OHIO EPA

State of Ohio Environmental Protection Agency
Northwest District Office
347 North Dunbridge Road
Bowling Green, Ohio 43402
(419) 352-8461 **FAX** (419) 352-8468

No Formal Responses Necessary

Bob Taft
Governor

RE: U.S. NASA PLUM BROOK
ERIE COUNTY
OHIO I.D#: 322-0552
COMMENTS FOR PBOW
GROUNDWATER INVESTIGATION
GOALS FOR NATURE AND EXTENT
AND RISK ASSESSMENT FACSIMILE

February 23, 2001

Department of the Army
Nashville District, Corps of Engineers
Mr. Jim Beaujon
P.O. Box 1070
Nashville, TN 37202-1070

Dear Mr. Beaujon;

The Ohio Environmental Protection Agency (EPA), Division of Emergency and Remedial Response (DERR), has reviewed the proposal for the Plum Brook Ordnance Works (PBOW), Groundwater Investigation with Goals for Nature and Extent and Risk Assessment, for the Former Plum Brook Ordnance Works, Sandusky, Ohio. This document was submitted, by facsimile, to the Ohio EPA by the U.S. Army Corps of Engineers (USACE), on January 31, 2001 for review and comments. The Ohio EPA, DERR and the Division of Drinking and Ground Waters (DDAGW) are providing the following comments concerning the groundwater investigation and risk assessment.

IT for meeting

1. The attached table (Attachment A) notes all of the shallow and bedrock monitoring wells that currently exist at the NASA Plum Brook Ordnance Works (PBOW). These wells were identified from a review of both Ohio EPA DERR and DHWM files/documents. To facilitate the development of a sitewide ground water investigation approach at the PBOW, Ohio EPA requests that IT Corp. review the table below for accuracy. To better assist IT Corp. in refining the scope of the investigation, Ohio EPA recommends that the consultant prepare a sitewide map, in plate-size dimensions, which locates every usable shallow and deep monitoring wells installed at the PBOW. The map should include the approximate 'shaded' boundaries of each area of concern (AOC) to be investigated. For those AOCs associated with Ohio EPA DERR, the map should contain Acid Areas #1, #2, and #3, Additional Burning Ground, G-8 Burning Ground, Snake Road Burning Ground [Disposal Area #3], Pentolite Road Red Water Ponds, West Area Red Water Ponds, TNT Areas A, B, and C, and Upper and Lower Toluene Tanks Area. For those AOCs associated with Ohio EPA DHWM, the map should contain the Reactor Area, Garage Maintenance Area, and Space Power Facility.

Not DOD

ground water in the area, its quality must be maintained. Therefore, IT Corp. should evaluate the quality of shallow-overburden ground water by comparing to MCLs and/or risk-based standards; Ohio EPA will review and approve an investigative approach, upon receipt from IT Corp. and prior to implementation.

✳ For the purposes of the sitewide investigation, IT Corp. will not be required to generate a shallow-overburden ground water background database, but will be required to generate a background database for the bedrock saturated zone as this zone is the first significant aquifer most likely to be utilized for potable purposes in the vicinity. Ohio EPA will reserve the right to require background to be established for the shallow-overburden zone should conditions warrant. Ohio EPA anticipates that a ground water use restriction, a local health department requirement for potential new well constructions, or a land use control restriction be implemented at the PBOW for the shallow saturated zone (refer to Comment 8 below for additional information).

✳ 4. Ohio EPA recommends that IT Corp. install three (3) bedrock monitoring wells in the southern portion of the PBOW along Patrol Road for the purpose of generating a background ground water quality database. IT Corp. should not consider bedrock well IT-BG8-BED-GW001 as a potential background location as it is too proximally located to the G-8 Burning Ground Area AOC. The three new bedrock wells should be installed using the same methodologies and materials as the existing background well (BED-MW20) and screened in the same geologic unit. Ohio EPA is amenable to using a Hydropunch to locate favorable positions for bedrock monitoring wells. Upon the identification of a bedrock saturated zone capable of producing enough ground water for sampling purposes, a standard 2-inch monitoring well should be installed as a confirmation sampling point.

Areas to avoid for background sampling locations include:

(1) past waste management areas where solid and/or hazardous wastes or wastewaters may have been placed on the ground, areas of concentrated air pollutant deposition (from a definable localized source), or areas affected by runoff;

(2) roads, roadsides, parking lots, areas surrounding parking lots or other paved areas, railroad tracks or railway areas or other areas affected by their runoff;

(3) storm drains or ditches presently or historically receiving industrial or urban runoff;

(4) spill areas;

(5) material handling areas, such as truck or rail car loading areas or near pipelines; and

(6) fill areas.

7. IT Corp. has requested input, from Ohio EPA, as to how naturally occurring BTEX (benzene, toluene, ethylbenzene, and toluene) in bedrock ground water should be evaluated for the purpose of the sitewide ground water investigation. IT Corp. should sample the four bedrock background monitoring wells for VOCs to determine a 'reference' level of naturally occurring BTEX in the bedrock saturated zone. IT Corp. may have to calculate a background concentration for each constituent based on background analytical results in order to adequately evaluate upgradient and downgradient bedrock ground water quality at the PBOW. For additional information on the occurrence of BTEX in shale bedrock in north-central Ohio, IT Corp. is referred to the Ohio EPA report entitled, ''Draft' Report of "Ohio EPA Research Study for the Erie County Landfill Site, The Presence of Naturally Occurring Leachable BTEX in the Ohio Shale, Erie County, Ohio"'. A copy of this report may be requested.

