressed as technical holding times, i.e., from sample to collection to analysis, and clearly indicated as such in the table or in a footnote.

For volatiles, semivolatiles, pesticides/PCBs, metals, mercury and cyanide, several entries in Table 3-2 must be corrected to reflect the technical holding times requirements found in the Region II CERCLA QA Manual. (See Attachment III)

B. For aqueous cyanide samples, 0.6g of ascorbic acid must be added when chlorine is present. KI-starch paper may be used to test for chlorine. The procedure is described in the Halliburton NUS SOP SF-1.2.

C. Aqueous total petroleum hydrocarbon samples are acidified to pH <2 with H₂SO₄ or HCl for a holding time of 28 days.

D. Method 9060 for TOC is designed for aqueous sample determination. The EPA recommends the Lloyd Kahn Method for soil/sediment TOC analysis, provided the concentrations are < 0.1% otherwise ASTM Method D3178 is recommended. (See Attachment IV)

Note that the holding time is 14 days from sample collection to analysis for TOC determination by the Lloyd Kahn Method.

E. EPA Method 353.3, nitrate-nitrite analysis, is intended for aqueous samples. Provide any modifications to Method 353.3 in the plan as it is cited for soils or see Attachment V for an alternate method.

F. Table 3-2 indicates that a modified Method 418.1 will be used for the analysis of total petroleum hydrocarbons in soil. Include a copy of the modified method in the plan for EPA approval. Also, the extraction method found in SW846 Method 9071 may be used, followed by Method 418.1 analysis.

G. Include the specific explosives parameters for soil samples in Table 3-2, as Site 1 and background soil samples are being analyzed for explosives. Soil/sediment samples that are being analyzed for explosives must be extracted within 7 days and analyzed with 40 days of

collection.

- H. When collecting aqueous samples for extractable analysis by CLP SOW OLM01.8, the laboratory must be supplied with a triple volume of selected samples (one per 20 samples collected) in order to perform matrix spike and matrix spike duplicate analyses. Add a footnote to this table indicating such. Also, for each aqueous sample to be analyzed for semi-volatile organics, supply the laboratory with 2 liters of sample volume.

14. Summary of Field Activities and Analytical Samples

WP Table 3-3

The following entries from Table 3-3 are not consistent with those found in Table 3-1:

Site 15 (Sludge Disposal Site) - 2 surface soils and 2 subsurface soils vs. 0 surface soils and 4 subsurface soils

Site 29 (PCB Spill Site) - 5 groundwater samples vs. 5/5 filtered/unfiltered groundwater samples

Background Samples - 4 groundwater samples vs. 4/4 filtered/unfiltered groundwater samples

Please reconcile the contradictions between Table 3-3 and Table 3-1.

15. Site 1 (Ordnance Demilitarization Site)

WP Section 4.3, Page 4-3

The text does not specify TPH analysis for groundwater samples although TPH is indicated in Table 3-1. Please amend this discrepancy.

Also, previously collected data from the 1992 SI resulted in elevated VOC concentrations in MW-2. The current proposal is to install a soil boring upgradient of existing well MW-2 to "determine if upgradient soils are contributing to groundwater contamination." Justify why the current proposal for analysis of the subsurface soil does not include TCL organic compounds.

16. Site 14 (Mercury Spill)

WP Section 9.3, Page 9-1

What is the size or area of the warehouse floor? Include this information in the plan.

If the size of the warehouse permits, take a wipe sample after collecting the floor sweepings.

17. **Sit 15 (Sludge Disposal Site)**

WP Section 10.3, Page 10-2

Surface soils are included in Tables 3-1 and 10-1 while the text omits this matrix. Please reconcile the text with the tables.

18. **Background Samples**

WP Section 19.2, Page 19-5

Table 3-1 also indicates nitrate/nitrite analysis for soil background samples whereas the text excludes this parameter. Correct this discrepancy.

19. **References**

According to the table of contents, references for the Work Plan should precede the appendices and no references are present. Add the list of references used for the Work Plan.

20. **Sample Shipment/Chain-of-Custody**

SOP SA-6.1, Appendix B

QAPP Section 7.3, Pages D-35 and D-36

A. Shipment of environmental samples must occur within 24 hours of sample collection via an overnight courier. This will allow the analytical laboratory a reasonable period for holding time compliance.

B. Placing custody seals on individual sample containers and taping the bag containing sample documentation to the underside of the cooler lid are recommended. ("Sampler's Guide to the Contract Laboratory Program," EPA/540/P-90/006, December 1990)

21. **Sample Preservation**

SOP SF-1.2, Appendix B

QAPP Section 5.9, Page D-27

A. Sample containers are to be chosen, cleaned and quality controlled according to protocols in the OSWER Directive #9240.0-05A: Specifications and Guidance for Contaminant-Free Sample Containers, December 1992. Analytical proof of cleanliness must be available on site for auditing purposes. (See attached)

B. Sample containers are no longer obtained through the Sample Management Office. Remove this statement from SOP SF-1.2.

C. See comment #7K concerning pre-preserved sample containers.

- D. Volatile samples must be preserved by first determining the number of 1:1 HCl drops needed to achieve a pH <2 on an additional portion of sample water of equal volume.
- E. In SOP SF-1.2 under aqueous cyanide sample preservation, include the lead acetate test for sulfides and the addition of cadmium carbonate when required.
- F. Preservative concentrations should be designed to minimize the volume of preservative added to the sample, thus avoiding a sample dilution effect.

