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NSWC CRANE
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DEPARTMENT OF THE NAVY
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA 47522-5000

IN REPLY REFER TO:
5090/H1.4.5
0924
27 DEC 1990

United States Environmental Protection Agency
Region V
Attn: William Messenger
230 South Dearborn St.
Chicago, IL 60604

Dear Mr. Messenger:

Submitted for review as enclosure (1) are the responses to the deficiencies in the Preliminary Assessment (PA) report required for evaluation under the Hazard Ranking System (HRS). These responses and attached documents should answer most of the questions on the PA deficiency checklist.

Please note that the Solid Waste Management Units discussed herein are under Corrective Action (CA) requirements as a condition of the Naval Weapons Support Center Crane's (NWSCC) Final Resource Conservation and Recovery Act (RCRA) Part B Permit. Further information pertaining to the nature and extent of contamination will become available as site investigations continue in accordance with the timetables in the CA portion of the RCRA Part B Permit.

not a Part B PERMIT RATHER A STORAGE PERMIT

Responses to items 1D1 - 1D6 and 3A - 3D will be forwarded by Mr. Jeff Ciocco of Northern Division, Naval Facilities Engineering Command in Philadelphia, Pennsylvania.

NWSCC point of contact is Mr. Thomas J. Brent, Code 0924C, telephone 812-854-3114.

Sincerely,

J. [illegible]
Commander, CEC, USN
Public Works Officer
By direction of the
Commanding Officer

Encl:
(1) Response to PA Deficiencies of the HRS

Copy to:
NORTHNAVFACENGCOM, Philadelphia (Code 1422)

Solid Waste Management Unit (SWMU) numbers as used herein refer to the Installation Restoration (IR) sites as numbered on the attached topographic maps (attachments 1 - 8). The 31 SWMUs are highlighted on the topographic maps. Please note that the colors the SWMUs are marked in have no special significance. Also note that the boundaries of the SWMUs indicated on the maps are meant only to be approximate boundaries of the SWMUs. Official SWMU perimeters have not been determined. Attachment 9 is a numerical key to the sites.

1. OVERVIEW/SITE HISTORY

1A2. Topographic map of surrounding area.

Response: Topographic maps are included as attachments 1-8.

1C. Describe any releases of wastes to groundwater, surface water, or air:

Response: This information was provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions.

1E. Describe any prior spills that occurred at the site:

Response: This information was provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions.

2. WASTE/SOURCE INFORMATION

2D. Describe as specifically as possible the amount of waste treated, stored, or disposed in each waste management unit on-site (e.g. landfills, impoundments, tanks, etc.).

Response: This information was provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions.

2E. Describe as specifically as possible the condition/integrity of each waste management unit (e.g. are landfills equipped with liners or caps).

Response: This information was provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions.

2G. Describe the size/volume/capacity of each waste management unit:

Response: This information was provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions.

3. GROUNDWATER PATHWAY INFORMATION

3F. Describe, as precisely as possible, the geology and hydrogeology of the site area (including formation names, thickness, types of material and depth from surface, soils).

Response: This information was provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions.

3I. Estimate annual net precipitation at the site.

Response: Annual net precipitation is 38 inches. ~~SWMU's~~ SOURCE

3L. Determine if site is located in an area of Karst terrain.

Response: SWMUs 1, 2, and 5 are located in Karst terrain.
not correct

4. SURFACE WATER PATHWAY INFORMATION

4A. Describe surface water bodies within 15 miles of the site or provide a map.

Response: Topographic maps of NWSCC with the locations of the 31 SWMUs highlighted are provided (see attachments 1 - 8). Attachment 9 is a numerical key to the SWMUs. Also listed in attachment 9 are the primary surface drainage pathways.