8. IT Corp. has requested input from Ohio EPA as to the location of the point of compliance at the PBOW. IT Corp. notes that currently, there is no Land Use Control Action Plan (LUCAP) associated with the PBOW so that parcels of land within the site may be sold at any time for unrestricted use (i.e., residential use). A LUCAP may be implemented at the PBOW in the future. Based on current PBOW conditions, three ground water assessment scenarios exist:

   a. Onsite unrestricted ground water use;

   b. Ground water reaching the downgradient fence line assuming a LUCAP has been emplaced; and

   c. Ground water migrating offsite and reaching a residential well.

   Ohio EPA has identified several items which must be resolved before a point of compliance can be designated at the PBOW. These items are: 1) what is the potential for sale of portions of the PBOW for residential use; 2) if residential use is a distinct possibility, then it must be determined if onsite sources of ground water will be utilized for residential purposes (i.e., will the local municipality provide potable water to new occupants at the PBOW); 3) what are the potential onsite and offsite risks to human health and the environment; 4) what is the planned future use of the site? It is premature at this point to designate a point of compliance at the PBOW until more information about the interim and final disposition of the site is evaluated.

9. IT Corp. has requested input from Ohio EPA as how to assess ground water; on a sitewide or SMWU/AOC basis? Per a May 10, 2000 meeting at PBOW to discuss the investigation of the Red Water Ponds and TNT Areas A and B, the USACE recommended that the investigation of ground water be addressed on a sitewide basis as opposed to an AOC-specific basis. USACE needs to more fully develop the scope of work and the overall investigative approach for the sitewide ground water investigation at the PBOW.

Attachment A

'DERR' Area of Concern (AOC)	AOC Monitoring Wells-shallow	AOC Monitoring Wells-bedrock
Acid Area #1	AA1-GW002	AA1-BED-GW001
Acid Area #2	MK-MW09, MK-MW10, MK-MW11, AA2-GW002	AA2-BED-GW001, PB-BED-MW19
Acid Area #3	AA3-GW002	AA3-BED-GW001
Additional Burning Ground Area	ABG-GW002	ABG-BED-GW001
G-8 Burning Ground Area	--	BG8-BED-GW001
Lower Toluene Tanks Area	MK-MW14, MK-MW15	--
Pentolite Road Red Water Ponds	IT-MW05, PR-MW07, PR-MW08, PR-MW09	PB-BED-MW15
Snake Road Burning Ground Area Disposal Area #3	GCL-MW01, GCL-MW02A, GCL-MW02B, GCL-MW03	--
TNT Area A	MK-MW22, MK-MW23, MK-MW24, TNTA-MW10, TNTA-MW11	PB-BED-MW17, PB-BED-MW18
TNT Area B	MK-MW16, MK-MW17	TNTB-BED-GW001, TNTB-BED-GW002
TNT Area C	MK-MW12, IT-MW09, TNTC-MW03, TNTC-MW04, TNTC-MW05, TNTC-MW06	PB-BED-MW13
Upper Toluene Tanks Area	MK-MW20	PB-BED-MW16
West Area Red Water Ponds	WA-MW01, WA-MW02, IT-MW02, IT-MW07, IT-MW08, IT-MW10	PB-BED-MW14
Background	IT-MW01	PB-BED-MW20

Attachment B

Inorganics	Volatile Organics	Semi-Volatile Organics	Explosives
aluminum	acetone	2-nitroaniline	2,4-dinitrotoluene
arsenic	benzene	3-nitroaniline	2,6-dinitrotoluene
barium	carbon disulfide	4,6-dinitro-2-methylphenol	1,3,5-trinitrobenzene
chromium	ethylbenzene	bis(2-ethylhexyl)phthalate	1,3-dinitrobenzene
cobalt	toluene	2,4-dinitrophenol	3-nitrotoluene
copper	xylenes	di-n-octyl phthalate	nitrobenzene
cyanide	methylene chloride	2-methylphenol	1,3-dichlorobenzene
iron	chlorobenzene	4-methylphenol	1,2,4-trichlorobenzene
lead	trichloroethene	4-nitrophenol	2,4,6-trinitrotoluene
manganese	1,1-dichloroethene	dibenzofuran	4-amino-2,6-dinitrotoluene
mercury	tetrachloroethene	fluorene	tetryl
nickel	1,1-dichloroethane	phenol	
selenium	1,2-dichloroethane	diethyl phthalate	
vanadium	cis-1,2-dichloroethene	2,4,5-trichlorophenol	
zinc	trans-1,2-dichloroethene	2-methylnaphthalene	
	vinyl chloride	phenanthrene	
	chloroform	naphthalene	
	bromodichloromethane	isophorone	
	1,1,2-trichloroethane	2,4-dimethylphenol	
	1,1,1-trichloroethane		
	chloroethane		
	2-hexanone		