22. Project description
QAPP Section 1.0, Page D-2

Include NEESA requirements for Level C QC in the QAPP as these requirements define the QA/QC procedures for the chemical analysis of environmental samples. Also, define the laboratory approval process performed by NEESA. Include frequencies for lab auditing, Performance Evaluation Material (PEM) analyses, and duration of NEESA lab approval.

23. Calibration Procedures
QAPP Section 8.0, Page D-37

Field equipment should be calibrated at the beginning of each sampling day.

24. Data Reduction, Validation, and Reporting
QAPP Section 10.0, Page D-39

- A. Data validation personnel must be independent of the laboratory performing the chemical analysis. Provide the names and qualifications of the personnel assigned to perform this task in the Plan.
- B. Regional requirements specify using the following SOPs (See Attachment VI) for data validation of TCL organic and inorganic compounds:

CLP Organics Data Review and Preliminary Review
SOP HW-6, Revision 8, 1/92

Evaluation of Metals Data for the Contract Laboratory Program
SOP HW-2, Revision 11, 1/92

The EPA may revalidate data to confirm the data validation process. In order to perform this verification, a CLP equivalent data package must be made available upon request for samples being audited.

In addition, provide the SOPs to be used by Halliburton NUS personnel for the remaining analytical parameters

(other than the TCL organics and inorganics).

25. Internal Quality Control Checks

QAPP Section 11.0, Page D-41

Rinsates are to be prepared with "demonstrated analyte-free" water, not "distilled" water. Amend the text.

26. Performance and System Audits

QAPP Section 12.0, Page D-43

- A. Before final approval of the Work Plan, the name and location of the laboratory performing the chemical analyses must be provided in the QAPP.

If the laboratory selected to provide analytical services is not a CLP laboratory, the EPA reserves the right to audit the lab and to send performance evaluation samples.

- B. Include any relevant Navy, NEESA, or state certifications and performance evaluations for parameters of interest to this project in the QAPP.

TYPOGRAPHICAL ERRORS

WP Section 2.1, Field Operations Summary, Page 2-1

The field operations summary states that 16 sites are under consideration when there are 17 sites according to previous statements in the plan.

WP Section 2.8, Surface Water, Page 2-6

A total of 10 surface water samples is indicated here while page ES-2 cites 7 surface water samples.

WP Sections 3.2.2 and 3.2.3, Soil Sampling, Pages 3-18 and 3-19

The procedure for sampling equipment decontamination is described in Section 2.10.2, not Section 2.9.2.

Attachment I - ERT Compendium for Chip, Wipe, and Sweep Sampling
Attachment II - RCRA Technical Enforcement Guidance Document
Attachment III - Technical Holding Time Requirements
Attachment IV - Lloyd Kahn TOC Method
Attachment V - Corp of Engineers Nitrate-Nitrite Method
Attachment VI - Region II Data Validation SOPs

Attachment B

1. The OSHA PEL for Cadmium has been reduced to 5 ug/m³ or .005 mg/m³. This should be referenced in Table 4-1.
2. Section 4.3.2 states that all mechanized equipment brought on-site for work will be periodically inspected. There should be some written documentation of these periodic inspections in the Health and Safety Log for the site.
3. Section 5.3 allows for the use of an air purifying respirator if vinyl chloride concentrations are greater than 1 ppm, but less than 50 ppm. This is not consistent with OSHA's requirements regarding vinyl chloride. While OSHA does allow for the use of some air purifying respirators at some concentrations, vinyl chloride has poor warning properties and EPA suggests that an SCBA be used if more than 1 ppm of vinyl chloride is detected. The limitations of air purifying respirators should be discussed in Section 6.4, "PPE Limitations".
4. Sections 11.6 and 11.8 of the plan seem somewhat contradictory. Section 11.6 states that, "Personnel engaged in on-site activities will practice the "buddy system" to insure the safety of all personnel involved in this operation." Yet, Section 11.8 states that, "Personnel will not always be working in close proximity to one another during field activities." This seeming discrepancy should be clarified.
5. The chain of command referenced in Section 13.2 should be included in the HASP.
6. An eyewash should be available at the sites. Especially if solvents and acids are to be used during sampling and decontamination procedures.
7. Section 13.9 does not make it clear as to whether phone communication will be made available at the work sites. This should be clarified. Phone locations should be provided in Section 11.8 of the HASP.
8. The emergency reference in Section 13.9 is for Hudson County-Jersey City/Bayonne. However, the NWS Earle is located in Monmouth County-Colts Neck. The hospital identified in this section is not the one closest to the site. This information should be corrected. Directions and a map to the nearest medical facility should be provided..