Following the streamflows, the following bodies of water are within 15 miles of the SWMUs listed:

Water Body		SWMU #s
Lake Gallimore	--	2-3, 4, 6, 9-13, 15-22, 24, 26-29
Seed Tick Reservoir	--	14, 31
White River	--	1, 5, 9, 13, 14, 19
Lake Greenwood	--	23, 30
Indian Creek	--	1, 2, 5
L. Sulphur Creek	--	1, 5
Sulphur Creek	--	1, 2, 5
Boggs Creek	--	2-4, 6, 9-22, 24, 26-29, 31
Turkey Creek	--	4, 12, 15, 16, 20-22, 26, 27
Culpepper Branch	--	7, 8, 25
First Creek	--	2, 7, 8, 23, 25, 30

4B. Discuss the probable surface runoff pattern from the site to surface waters, including the distance to the nearest body of surface water, or provide a map.

Response: The names and the distances to nearest named body of surface waters are included in attachment 9. Unnamed intermittent streams, less than 2000 feet from each site, carry runoff to these water bodies

4C. Describe the points at the site where hazardous substances begin to migrate and their probable point of entry into a surface water body.

Response: Currently, there is no empirical evidence of migration from any of the SWMUs. Nor would migration be point specific, since each SWMU covers a broad area. Migration would likely occur via runoff into surface streams and intermittent streams which are shown on the topographic maps provided as attachments 1-8.

4D. Identify if surface water drawn from intakes within 15 miles from the probable point of entry is used for any of the following purposes:

4D1. Commercial livestock watering;

Response: According to the Martin County Agricultural Extension Agent, Indian, Boggs, and Sulphur Creeks are used for livestock watering. A Davies County Soil Conservation Service representative stated that First Creek is also used for livestock watering.

4D2. Commercial food preparation:

Response: NWSCC has a cafeteria serving breakfast and lunch to employees, and a consolidated mess which serves 3 meals daily to employees and military personnel and their dependents.

4D3. Commercial industrial purposes other than drinking water, recreation, or fishery use.

Response: NWSCC has numerous industrial processes, including the manufacture of munitions, pyrotechnics, and electronic components.

4E. Identify the nature and size of any of the following targets associated with surface water bodies within 15 miles downstream of the probable point of entry.

4E1. Population served by intakes of drinking water:

Response: NWSCC supplies water from Lake Greenwood to 43 households in Burns City. Assuming 3.8 persons per household gives a population served of 163 persons. The resident military population fluctuates as personnel frequently receive new assignments. However, the resident military population is approximately 100. Water from Lake Greenwood is also used to supply drinking water to employees of NWSCC, except for isolated areas which are supplied by groundwater. Employment levels vary depending on the demand for weapons support. Total number of employees which receive drinking water from Lake Greenwood at NWSCC ranges from 35000 to 5500. ?

4E2. Population associated with recreational use:

Response: Boating and fishing is allowed on the waters at NWSCC. This year 1600 persons were issued passes for boating and fishing. 1365 of these were used for Lake Greenwood, and the rest used for Lakes Gallimore and Seedtick, and streams such as Boggs and Turkey.

4E3. Sensitive environments (including wetlands [5 acre minimum] and critical habitats of a federally endangered species):

Response: Bald eagles have attempted nesting at Lake Greenwood. However, no eggs have yet been produced.

At this time wetlands have not been defined at NWSCC. A wetlands mapping project is scheduled for 1991.

4E4. Economically important resources (e.g. shellfish):

Response: There are no economically important resources associated with surface water bodies 15 miles downstream from any of the SWMUs.

4F. Discuss any qualitative, quantitative, or circumstantial evidence of contamination of surface waters caused by management of hazardous substances on-site:

Response: Although the potential exists, there is no evidence of contamination of surface waters. See the information provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990. Also see the Corrective Actions portion of the RCRA Part B Permit and its submissions. ?

4G. Estimate the size of the upgradient drainage area from the site:

Response: See attachment 10.

4I. Discuss the average annual stream-flow associated with surface water within 15 miles of the site:

Response: According to data gathered by NWSCC personnel in 1989, average flow for Boggs Creek is 2.5 cfs at SWMU 19. Flows are expected to be higher to the south as other tributaries, such as Seed Tick, flow into Boggs. First, Sulphur and Seed Tick Creeks are of similar size to Boggs above SWMU 19. Turkey Creek is a tributary to Boggs above SWMU 19 and therefore has a lower flow than Boggs. Culpepper Branch is a tributary to First Creek, and Little Sulphur is a tributary to Sulphur Creek, and therefore both have lower flows than Boggs. Indian Creek, as measured by the United States Geological Survey near Springville in 1974, has an average yearly stream-flow of 55 cfs. East Fork White River as measured by the United States Geological Survey near Shoals in 1990 (January - September), has an average annual stream-flow of 5450 cfs. The HRS uses ranges of <5, 5-50, 50-500, 500-10,000, and >10,000 cfs for stream flow. As such, the following is a list of the average annual stream-flow associated with surface waters within 15 miles of the SWMUs:

Stream	Flow (cfs)
Boggs Creek	5 - 10
Culppeper Branch	<5
East Fork White R.	500 - 10,000
First Creek	<5
Indian Creek	50 - 500
Little Sulphur	<5
Seed Tick	<5
Sulphur Creek	<5 ?
Turkey Creek	<5

SOURCES?

4J1. Describe production rate of fisheries:

Response: There are no fisheries within 15 miles of any of the sites.

5. AIR PATHWAY INFORMATION

5A. Describe if there has been an observed release of a hazardous substance to the atmosphere:

Response: There has neither been a direct observation or indirect observation (i.e. the analysis of air samples) for most of the SWMUs. However, information in Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990, should be reviewed, especially for SWMUs 1, 3, 16, and 19, as these are sites of either past or present open burning, detonation, and testing.

5B. Determine the shortest distance to the closest residence or regularly occupied building or area from any on-site air emission source.

Response: Regularly occupied buildings (offices, manufacturing facilities) are located at, or within a few hundred feet of most SWMUs. The following is a list of SWMUs that do not have regularly occupied buildings on site. Distances to the nearest residence or regularly occupied building are also given:

SWMU #	Distance
4	2000'
5	1700'
7	2000'
8	2000'
9	6000'
25	1700'
27	4500'
31	1500'

5C. Describe the following types of land use near the site, and indicate their distance from any on-site emission source:

5C1. Commercial/industrial/institutional:

Response: Commercial/industrial operations are located at, or within a few hundred feet of most SWMUs. The exceptions are as follows:

SWMU #	Distance
7	7500'
8	10000'
25	12000'

5C2. Single family residential:

Response: Single family residential dwellings on Center are circled in red on the attached topographic maps (see attachments 1-8). Distances to the nearest SWMU from these dwellings are given in attachment 11. Since there has not been an observed release of hazardous substance to the atmosphere, the closest SWMU to the single-family dwelling unit is used for distance determinations in attachment 11. The reviewer, after evaluating the information provided in the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990, may wish to reevaluate these distances. Also note single family residential dwellings along the boundary surrounding NWSCC.

5C3. Multi-family residential:

Response: Multi-family residential units are located at NWSCC and at Crane Village. Distances are as follows:

UNIT	DISTANCE	SWMU #
Bachelors Officers Quarters	2000'	30
Bachelors Enlisted Quarters	1500'	30
Crane Village Apartments	3000-4500'	25

5C4. Parks:

Response: There are no parks near any of the SWMUs.

5D. Determine if sensitive environments are within 4 miles of an on-site emission source.

Response: See the response to item 4E3.

6. ON SITE INFORMATION

6A. Describe any areas of contamination that are within 2 feet of ground surface:

Response: All of the SWMUs are areas contaminated within 2 feet of ground surface. See the Solid Waste Management Unit, Current Operations and CERCLA Sites (3 volumes) sent on July 2, 1990.

6B. Provide the number of children under seven years old living, attending school or daycare where contamination is less than 2 feet of ground surface:

Response: There are no homes, schools or daycare facilities located at any of the SWMUs.

6C. Describe the measures taken to limit access to areas with contamination (e.g. fences, guards, etc.):

Response: NWSCC is surrounded by a posted security fence. Access to NWSCC is via 5 gates. Security personnel are stationed at the gates to check for identification badges, which are required for entry to NWSCC. In addition, SWMUs 1 - 4, 11 - 14, and 16 - 21 are individually surrounded with security fences and gates.

MAP NO.	SMWU	SITE NO.	DRAINAGE	DISTANCE (ft. unless noted)
1	ABG	03/10	Little Sulphur Creek	<500
2	Rockeye	10/15	SW Turkey Creek/E Sulphur Creek	4000/1300
3	Demo	06/09	W Boggs Creek/E Turkey Creek	2000/1000
4	Old Rifle Range	07/09	Turkey Creek	600
5	Dye Burial Grounds	02/11	Little Sulphur Creek	2000
6	Pesticide Control Area/R-150 Tank	09/03	Boggs Creek	2500
7	Old Burn Pit	05/03	Culpepper Branch of First Creek	2000
8	McComish Gorge	04/02	Culpepper Branch of First Creek	<500
9	Mustard Gas Burial Grounds	01/12	Boggs Creek	2.25 mi.
10	Old Storage B-225	11/00	Boggs Creek	1.25 mi.
11	Load and FIll Area, B-106 Pond	08/17	Boggs Creek	5000
12	Mine Fill A	12/14	Turkey Creek	5000
13	Mine Fill B	13/14	Boggs Creek	1500
14	San. LF & Lithium Battery	14/00	Seed Tick	1 mi.
15	Roads and Grounds Area	15/06	Turkey Creek	1.75 mi.
16	Cast High Expl. Fill/Incinerator	16/16	Turkey Creek	1500
17	PCB Capacitor Burial/Pole Yard	17/04	Boggs Creek	4000
18	Load and Fill Area Buildings	18/13	Boggs Creek	1000
19	Pyro. Test Area	19/00	Boggs Creek	<500
20	CAAA QA/QC Test Area	20/00	Turkey Creek	4500
21	DRMO Storage Lot	21/00	Turkey Creek	1000
22	Lead Azide	22/00	Turkey Creek	1.5 mi.
23	Battery Shop	23/00	Lake Greenwood	3000
24	Sludge Drying Beds A	24/00	Boggs Creek	<500
25	Sludge Drying Beds B	24/00	Culpepper Branch of First Creek	500
26	Highway 58 Dump Site A	25/07D	Turkey Creek	4000
27	Highway 58 Dump Site B	26/08D	Turkey Creek	1000
28	Illuminant B-126	27/00	Boggs Creek	2.25 mi.
29	Maintenance Shop, B-1820	28/00	Boggs Creek	2 mi.
30	PCP Dip Tank, B-56	29/07	Lake Greenwood	1500
31	Land Farm	30/00	Seed Tick	1.5 mi.

ATTACHMENT (9)

SWMU	DRAINAGE (Acres)
1	545
2	69
3 & 4	665
5	16
6	17
7	63
8	29
9	23
10, 11, 18	815
12	155
13	80
14 & 31	141
15	138
16	62
17	30
19	18802
20 & 26	48
21	603
22	76
23	23
24	25
25	80
27	69
28	3
29	10
30	9

ATTACHMENT (10)

	DISTANCE (ft.)	SITE
Farmhouse 1	1300	11
Farmhouse 2	3500	11
Farmhouse 3	4500	11
Farmhouse 5	9250	2
A - U, ZZ	1000 - 3000	30
W	6500	7
X	1250	28
Y	3250	28
Z	3250	7

ATTACHMENT (11)